FORMULAE AND TABLES

FOR

ACTUARIAL EXAMINATIONS

(INSTITUTE OF ACTUARIES)

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Formulae for the use of Candidates at the Examinations

SEE ALSO HEADINGS TO INDIVIDUAL TABLES

The list given below is intended to help candidates with formulae which may be found hard to memorize. Inclusion in the list does not mean that a proof may not be required.

1. FINITE DIFFERENCES

Newton's formula: $u_{x+nh} = u_x + n_{(1)}\Delta u_x + n_{(2)}\Delta^2 u_x + \dots$

Newton's divided-difference formula:

$$u_x = u_a + (x-a)\underset{b}{\triangle} u_a + (x-a)(x-b)\underset{bc}{\triangle^2} u_a + \dots$$

Lagrange's interpolation formula:

$$\frac{u_x}{(x-a)(x-b)\dots(x-k)} =$$

$$\frac{u_a}{(a-b)(a-c)\dots(a-k)}\cdot\frac{1}{x-a} + \frac{u_b}{(b-a)(b-c)\dots(b-k)}\cdot\frac{1}{x-b} + \dots$$

Gauss's forward formula:

$$u_x = u_0 + x_{(1)}\Delta u_0 + x_{(2)}\Delta^2 u_{-1} + (x+1)_{(3)}\Delta^3 u_{-1} + (x+1)_{(4)}\Delta^4 u_{-2} + \dots$$

Gauss's backward formula:

$$u_x = u_0 + x_{(1)}\Delta u_{-1} + (x+1)_{(2)}\Delta^2 u_{-1} + (x+1)_{(3)}\Delta^3 u_{-2} + (x+2)_{(4)}\Delta^4 u_{-2} + \dots$$

Summation by parts: $\sum_1^n (v_x \Delta u_x) = [u_x v_x]_1^{n+1} - \sum_1^n (u_{x+1}\Delta v_x)$

$$(1+\Delta)^r \equiv e^{r\frac{d}{dx}} \qquad \frac{du_x}{dx} = \Delta u_x - \frac{\Delta^2 u_x}{2} + \frac{\Delta^3 u_x}{3} - \dots$$

$$u_{m:n} = u_{0:0} + (m_{(1)}\Delta_x + n_{(1)}\Delta_y)u_{0:0} + (m_{(2)}\Delta_x^2 + m_{(1)}n_{(1)}\Delta_x\Delta_y + n_{(2)}\Delta_y^2)u_{0:0} + (m_{(3)}\Delta_x^3 + m_{(2)}n_{(1)}\Delta_x^2\Delta_y + m_{(1)}n_{(2)}\Delta_x\Delta_y^2 + n_{(3)}\Delta_y^3)u_{0:0} + \dots$$

5-point interpolation formula:

$$u_{x:y} = u_{0:0} + \tfrac{1}{2}x(u_{1:0} - u_{-1:0}) + \tfrac{1}{2}y(u_{0:1} - u_{0:-1})$$

Simpson's rule: $\int_0^2 u_x\,dx = \tfrac{1}{3}(u_0 + 4u_1 + u_2)$

Simpson's extended rule:

$$\int_0^{2n} u_x\,dx = \tfrac{1}{3}(u_0 + 4u_1 + 2u_2 + 4u_3 + \ldots + u_{2n})$$

$\tfrac{3}{8}$ths rule: $\int_0^3 u_x\,dx = \tfrac{3}{8}(u_0 + 3u_1 + 3u_2 + u_3)$

Euler-Maclaurin expansion:

$$\int_0^n f(x)\,dx = \tfrac{1}{2}f(0) + f(1) + f(2) + \ldots + f(n-1) + \tfrac{1}{2}f(n) - \tfrac{1}{12}\{f'(n) - f'(0)\} + \tfrac{1}{720}\{f'''(n) - f'''(0)\} \ldots$$

$$[n]u_x = u_{x-\frac{n-1}{2}} + u_{x-\frac{n-3}{2}} + \ldots + u_{x+\frac{n-3}{2}} + u_{x+\frac{n-1}{2}}$$

Weddle's rule:

$$\int_0^6 u_x dx = \frac{3}{10}\left[(u_0 + u_6) + 5(u_1 + u_5) + (u_2 + u_4) + 6u_3\right]$$

Lubbock's formula:

$$u_0 + u_1 + u_2 + \ldots + u_{mn-1} = n(u_0 + u_n + u_{2n} + \ldots + u_{(m-1)n}) + \frac{n-1}{2}(u_{mn} - u_0) - \frac{n^2-1}{12n}(\Delta u_{mn} - \Delta u_0) + \frac{n^2-1}{24n}(\Delta^2 u_{mn} - \Delta^2 u_0) \ldots$$

Woolhouse's formula:

$$u_0 + u_1 + u_2 + \ldots + u_{mn} = n(u_0 + u_n + u_{2n} + \ldots + u_{mn}) - \frac{n-1}{2}(u_0 + u_{mn}) - \frac{n^2-1}{12}(u'_{mn} - u'_0) + \frac{n^4-1}{720}(u'''_{mn} - u'''_0) \ldots$$

2. STATISTICS

N.B. The notation in this section is consistent throughout but may differ from that in any particular textbook.

2.1. ABBREVIATIONS

PF. — Probability Function
PDF. — Probability Density Function
PGF. — Probability Generating Function
MGF. — Moment Generating Function
$\sim$ — has the distribution

2.2. WARING'S RESULT

The probability that exactly t of n events occur is given by

$$P[t] = \sum_{r=0}^{n-t} (-1)^r \binom{t+r}{r} S_{t+r}, \quad 0 \le t \le n.$$

where $S_0 = 1$, $S_1 = \sum_i P(E_i)$, $S_2 = \sum_{i<j} P(E_iE_j)$, $S_3 = \sum_{i<j<k} P(E_iE_jE_k)$. ...

2.3. DISCRETE DISTRIBUTIONS

Binomial — Parameters: n, a positive integer; $0 < p < 1$ with $q = 1-p$

PF. $P(X = x) = \binom{n}{x} p^x q^{n-x}$, $x = 0, 1, \ldots, n$.

PGF. $G(s) = (q + ps)^n$

MGF. $M(t) = (q + pe^t)^n$

$E(X) = np$, $\mathrm{Var}(X) = npq$

Poisson — Parameter: $\mu > 0$

PF. $P(X = x) = e^{-\mu} \dfrac{\mu^x}{x!}$, $x = 0, 1, 2, \ldots$

PGF. $G(s) = e^{\mu(s-1)}$

MGF. $M(t) = \exp\{\mu(e^t - 1)\}$

$E(X) = \mu$, $\mathrm{Var}(X) = \mu$.

Negative Binomial

There are two formulations, one typically for Subject 1 and one typically for Subject 5.

For subject 1:
Parameters: k, a positive integer; $0 < p < 1$ with $q = 1-p$

PF. $P(X = x) = \binom{x-1}{k-1} p^k q^{x-k}$, $x = k, k+1, k+2, \ldots$

PGF. $G(s) = \left(\frac{ps}{1-qs}\right)^k$

MGF. $M(t) = \left(\frac{pe^t}{1-qe^t}\right)^k$

$E(X) = \frac{k}{p}$, $\mathrm{Var}(X) = \frac{kq}{p^2}$

For subject 5:
Parameters: $k > 0$; $0 < p < 1$ with $q = 1-p$

PF. $P(X = x) = \binom{k+x-1}{x} p^k q^x$, $x = 0, 1, 2, \ldots$

PGF. $G(s) = \left(\frac{p}{1-qs}\right)^k$

MGF. $M(t) = \left(\frac{p}{1-qe^t}\right)^k$

$E(X) = \frac{kq}{p}$, $\mathrm{Var}(X) = \frac{kq}{p^2}$

The two formulations are of course connected, each differing from the other by a shift in location. In particular, if X_1 is as in the subject 1 formulation and X_2 as in the subject 5 formulation with an integer value for k, then $X_1 = X_2 + k$.

Geometric

Negative Binomial with $k = 1$

Normal $N(\mu,\sigma^2)$

Parameters: $-\infty < \mu < \infty$, $\sigma > 0$

PDF. $f(x) = \dfrac{1}{\sigma\sqrt{2\pi}} \exp\left[-\dfrac{1}{2}\left(\dfrac{x-\mu}{\sigma}\right)^2 \right]$, $-\infty < x < \infty$

MGF. $M(t) = \exp\left(\mu t + \dfrac{1}{2}\sigma^2 t^2 \right)$

$E(X) = \mu$, $\mathrm{Var}(X) = \sigma^2$

Gamma

Parameters: $\alpha > 0$, $\lambda > 0$

PDF. $f(x) = \dfrac{\lambda^\alpha x^{\alpha-1}}{\Gamma(\alpha)} e^{-\lambda x}$, $x > 0$

MGF. $M(t) = \left(1 - \dfrac{t}{\lambda} \right)^{-\alpha}$, $t < \lambda$

$E(X) = \alpha/\lambda$, $\mathrm{Var}(X) = \alpha/\lambda^2$

Exponential

Parameter: $\lambda > 0$

PDF. $f(x) = \lambda e^{-\lambda x}$, $x > 0$

MGF. $M(t) = \left(1 - \dfrac{t}{\lambda} \right)^{-1}$, $t < \lambda$

$E(X) = 1/\lambda$, $\mathrm{Var}(X) = 1/\lambda^2$

Chi-square

χ^2_n is Gamma with $\alpha = \dfrac{n}{2}$ and $\lambda = \dfrac{1}{2}$.

where n is a positive integer

Beta

Parameters: $\alpha > 0$, $\beta > 0$

PDF. $f(x) = \dfrac{\Gamma(\alpha+\beta)}{\Gamma(\alpha)\Gamma(\beta)} x^{\alpha-1}(1-x)^{\beta-1}$, $0 < x < 1$

MGF. —

$E(X) = \dfrac{\alpha}{\alpha+\beta}$, $\mathrm{Var}(X) = \dfrac{\alpha\beta}{(\alpha+\beta)^2(\alpha+\beta+1)}$

Lognormal Parameters: $-\infty < \mu < \infty, \sigma > 0$

PDF. $f(x) = \dfrac{\exp\left\{-\frac{1}{2}\left(\frac{\ln x - \mu}{\sigma}\right)^2\right\}}{x\sigma\sqrt{2\pi}}, x > 0$

MGF. —

$E(X) = \exp\left\{\mu + \frac{1}{2}\sigma^2\right\}$, $\mathrm{Var}(X) = \exp\{2\mu + \sigma^2\}.[\exp\{\sigma^2\} - 1]$

Pareto Parameters: $\alpha > 0, \lambda > 0$

PDF. $f(x) = \alpha\lambda^\alpha(\lambda + x)^{-\alpha-1}, x > 0$

MGF. —

$E(X) = \lambda/(\alpha - 1)$, $\mathrm{Var}(X) = \alpha\lambda^2/\{(\alpha-1)^2(\alpha-2)\}$

Generalised Pareto Parameters: $\alpha > 0, \lambda > 0, k > 0$

PDF. $f(x) = \dfrac{\Gamma(\alpha + k)\lambda^\alpha x^{k-1}}{\Gamma(\alpha)\Gamma(k)(\lambda + x)^{k+\alpha}}, x > 0$

MGF —

$E[X] = \lambda k/(\alpha - 1)$, $\mathrm{Var}[X] = \lambda^2 k(k + \alpha - 1)/\{(\alpha-1)^2(\alpha-2)\}$

Weibull Parameters: $c > 0, \gamma > 0$

PDF. $f(x) = c\gamma x^{\gamma-1}\exp\{-cx^\gamma\}, x > 0$

MGF. —

$E(X) = \Gamma\left(1 + \frac{1}{\gamma}\right)/c^{\frac{1}{\gamma}}$, $\mathrm{Var}(X) = \Gamma\left(1 + \frac{2}{\gamma}\right)/c^{\frac{2}{\gamma}} - \{\Gamma\left(1 + \frac{1}{\gamma}\right)/c^{\frac{1}{\gamma}}\}^2$

Burr Parameters: $\alpha > 0, \lambda > 0, \gamma > 0$

PDF. $f(x) = \alpha\gamma\lambda^\alpha x^{\gamma-1}(\lambda + x^\gamma)^{-\alpha-1}, x > 0$

MGF. —

$$E(X) = \lambda^{\frac{1}{\gamma}}\Gamma\left(\alpha - \frac{1}{\gamma}\right)\Gamma\left(1 + \frac{1}{\gamma}\right)/\Gamma(\alpha),$$

$$\mathrm{Var}(X) = \lambda^{\frac{2}{\gamma}}\Gamma\left(\alpha - \frac{2}{\gamma}\right)\Gamma\left(1 + \frac{2}{\gamma}\right)/\Gamma(\alpha) - \{\lambda^{\frac{1}{\gamma}}\Gamma\left(\alpha - \frac{1}{\gamma}\right)\Gamma\left(1 + \frac{1}{\gamma}\right)/\Gamma(\alpha)\}^2$$

2.5. COMPOUND DISTRIBUTIONS

Compound Poisson

$N \sim$ Poisson (λ), $\{X_i\}_{i=1}^{\infty}$ i.i.d.

$$Y = \sum_{i=1}^{N} X_i \; (= 0 \text{ if } N = 0)$$

MGF. of Y. $M_y(t) = \exp\{\lambda(M_x(t)-1)\}$

where $M_x(t)$ is the MGF of X_i

2.6. PARAMETRIC INFERENCE, NORMAL MODEL

The random sample $(x_1, x_2, \ldots, x_n)$ has mean $\bar{x}$ and variance

$$s^2 = \frac{\Sigma x^2 - (\Sigma x)^2/n}{n-1}$$

(a) For a single sample of size n under the normal model $X \sim N(\mu, \sigma^2)$

(i) $$\frac{\bar{X}-\mu}{\sqrt{\frac{S^2}{n}}} \sim t_{n-1}$$

(ii) $$\frac{(n-1)S^2}{\sigma^2} \sim \chi^2_{n-1}$$

(b) For two independent samples of sizes m and n under the normal models $X \sim N(\mu_X, \sigma_X^2)$, $Y \sim N(\mu_Y, \sigma_Y^2)$ respectively

(i) $$\frac{S_X^2}{S_Y^2} \Big/ \frac{\sigma_X^2}{\sigma_Y^2} \sim F_{m-1,n-1}$$

(ii) under the additional assumption $\sigma_X^2 = \sigma_Y^2$

$$\frac{(\bar{X}-\bar{Y})-(\mu_X-\mu_Y)}{\sqrt{\frac{\Sigma(X-\bar{X})^2 + \Sigma(Y-\bar{Y})^2}{m+n-2}\left(\frac{1}{m}+\frac{1}{n}\right)}} \sim t_{m+n-2}$$

2.7. NORMAL LINEAR REGRESSION MODEL $Y \sim N(\alpha + \beta x, \sigma^2)$

The usual estimates, based on bivariate data (y,x) of size n, are

$$\hat{\alpha} = \bar{y} - \hat{\beta}\bar{x}$$

$$\hat{\beta} = S_{xy}/S_{xx}$$

$$\hat{\sigma}^2 = \frac{1}{n-2}\sum(y-\hat{y})^2$$

$$= \frac{1}{n-2}(S_{yy} - S_{xy}^2/S_{xx})$$

where $S_{xx} = \sum(x-\bar{x})^2$, $S_{yy} = \sum(y-\bar{y})^2$, and $S_{xy} = \sum(x-\bar{x})(y-\bar{y})$

$$\frac{\hat{\beta}-\beta}{\text{s.e. }(\hat{\beta})} \sim t_{n-2} \text{ where s.e. } (\hat{\beta}) = (\hat{\sigma}^2/S_{xx})^{\frac{1}{2}}$$

2.8. ANALYSIS OF VARIANCE

(a) Single factor normal model $Y_{ij} \sim N(\mu + \tau_i, \sigma^2)$ with

$i = 1, 2, \ldots, k; j = 1, 2, \ldots, n_i; n = \Sigma n_i; \Sigma n_i \tau_i = 0$

Under the appropriate null hypothesis:

$$\frac{SS_B}{(k-1)} \Big/ \frac{SS_R}{(n-k)} \sim F_{k-1,n-k}$$

where

$$SS_T = \Sigma\Sigma(y_{ij} - \bar{y}..)^2 = \Sigma\Sigma y_{ij}^2 - \frac{1}{n}y_{\cdot\cdot}^2.$$

$$SS_B = \Sigma n_i(\bar{y}_{i\cdot} - \bar{y}..)^2 = \Sigma\frac{1}{n_i}y_{i\cdot}^2 - \frac{1}{n}y_{\cdot\cdot}^2.$$

$$SS_R = SS_T - SS_B$$

(b) Two factor no interaction normal model $Y_{ij} \sim N(\mu + \tau_i + \beta_j, \sigma^2)$ with

$i = 1, 2, \ldots, k; j = 1, 2, \ldots, b; \Sigma\tau_i = \Sigma\beta_j = 0$

Under the appropriate null hypotheses:

$$\frac{SS_A}{(k-1)} \Big/ \frac{SS_R}{(b-1)(k-1)} \sim F_{k-1,(b-1)(k-1)}$$

$$\frac{SS_B}{(b-1)} \Big/ \frac{SS_R}{(b-1)(k-1)} \sim F_{b-1,(b-1)(k-1)}$$

where

$$SS_T = \Sigma\Sigma(y_{ij} - \bar{y}..)^2 = \Sigma\Sigma y_{ij}^2 - \frac{1}{bk} y_{\cdot\cdot}^2.$$

$$SS_A = b\Sigma(\bar{y}_{i\cdot} - \bar{y}..)^2 = \frac{1}{b}\Sigma y_{i\cdot}^2 - \frac{1}{bk} y_{\cdot\cdot}^2.$$

$$SS_B = k\Sigma(\bar{y}_{\cdot j} - \bar{y}..)^2 = \frac{1}{k}\Sigma y_{\cdot j}^2 - \frac{1}{bk} y_{\cdot\cdot}^2.$$

$$SS_R = SS_T - SS_A - SS_B$$

2.9. NONPARAMETRIC INFERENCE

(a) Single sample, size n

Wilcoxon signed rank test
Under the appropriate null hypothesis:

$$E(W) = 0$$

$$\mathrm{Var}(W) = \frac{n(n+1)(2n+1)}{6}$$

(b) Two samples, sizes n and m

(i) The Run Test
Under the appropriate null hypothesis:

$$E(R) = \frac{2mn}{m+n} + 1$$

$$\mathrm{Var}(R) = \frac{2mn(2mn - m - n)}{(m+n)^2(m+n-1)}$$

(ii) Wilcoxon-Mann-Whitney Test
Under the appropriate null hypothesis:

$$E(W_Y) = \frac{m(m+n+1)}{2}$$

$$\text{Var}(W_Y) = \frac{mn(m+n+1)}{12}$$

2.10. BAYESIAN METHODS

$$f(\theta|\underline{x}) \propto f(\underline{x}|\theta)f(\theta)$$

For $\underline{x}$ a random sample of size n from $N(\mu,\sigma^2)$, σ^2 known, and a $N(\mu_0,\sigma_0^2)$ prior for μ, then

$$\mu|\underline{x} \sim N(\mu_*,\sigma_*^2)$$

$$\text{where } \mu_* = \frac{\frac{n\bar{x}}{\sigma^2} + \frac{\mu_0}{\sigma_0^2}}{\frac{n}{\sigma^2} + \frac{1}{\sigma_0^2}}, \quad \sigma_*^2 = \frac{1}{\frac{n}{\sigma^2} + \frac{1}{\sigma_0^2}}.$$

2.11. EMPIRICAL BAYES CREDIBILITY

Model 1. Data $\{\{X_{ij}\}_{i=1}^{N}\}_{j=1}^{n}$

X_{ij} represents the aggregate claims in the j-th year from the i-th risk.

$$\bar{X}_i = \sum_{j=1}^{n} X_{ij}/n$$

$$\bar{X} = \sum_{i=1}^{N} \bar{X}_i/N$$

Parameter estimation:

Quantity	Estimator
$E[m(\theta)]$	$\bar{X}$
$E[s^2(\theta)]$	$N^{-1}\sum_{i=1}^{N}(n-1)^{-1}\sum_{j=1}^{n}(X_{ij}-\bar{X}_i)^2$
$V[m(\theta)]$	$(N-1)^{-1}\sum_{i=1}^{N}(\bar{X}_i-\bar{X})^2 -$ $(Nn)^{-1}\sum_{i=1}^{N}(n-1)^{-1}\sum_{j=1}^{n}(X_{ij}-\bar{X}_i)^2$

Model 2. Data $\{\{Y_{ij}\}_{i=1}^{N}\}_{j=1}^{n}, \{\{P_{ij}\}_{i=1}^{N}\}_{j=1}^{n}$,

Y_{ij} represents the aggregate claims in the j-th year from the i-th risk; P_{ij} is the corresponding risk volume.

$$\bar{P}_i = \sum_{j=1}^{n} P_{ij} \qquad \bar{P} = \sum_{i=1}^{N} \bar{P}_i$$

$$P^* = (Nn-1)^{-1} \sum_{i=1}^{N} \bar{P}_i(1-\bar{P}_i/\bar{P})$$

$$X_{ij} = Y_{ij}/P_{ij} \qquad \bar{X}_i = \sum_{j=1}^{n} P_{ij}X_{ij}/\bar{P}_i \qquad \bar{X} = \sum_{i=1}^{N}\sum_{j=1}^{n} P_{ij}X_{ij}/\bar{P}$$

Parameter estimation:

Quantity	Estimator
$E[m(\theta)]$	$\bar{X}$
$E[s^2(\theta)]$	$N^{-1} \sum_{i=1}^{N} (n-1)^{-1} \sum_{j=1}^{n} P_{ij}(X_{ij}-\bar{X}_i)^2$
$V[m(\theta)]$	$P^{*-1}\left\{(Nn-1)^{-1} \sum_{i=1}^{N}\sum_{j=1}^{n} P_{ij}(X_{ij}-\bar{X})^2 - N^{-1} \sum_{i=1}^{N} (n-1)^{-1} \sum_{j=1}^{n} P_{ij}(X_{ij}-\bar{X}_i)^2\right\}$

3. COMPOUND INTEREST

$$a_{\overline{n}|} = \frac{1-v^n}{i} \qquad s_{\overline{n}|} = \frac{(1+i)^n-1}{i} \qquad \frac{1}{s_{\overline{n}|}} = \frac{1}{a_{\overline{n}|}} - i$$

$$(I\,a)_{\overline{n}|} = \frac{\ddot{a}_{\overline{n}|} - nv^n}{i} \qquad (D\,a)_{\overline{n}|} = \frac{n-a_{\overline{n}|}}{i}$$

$$\frac{1}{a^{i' \text{ and } i}_{\overline{n}|}} = \frac{1}{a^{i}_{\overline{n}|}} + (i'-i)$$

where $a^{i' \text{ and } i}_{\overline{n}|}$ is the value of an annuity certain of 1 p.a. payable in arrear for n years to yield remunerative rate i' after allowing for replacement of capital by accumulation at reproductive rate i.

Makeham's formula: $A = K + \frac{g}{i^{(p)}}(1-t)(C-K)$ where:

A is the present value of capital and net interest payments;
K is the present value of capital payments;
C is the total capital to be repaid (at redemption price);
g is the rate of interest expressed per unit of the redemption price;
t is the rate of tax on interest.

Value of annuity certain net of tax: $a^{i}_{\overline{n}|} - \frac{tg}{i-g}(a^{g}_{\overline{n}|} - a^{i}_{\overline{n}|})$ where:

g is the original rate of interest;
t is the rate of tax on interest.

Capital redemption policies: $A_{\overline{n}|} = 1 - d\,\ddot{a}_{\overline{n}|}$ $\qquad P_{\overline{n}|} = \frac{1}{\ddot{a}_{\overline{n}|}} - d$

$$ {}_tV_{\overline{n}|} = \frac{s_{\overline{t}|}}{s_{\overline{n}|}} \qquad {}_tW_{\overline{n}|} = \frac{a_{\overline{t}|}}{a_{\overline{n}|}} $$

4. LIFE AND OTHER CONTINGENCIES

$$ m_x \simeq \frac{d_x}{l_x - \frac{1}{2}d_x} = \frac{2q_x}{2-q_x} $$

$$ e_x \simeq \frac{\int_0^\infty l_{x+t}\,dt - \frac{1}{2}l_x}{l_x} \qquad \mathring{e}_x \simeq e_x + \tfrac{1}{2} - \tfrac{1}{12}\mu_x $$

Gompertz's law: $\mu_x = Bc^x$; ${}_tp_x = g^{c^x(c^t-1)}$

Makeham's law: $\mu_x = A + Bc^x$; ${}_tp_x = s^t g^{c^x(c^t-1)}$

where $B/\log_e c = -\log_e g$ and $A = -\log_e s$.

$$ A = 1 - d\,\ddot{a} \qquad \bar{A} = 1 - \delta\,\bar{a} $$

$$ P = \frac{1}{\ddot{a}} - d \qquad \bar{P} = \frac{1}{\bar{a}} - \delta $$

$$ \ddot{a}_x^{(m)} \simeq \ddot{a}_x - \frac{m-1}{2m} - \frac{m^2-1}{12m^2}(\mu_x + \delta) \qquad \ddot{a}_{x:\overline{n}|}^{(m)} \simeq \ddot{a}_{x:\overline{n}|} - \frac{m-1}{2m}\left(1 - \frac{D_{x+n}}{D_x}\right) $$

$$ P_{x:\overline{n}|}^{(m)} \simeq \frac{P_{x:\overline{n}|}}{1 - \frac{m-1}{2m}(P^1_{x:\overline{n}|} + d)} $$

$$ {}_tV_{x:\overline{n}|}^{(m)} = {}_tV_{x:\overline{n}|} + \frac{m-1}{2m} P_{x:\overline{n}|}^{(m)} \cdot {}_tV^1_{x:\overline{n}|} $$

PREFACE

Actuarial tables for the use of students preparing for and sitting examinations were first published by the Institute of Actuaries in 1912 under the title *A Short Collection of Actuarial Tables*. In 1952 the Institute of Actuaries and the Faculty of Actuaries jointly had published *Actuarial Tables for Examination Purposes* (Cambridge University Press), which contained certain additional and more up-to-date tables. It is now thought desirable to produce a third set of tables, again using more modern tables and adding certain others; these generally correspond with tables included in the textbook *Life Contingencies* by A. Neill (Heinemann, 1977).

The main changes from 1952 are: replacement of *English Life Table No. 10 —Males* by *English Life Table No. 12— Males*; replacement of Hypothetical Select Mortality by A1967–70; replacement of $a(m)$ and $a(f)$ annuitants' mortality by $a(55)$; use of a more modern basis in the Pension Fund Tables; extension of the range of rates of interest in the Compound Interest section; omission of Premium Conversion Tables and of a table of Office Premiums for Contingent Assurances; and inclusion of additional Statistical Tables, a statement of the International Actuarial Notation, and Tables of Logarithms, Antilogarithms and Reciprocals.

The following tables have been printed, by the authority and under the superintendence of the Institute of Actuaries and the Faculty of Actuaries, in order that candidates presenting themselves for examination may have a compact means of working out actuarial problems in their studies and in the examination room. The particular tables which are included have been selected as being, on the whole, the most suitable for this special purpose; but the Councils of the Institute and the Faculty desire it to be distinctly understood that they do not express any opinion whatever as to the circumstances in which any of the tables may be suitable for use in practice.

The thanks of the Councils are given to those firms of consulting actuaries who have supplied material for inclusion in these tables, particularly in sections V and VI.

The tables are published simultaneously in two versions: *Formulae and Tables for Actuarial Examinations* for the Institute of Actuaries and *Tables for Actuarial Examinations* for the Faculty of Actuaries. Apart from a list of formulae the tables are the same.

CONTENTS

TABULATED VALUES

SECTION I

COMPOUND INTEREST TABLES

VARIOUS RATES OF INTEREST

1 per cent

Constants		n	$(1+i)^n$	v^n	$s_{\overline{n}}$	$a_{\overline{n}}$	$(a_{\overline{n}})^{-1}$	n
Function	Value	1	1·010 00	·990 10	1·000 0	·990 1	1·010 000	1
		2	1·020 10	·980 30	2·010 0	1·970 4	0·507 512	2
i	·010 000	3	1·030 30	·970 59	3·030 1	2·941 0	·340 022	3
$i^{(2)}$	·009 975	4	1·040 60	·960 98	4·060 4	3·902 0	·256 281	4
$i^{(4)}$	·009 963	5	1·051 01	·951 47	5·101 0	4·853 4	·206 040	5
$i^{(12)}$	·009 954	6	1·061 52	·942 05	6·152 0	5·795 5	·172 548	6
δ	·009 950	7	1·072 14	·932 72	7·213 5	6·728 2	·148 628	7
		8	1·082 86	·923 48	8·285 7	7·651 7	·130 690	8
$(1+i)^{\frac{1}{4}}$	1·004 988	9	1·093 69	·914 34	9·368 5	8·566 0	·116 740	9
$(1+i)^{\frac{1}{2}}$	1·002 491	10	1·104 62	·905 29	10·462 2	9·471 3	·105 582	10
$(1+i)^{\frac{3}{4}}$	1·000 830	11	1·115 67	·896 32	11·566 8	10·367 6	·096 454	11
		12	1·126 83	·887 45	12·682 5	11·255 1	·088 849	12
v	·990 099	13	1·138 09	·878 66	13·809 3	12·133 7	·082 415	13
$v^{\frac{1}{4}}$	·997 516	14	1·149 47	·869 96	14·947 4	13·003 7	·076 901	14
$v^{\frac{1}{2}}$	·999 171	15	1·160 97	·861 35	16·096 9	13·865 1	·072 124	15
		16	1·172 58	·852 82	17·257 9	14·717 9	·067 945	16
d	·009 901	17	1·184 30	·844 38	18·430 4	15·562 3	·064 258	17
$d^{(2)}$	·009 926	18	1·196 15	·836 02	19·614 7	16·398 3	·060 982	18
$d^{(4)}$	·009 938	19	1·208 11	·827 74	20·810 9	17·226 0	·058 052	19
$d^{(12)}$	·009 946	20	1·220 19	·819 54	22·019 0	18·045 6	·055 415	20
		21	1·232 39	·811 43	23·239 2	18·857 0	·053 031	21
$i/i^{(2)}$	1·002 494	22	1·244 72	·803 40	24·471 6	19·660 4	·050 864	22
$i/i^{(4)}$	1·003 742	23	1·257 16	·795 44	25·716 3	20·455 8	·048 886	23
$i/i^{(12)}$	1·004 575	24	1·269 73	·787 57	26·973 5	21·243 4	·047 073	24
i/δ	1·004 992	25	1·282 43	·779 77	28·243 2	22·023 2	·045 407	25
$i/d^{(2)}$	1·007 494	26	1·295 26	·772 05	29·525 6	22·795 2	·043 869	26
$i/d^{(4)}$	1·006 242	27	1·308 21	·764 40	30·820 9	23·559 6	·042 446	27
$i/d^{(12)}$	1·005 408	28	1·321 29	·756 84	32·129 1	24·316 4	·041 124	28
		29	1·334 50	·749 34	33·450 4	25·065 8	·039 895	29
$\log_{10}(1+i)$	·004 321 4	30	1·347 85	·741 92	34·784 9	25·807 7	·038 748	30
		31	1·361 33	·734 58	36·132 7	26·542 3	·037 676	31
		32	1·374 94	·727 30	37·494 1	27·269 6	·036 671	32
		33	1·388 69	·720 10	38·869 0	27·989 7	·035 727	33
		34	1·402 58	·712 97	40·257 7	28·702 7	·034 840	34
		35	1·416 60	·705 91	41·660 3	29·408 6	·034 004	35
		36	1·430 77	·698 92	43·076 9	30·107 5	·033 214	36
		37	1·445 08	·692 00	44·507 6	30·799 5	·032 468	37
		38	1·459 53	·685 15	45·952 7	31·484 7	·031 761	38
		39	1·474 12	·678 37	47·412 3	32·163 0	·031 092	39
		40	1·488 86	·671 65	48·886 4	32·834 7	·030 456	40
		41	1·503 75	·665 00	50·375 2	33·499 7	·029 851	41
		42	1·518 79	·658 42	51·879 0	34·158 1	·029 276	42
		43	1·533 98	·651 90	53·397 8	34·810 0	·028 727	43
		44	1·549 32	·645 45	54·931 8	35·455 5	·028 204	44
		45	1·564 81	·639 05	56·481 1	36·094 5	·027 705	45
		46	1·580 46	·632 73	58·045 9	36·727 2	·027 228	46
		47	1·596 26	·626 46	59·626 3	37·353 7	·026 771	47
		48	1·612 23	·620 26	61·222 6	37·974 0	·026 334	48
		49	1·628 35	·614 12	62·834 8	38·588 1	·025 915	49
		50	1·644 63	·608 04	64·463 2	39·196 1	·025 513	50
		60	1·816 70	·550 45	81·669 7	44·955 0	·022 244	60
		70	2·006 76	·498 31	100·676 3	50·168 5	·019 933	70
		80	2·216 72	·451 12	121·671 5	54·888 2	·018 219	80
		90	2·448 63	·408 39	144·863 3	59·160 9	·016 903	90
		100	2·704 81	·369 71	170·481 4	63·028 9	·015 866	100

$1\frac{1}{2}$ per cent

n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
1	1·015 00	·985 22	1·000 0	0·985 2	1·015 000	1
2	1·030 23	·970 66	2·015 0	1·955 9	0·511 278	2
3	1·045 68	·956 32	3·045 2	2·912 2	·343 383	3
4	1·061 36	·942 18	4·090 9	3·854 4	·259 445	4
5	1·077 28	·928 26	5·152 3	4·782 6	·209 089	5
6	1·093 44	·914 54	6·229 6	5·697 2	·175 525	6
7	1·109 84	·901 03	7·323 0	6·598 2	·151 556	7
8	1·126 49	·887 71	8·432 8	7·485 9	·133 584	8
9	1·143 39	·874 59	9·559 3	8·360 5	·119 610	9
10	1·160 54	·861 67	10·702 7	9·222 2	·108 434	10
11	1·177 95	·848 93	11·863 3	10·071 1	·099 294	11
12	1·195 62	·836 39	13·041 2	10·907 5	·091 680	12
13	1·213 55	·824 03	14·236 8	11·731 5	·085 240	13
14	1·231 76	·811 85	15·450 4	12·543 4	·079 723	14
15	1·250 23	·799 85	16·682 1	13·343 2	·074 944	15
16	1·268 99	·788 03	17·932 4	14·131 3	·070 765	16
17	1·288 02	·776 39	19·201 4	14·907 6	·067 080	17
18	1·307 34	·764 91	20·489 4	15·672 6	·063 806	18
19	1·326 95	·753 61	21·796 7	16·426 2	·060 878	19
20	1·346 86	·742 47	23·123 7	17·168 6	·058 246	20
21	1·367 06	·731 50	24·470 5	17·900 1	·055 865	21
22	1·387 56	·720 69	25·837 6	18·620 8	·053 703	22
23	1·408 38	·710 04	27·225 1	19·330 9	·051 731	23
24	1·429 50	·699 54	28·633 5	20·030 4	·049 924	24
25	1·450 95	·689 21	30·063 0	20·719 6	·048 263	25
26	1·472 71	·679 02	31·514 0	21·398 6	·046 732	26
27	1·494 80	·668 99	32·986 7	22·067 6	·045 315	27
28	1·517 22	·659 10	34·481 5	22·726 7	·044 001	28
29	1·539 98	·649 36	35·998 7	23·376 1	·042 779	29
30	1·563 08	·639 76	37·538 7	24·015 8	·041 639	30
31	1·586 53	·630 31	39·101 8	24·646 1	·040 574	31
32	1·610 32	·620 99	40·688 3	25·267 1	·039 577	32
33	1·634 48	·611 82	42·298 6	25·879 0	·038 641	33
34	1·659 00	·602 77	43·933 1	26·481 7	·037 762	34
35	1·683 88	·593 87	45·592 1	27·075 6	·036 934	35
36	1·709 14	·585 09	47·276 0	27·660 7	·036 152	36
37	1·734 78	·576 44	48·985 1	28·237 1	·035 414	37
38	1·760 80	·567 92	50·719 9	28·805 1	·034 716	38
39	1·787 21	·559 53	52·480 7	29·364 6	·034 055	39
40	1·814 02	·551 26	54·267 9	29·915 8	·033 427	40
41	1·841 23	·543 12	56·081 9	30·459 0	·032 831	41
42	1·868 85	·535 09	57·923 1	30·994 1	·032 264	42
43	1·896 88	·527 18	59·792 0	31·521 2	·031 725	43
44	1·925 33	·519 39	61·688 9	32·040 6	·031 210	44
45	1·954 21	·511 71	63·614 2	32·552 3	·030 720	45
46	1·983 53	·504 15	65·568 4	33·056 5	·030 251	46
47	2·013 28	·496 70	67·551 9	33·553 2	·029 803	47
48	2·043 48	·489 36	69·565 2	34·042 6	·029 375	48
49	2·074 13	·482 13	71·608 7	34·524 7	·028 965	49
50	2·105 24	·475 00	73·682 8	34·999 7	·028 572	50
60	2·443 22	·409 30	96·214 7	39·380 3	·025 393	60
70	2·835 46	·352 68	122·363 8	43·154 9	·023 172	70
80	3·290 66	·303 89	152·710 9	46·407 3	·021 548	80
90	3·818 95	·261 85	187·929 9	49·209 9	·020 321	90
100	4·432 05	·225 63	228·803 0	51·624 7	·019 371	100

Constants

Function	Value
i	·015 000
$i^{(2)}$	·014 944
$i^{(4)}$	·014 916
$i^{(12)}$	·014 898
δ	·014 889
$(1+i)^{\frac{1}{2}}$	1·007 472
$(1+i)^{\frac{1}{4}}$	1·003 729
$(1+i)^{\frac{1}{12}}$	1·001 241
v	·985 222
$v^{\frac{1}{2}}$	·992 583
$v^{\frac{1}{4}}$	·996 285
$v^{\frac{1}{12}}$	·998 760
d	·014 778
$d^{(2)}$	·014 833
$d^{(4)}$	·014 861
$d^{(12)}$	·014 879
$i\,i^{(2)}$	1·003 736
$i\,i^{(4)}$	1·005 608
$i\,i^{(12)}$	1·006 857
$i\,\delta$	1·007 481
$i\,d^{(2)}$	1·011 236
$i\,d^{(4)}$	1·009 358
$i\,d^{(12)}$	1·008 107
$\log_{10}(1+i)$	·006 466 0

2 per cent

Constants	
Function	Value
i	·020 000
$i^{(2)}$	·019 901
$i^{(4)}$	·019 852
$i^{(12)}$	·019 819
δ	·019 803
$(1+i)^{\frac{1}{2}}$	1·009 950
$(1+i)^{\frac{1}{4}}$	1·004 963
$(1+i)^{\frac{1}{12}}$	1·001 652
v	·980 392
$v^{\frac{1}{2}}$	·990 148
$v^{\frac{1}{4}}$	·995 062
$v^{\frac{1}{12}}$	·998 351
d	·019 608
$d^{(2)}$	·019 705
$d^{(4)}$	·019 754
$d^{(12)}$	·019 786
$i/i^{(2)}$	1·004 975
$i/i^{(4)}$	1·007 469
$i/i^{(12)}$	1·009 134
i/δ	1·009 967
$i/d^{(2)}$	1·014 975
$i/d^{(4)}$	1·012 469
$i/d^{(12)}$	1·010 801
$\log_{10}(1+i)$	·008 600 2

n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
1	1·020 00	·980 39	1·000 0	0·980 4	1·020 000	1
2	1·040 40	·961 17	2·020 0	1·941 6	0·515 050	2
3	1·061 21	·942 32	3·060 4	2·883 9	·346 755	3
4	1·082 43	·923 85	4·121 6	3·807 7	·262 624	4
5	1·104 08	·905 73	5·204 0	4·713 5	·212 158	5
6	1·126 16	·887 97	6·308 1	5·601 4	·178 526	6
7	1·148 69	·870 56	7·434 3	6·472 0	·154 512	7
8	1·171 66	·853 49	8·583 0	7·325 5	·136 510	8
9	1·195 09	·836 76	9·754 6	8·162 2	·122 515	9
10	1·218 99	·820 35	10·949 7	8·982 6	·111 327	10
11	1·243 37	·804 26	12·168 7	9·786 8	·102 178	11
12	1·268 24	·788 49	13·412 1	10·575 3	·094 560	12
13	1·293 61	·773 03	14·680 3	11·348 4	·088 118	13
14	1·319 48	·757 88	15·973 9	12·106 2	·082 602	14
15	1·345 87	·743 01	17·293 4	12·849 3	·077 825	15
16	1·372 79	·728 45	18·639 3	13·577 7	·073 650	16
17	1·400 24	·714 16	20·012 1	14·291 9	·069 970	17
18	1·428 25	·700 16	21·412 3	14·992 0	·066 702	18
19	1·456 81	·686 43	22·840 6	15·678 5	·063 782	19
20	1·485 95	·672 97	24·297 4	16·351 4	·061 157	20
21	1·515 67	·659 78	25·783 3	17·011 2	·058 785	21
22	1·545 98	·646 84	27·299 0	17·658 0	·056 631	22
23	1·576 90	·634 16	28·845 0	18·292 2	·054 668	23
24	1·608 44	·621 72	30·421 9	18·913 9	·052 871	24
25	1·640 61	·609 53	32·030 3	19·523 5	·051 220	25
26	1·673 42	·597 58	33·670 9	20·121 0	·049 699	26
27	1·706 89	·585 86	35·344 3	20·706 9	·048 293	27
28	1·741 02	·574 37	37·051 2	21·281 3	·046 990	28
29	1·775 84	·563 11	38·792 2	21·844 4	·045 778	29
30	1·811 36	·552 07	40·568 1	22·396 5	·044 650	30
31	1·847 59	·541 25	42·379 4	22·937 7	·043 596	31
32	1·884 54	·530 63	44·227 0	23·468 3	·042 611	32
33	1·922 23	·520 23	46·111 6	23·988 6	·041 687	33
34	1·960 68	·510 03	48·033 8	24·498 6	·040 819	34
35	1·999 89	·500 03	49·994 5	24·998 6	·040 002	35
36	2·039 89	·490 22	51·994 4	25·488 8	·039 233	36
37	2·080 69	·480 61	54·034 3	25·969 5	·038 507	37
38	2·122 30	·471 19	56·114 9	26·440 6	·037 821	38
39	2·164 74	·461 95	58·237 2	26·902 6	·037 171	39
40	2·208 04	·452 89	60·402 0	27·355 5	·036 556	40
41	2·252 20	·444 01	62·610 0	27·799 5	·035 972	41
42	2·297 24	·435 30	64·862 2	28·234 8	·035 417	42
43	2·343 19	·426 77	67·159 5	28·661 6	·034 890	43
44	2·390 05	·418 40	69·502 7	29·080 0	·034 388	44
45	2·437 85	·410 20	71·892 7	29·490 2	·033 910	45
46	2·486 61	·402 15	74·330 6	29·892 3	·033 453	46
47	2·536 34	·394 27	76·817 2	30·286 6	·033 018	47
48	2·587 07	·386 54	79·353 5	30·673 1	·032 602	48
49	2·638 81	·378 96	81·940 6	31·052 1	·032 204	49
50	2·691 59	·371 53	84·579 4	31·423 6	·031 823	50
60	3·281 03	·304 78	114·051 5	34·760 9	·028 768	60
70	3·999 56	·250 03	149·977 9	37·498 6	·026 668	70
80	4·875 44	·205 11	193·772 0	39·744 5	·025 161	80
90	5·943 13	·168 26	247·156 7	41·586 9	·024 046	90
100	7·244 65	·138 03	312·232 3	43·098 4	·023 203	100

$2\frac{1}{2}$ per cent

n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
1	1·025 00	·975 61	1·000 0	0·975 6	1·025 000	1
2	1·050 63	·951 81	2·025 0	1·927 4	0·518 827	2
3	1·076 89	·928 60	3·075 6	2·856 0	·350 137	3
4	1·103 81	·905 95	4·152 5	3·762 0	·265 818	4
5	1·131 41	·883 85	5·256 3	4·645 8	·215 247	5
6	1·159 69	·862 30	6·387 7	5·508 1	·181 550	6
7	1·188 69	·841 27	7·547 4	6·349 4	·157 495	7
8	1·218 40	·820 75	8·736 1	7·170 1	·139 467	8
9	1·248 86	·800 73	9·954 5	7·970 9	·125 457	9
10	1·280 08	·781 20	11·203 4	8·752 1	·114 259	10
11	1·312 09	·762 14	12·483 5	9·514 2	·105 106	11
12	1·344 89	·743 56	13·795 6	10·257 8	·097 487	12
13	1·378 51	·725 42	15·140 4	10·983 2	·091 048	13
14	1·412 97	·707 73	16·519 0	11·690 9	·085 537	14
15	1·448 30	·690 47	17·931 9	12·381 4	·080 766	15
16	1·484 51	·673 62	19·380 2	13·055 0	·076 599	16
17	1·521 62	·657 20	20·864 7	13·712 2	·072 928	17
18	1·559 66	·641 17	22·386 3	14·353 4	·069 670	18
19	1·598 65	·625 53	23·946 0	14·978 9	·066 761	19
20	1·638 62	·610 27	25·544 7	15·589 2	·064 147	20
21	1·679 58	·595 39	27·183 3	16·184 5	·061 787	21
22	1·721 57	·580 86	28·862 9	16·765 4	·059 647	22
23	1·764 61	·566 70	30·584 4	17·332 1	·057 696	23
24	1·808 73	·552 88	32·349 0	17·885 0	·055 913	24
25	1·853 94	·539 39	34·157 8	18·424 4	·054 276	25
26	1·900 29	·526 23	36·011 7	18·950 6	·052 769	26
27	1·947 80	·513 40	37·912 0	19·464 0	·051 377	27
28	1·996 50	·500 88	39·859 8	19·964 9	·050 088	28
29	2·046 41	·488 66	41·856 3	20·453 5	·048 891	29
30	2·097 57	·476 74	43·902 7	20·930 3	·047 778	30
31	2·150 01	·465 11	46·000 3	21·395 4	·046 739	31
32	2·203 76	·453 77	48·150 3	21·849 2	·045 768	32
33	2·258 85	·442 70	50·354 0	22·291 9	·044 859	33
34	2·315 32	·431 91	52·612 9	22·723 8	·044 007	34
35	2·373 21	·421 37	54·928 2	23·145 2	·043 206	35
36	2·432 54	·411 09	57·301 4	23·556 3	·042 452	36
37	2·493 35	·401 07	59·733 9	23·957 3	·041 741	37
38	2·555 68	·391 28	62·227 3	24·348 6	·041 070	38
39	2·619 57	·381 74	64·783 0	24·730 3	·040 436	39
40	2·685 06	·372 43	67·402 6	25·102 8	·039 836	40
41	2·752 19	·363 35	70·087 6	25·466 1	·039 268	41
42	2·821 00	·354 48	72·839 8	25·820 6	·038 729	42
43	2·891 52	·345 84	75·660 8	26·166 4	·038 217	43
44	2·963 81	·337 40	78·552 3	26·503 8	·037 730	44
45	3·037 90	·329 17	81·516 1	26·833 0	·037 268	45
46	3·113 85	·321 15	84·554 0	27·154 2	·036 827	46
47	3·191 70	·313 31	87·667 9	27·467 5	·036 407	47
48	3·271 49	·305 67	90·859 6	27·773 2	·036 006	48
49	3·353 28	·298 22	94·131 1	28·071 4	·035 623	49
50	3·437 11	·290 94	97·484 3	28·362 3	·035 258	50
60	4·399 79	·227 28	135·991 6	30·908 7	·032 353	60
70	5·632 10	·177 55	185·284 1	32·897 9	·030 397	70
80	7·209 57	·138 70	248·382 7	34·451 8	·029 026	80
90	9·228 86	·108 36	329·154 3	35·665 8	·028 038	90
100	11·813 72	·084 65	432·548 7	36·614 1	·027 312	100

Constants

Function	Value
i	·025 000
$i^{(2)}$	·024 846
$i^{(4)}$	·024 769
$i^{(12)}$	·024 718
δ	·024 693
$(1+i)^{\frac{1}{2}}$	1·012 423
$(1+i)^{\frac{1}{4}}$	1·006 192
$(1+i)^{\frac{1}{12}}$	1·002 060
v	·975 610
$v^{\frac{1}{2}}$	·987 730
$v^{\frac{1}{4}}$	·993 846
$v^{\frac{1}{12}}$	·997 944
d	·024 390
$d^{(2)}$	·024 541
$d^{(4)}$	·024 617
$d^{(12)}$	·024 667
$i\,i^{(2)}$	1·006 211
$i\,i^{(4)}$	1·009 327
$i\,i^{(12)}$	1·011 407
$i\,\delta$	1·012 449
$i\,d^{(2)}$	1·018 711
$i\,d^{(4)}$	1·015 577
$i\,d^{(12)}$	1·013 491
$\log_{10}(1+i)$	·010 723 9

3 per cent

Constants		n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
Function	Value	1	1·030 00	·970 87	1·000 0	0·970 9	1·030 000	1
		2	1·060 90	·942 60	2·030 0	1·913 5	0·522 611	2
i	·030 000	3	1·092 73	·915 14	3·090 9	2·828 6	·353 530	3
$i^{(2)}$	·029 778	4	1·125 51	·888 49	4·183 6	3·717 1	·269 027	4
$i^{(4)}$	·029 668	5	1·159 27	·862 61	5·309 1	4·579 7	·218 355	5
$i^{(12)}$	·029 595	6	1·194 05	·837 48	6·468 4	5·417 2	·184 598	6
δ	·029 559	7	1·229 87	·813 09	7·662 5	6·230 3	·160 506	7
		8	1·266 77	·789 41	8·892 3	7·019 7	·142 456	8
$(1+i)^{\frac{1}{4}}$	1·014 889	9	1·304 77	·766 42	10·159 1	7·786 1	·128 434	9
$(1+i)^{\frac{1}{2}}$	1·007 417	10	1·343 92	·744 09	11·463 9	8·530 2	·117 231	10
$(1+i)^{\frac{3}{4}}$	1·002 466	11	1·384 23	·722 42	12·807 8	9·252 6	·108 077	11
v	·970 874	12	1·425 76	·701 38	14·192 0	9·954 0	·100 462	12
$v^{\frac{1}{4}}$	·985 329	13	1·468 53	·680 95	15·617 8	10·635 0	·094 030	13
$v^{\frac{1}{2}}$	·992 638	14	1·512 59	·661 12	17·086 3	11·296 1	·088 526	14
$v^{\frac{3}{4}}$	·997 540	15	1·557 97	·641 86	18·598 9	11·937 9	·083 767	15
d	·029 126	16	1·604 71	·623 17	20·156 9	12·561 1	·079 611	16
$d^{(2)}$	·029 341	17	1·652 85	·605 02	21·761 6	13·166 1	·075 953	17
$d^{(4)}$	·029 450	18	1·702 43	·587 39	23·414 4	13·753 5	·072 709	18
$d^{(12)}$	·029 522	19	1·753 51	·570 29	25·116 9	14·323 8	·069 814	19
		20	1·806 11	·553 68	26·870 4	14·877 5	·067 216	20
$i/i^{(2)}$	1·007 445	21	1·860 29	·537 55	28·676 5	15·415 0	·064 872	21
$i/i^{(4)}$	1·011 181	22	1·916 10	·521 89	30·536 8	15·936 9	·062 747	22
$i/i^{(12)}$	1·013 677	23	1·973 59	·506 69	32·452 9	16·443 6	·060 814	23
i/δ	1·014 926	24	2·032 79	·491 93	34·426 5	16·935 5	·059 047	24
		25	2·093 78	·477 61	36·459 3	17·413 1	·057 428	25
$i/d^{(2)}$	1·022 445	26	2·156 59	·463 69	38·553 0	17·876 8	·055 938	26
$i/d^{(4)}$	1·018 681	27	2·221 29	·450 19	40·709 6	18·327 0	·054 564	27
$i/d^{(12)}$	1·016 177	28	2·287 93	·437 08	42·930 9	18·764 1	·053 293	28
		29	2·356 57	·424 35	45·218 9	19·188 5	·052 115	29
$\log_{10}(1+i)$	·012 837 2	30	2·427 26	·411 99	47·575 4	19·600 4	·051 019	30
		31	2·500 08	·399 99	50·002 7	20·000 4	·049 999	31
		32	2·575 08	·388 34	52·502 8	20·388 8	·049 047	32
		33	2·652 34	·377 03	55·077 8	20·765 8	·048 156	33
		34	2·731 91	·366 04	57·730 2	21·131 8	·047 322	34
		35	2·813 86	·355 38	60·462 1	21·487 2	·046 539	35
		36	2·898 28	·345 03	63·275 9	21·832 3	·045 804	36
		37	2·985 23	·334 98	66·174 2	22·167 2	·045 112	37
		38	3·074 78	·325 23	69·159 4	22·492 5	·044 459	38
		39	3·167 03	·315 75	72·234 2	22·808 2	·043 844	39
		40	3·262 04	·306 56	75·401 3	23·114 8	·043 262	40
		41	3·359 90	·297 63	78·663 3	23·412 4	·042 712	41
		42	3·460 70	·288 96	82·023 2	23·701 4	·042 192	42
		43	3·564 52	·280 54	85·483 9	23·981 9	·041 698	43
		44	3·671 45	·272 37	89·048 4	24·254 3	·041 230	44
		45	3·781 60	·264 44	92·719 9	24·518 7	·040 785	45
		46	3·895 04	·256 74	96·501 5	24·775 4	·040 363	46
		47	4·011 90	·249 26	100·396 5	25·024 7	·039 961	47
		48	4·132 25	·242 00	104·408 4	25·266 7	·039 578	48
		49	4·256 22	·234 95	108·540 6	25·501 7	·039 213	49
		50	4·383 91	·228 11	112·796 9	25·729 8	·038 865	50
		60	5·891 60	·169 73	163·053 4	27·675 6	·036 133	60
		70	7·917 82	·126 30	230·594 1	29·123 4	·034 337	70
		80	10·640 89	·093 98	321·363 0	30·200 8	·033 112	80
		90	14·300 47	·069 93	443·348 9	31·002 4	·032 256	90
		100	19·218 63	·052 03	607·287 7	31·598 9	·031 647	100

$3\frac{1}{2}$ per cent

n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
1	1·035 00	·966 18	1·000 0	0·966 2	1·035 000	1
2	1·071 23	·933 51	2·035 0	1·899 7	0·526 400	2
3	1·108 72	·901 94	3·106 2	2·801 6	·356 934	3
4	1·147 52	·871 44	4·214 9	3·673 1	·272 251	4
5	1·187 69	·841 97	5·362 5	4·515 1	·221 481	5
6	1·229 26	·813 50	6·550 2	5·328 6	·187 668	6
7	1·272 28	·785 99	7·779 4	6·114 5	·163 544	7
8	1·316 81	·759 41	9·051 7	6·874 0	·145 477	8
9	1·362 90	·733 73	10·368 5	7·607 7	·131 446	9
10	1·410 60	·708 92	11·731 4	8·316 6	·120 241	10
11	1·459 97	·684 95	13·142 0	9·001 6	·111 092	11
12	1·511 07	·661 78	14·602 0	9·663 3	·103 484	12
13	1·563 96	·639 40	16·113 0	10·302 7	·097 062	13
14	1·618 69	·617 78	17·677 0	10·920 5	·091 571	14
15	1·675 35	·596 89	19·295 7	11·517 4	·086 825	15
16	1·733 99	·576 71	20·971 0	12·094 1	·082 685	16
17	1·794 68	·557 20	22·705 0	12·651 3	·079 043	17
18	1·857 49	·538 36	24·499 7	13·189 7	·075 817	18
19	1·922 50	·520 16	26·357 2	13·709 8	·072 940	19
20	1·989 79	·502 57	28·279 7	14·212 4	·070 361	20
21	2·059 43	·485 57	30·269 5	14·698 0	·068 037	21
22	2·131 51	·469 15	32·328 9	15·167 1	·065 932	22
23	2·206 11	·453 29	34·460 4	15·620 4	·064 019	23
24	2·283 33	·437 96	36·666 5	16·058 4	·062 273	24
25	2·363 24	·423 15	38·949 9	16·481 5	·060 674	25
26	2·445 96	·408 84	41·313 1	16·890 4	·059 205	26
27	2·531 57	·395 01	43·759 1	17·285 4	·057 852	27
28	2·620 17	·381 65	46·290 6	17·667 0	·056 603	28
29	2·711 88	·368 75	48·910 8	18·035 8	·055 445	29
30	2·806 79	·356 28	51·622 7	18·392 0	·054 371	30
31	2·905 03	·344 23	54·429 5	18·736 3	·053 372	31
32	3·006 71	·332 59	57·334 5	19·068 9	·052 442	32
33	3·111 94	·321 34	60·341 2	19·390 2	·051 572	33
34	3·220 86	·310 48	63·453 2	19·700 7	·050 760	34
35	3·333 59	·299 98	66·674 0	20·000 7	·049 998	35
36	3·450 27	·289 83	70·007 6	20·290 5	·049 284	36
37	3·571 03	·280 03	73·457 9	20·570 5	·048 613	37
38	3·696 01	·270 56	77·028 9	20·841 1	·047 982	38
39	3·825 37	·261 41	80·724 9	21·102 5	·047 388	39
40	3·959 26	·252 57	84·550 3	21·355 1	·046 827	40
41	4·097 83	·244 03	88·509 5	21·599 1	·046 298	41
42	4·241 26	·235 78	92·607 4	21·834 9	·045 798	42
43	4·389 70	·227 81	96·848 6	22·062 7	·045 325	43
44	4·543 34	·220 10	101·238 3	22·282 8	·044 878	44
45	4·702 36	·212 66	105·781 7	22·495 5	·044 453	45
46	4·866 94	·205 47	110·484 0	22·700 9	·044 051	46
47	5·037 28	·198 52	115·351 0	22·899 4	·043 669	47
48	5·213 59	·191 81	120·388 3	23·091 2	·043 306	48
49	5·396 06	·185 32	125·601 8	23·276 6	·042 962	49
50	5·584 93	·179 05	130·997 9	23·455 6	·042 634	50
60	7·878 09	·126 93	196·516 9	24·944 7	·040 089	60
70	11·112 83	·089 99	288·937 9	26·000 4	·038 461	70
80	15·675 74	·063 79	419·306 8	26·748 8	·037 385	80
90	22·112 18	·045 22	603·205 0	27·279 3	·036 658	90
100	31·191 41	·032 06	862·611 7	27·655 4	·036 159	100

Constants

Function	Value
i	·035 000
$i^{(2)}$	·034 699
$i^{(4)}$	·034 550
$i^{(12)}$	·034 451
δ	·034 401
$(1+i)^{\frac{1}{2}}$	1·017 349
$(1+i)^{\frac{1}{4}}$	1·008 637
$(1+i)^{\frac{1}{12}}$	1·002 871
v	·966 184
$v^{\frac{1}{2}}$	·982 946
$v^{\frac{1}{4}}$	·991 437
$v^{\frac{1}{12}}$	·997 137
d	·033 816
$d^{(2)}$	·034 107
$d^{(4)}$	·034 254
$d^{(12)}$	·034 352
$i/i^{(2)}$	1·008 675
$i/i^{(4)}$	1·013 031
$i/i^{(12)}$	1·015 942
i/δ	1·017 400
$i/d^{(2)}$	1·026 175
$i/d^{(4)}$	1·021 781
$i/d^{(12)}$	1·018 859
$\log_{10}(1+i)$	·014 940 3

4 per cent

Constants	
Function	Value
i	·040 000
$i^{(2)}$	·039 608
$i^{(4)}$	·039 414
$i^{(12)}$	·039 285
δ	·039 221
$(1+i)^{\frac{1}{2}}$	1·019 804
$(1+i)^{\frac{1}{4}}$	1·009 853
$(1+i)^{\frac{1}{12}}$	1·003 274
v	·961 538
$v^{\frac{1}{2}}$	·980 581
$v^{\frac{1}{4}}$	·990 243
$v^{\frac{1}{12}}$	·996 737
d	·038 462
$d^{(2)}$	·038 839
$d^{(4)}$	·039 029
$d^{(12)}$	·039 157
$i/i^{(2)}$	1·009 902
$i/i^{(4)}$	1·014 877
$i/i^{(12)}$	1·018 204
i/δ	1·019 869
$i/d^{(2)}$	1·029 902
$i/d^{(4)}$	1·024 877
$i/d^{(12)}$	1·021 537
$\log_{10}(1+i)$	·017 033 3

n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
1	1·040 00	·961 54	1·000 0	0·961 5	1·040 000	1
2	1·081 60	·924 56	2·040 0	1·886 1	0·530 196	2
3	1·124 86	·889 00	3·121 6	2·775 1	·360 349	3
4	1·169 86	·854 80	4·246 5	3·629 9	·275 490	4
5	1·216 65	·821 93	5·416 3	4·451 8	·224 627	5
6	1·265 32	·790 31	6·633 0	5·242 1	·190 762	6
7	1·315 93	·759 92	7·898 3	6·002 1	·166 610	7
8	1·368 57	·730 69	9·214 2	6·732 7	·148 528	8
9	1·423 31	·702 59	10·582 8	7·435 3	·134 493	9
10	1·480 24	·675 56	12·006 1	8·110 9	·123 291	10
11	1·539 45	·649 58	13·486 4	8·760 5	·114 149	11
12	1·601 03	·624 60	15·025 8	9·385 1	·106 552	12
13	1·665 07	·600 57	16·626 8	9·985 6	·100 144	13
14	1·731 68	·577 48	18·291 9	10·563 1	·094 669	14
15	1·800 94	·555 26	20·023 6	11·118 4	·089 941	15
16	1·872 98	·533 91	21·824 5	11·652 3	·085 820	16
17	1·947 90	·513 37	23·697 5	12·165 7	·082 199	17
18	2·025 82	·493 63	25·645 4	12·659 3	·078 993	18
19	2·106 85	·474 64	27·671 2	13·133 9	·076 139	19
20	2·191 12	·456 39	29·778 1	13·590 3	·073 582	20
21	2·278 77	·438 83	31·969 2	14·029 2	·071 280	21
22	2·369 92	·421 96	34·248 0	14·451 1	·069 199	22
23	2·464 72	·405 73	36·617 9	14·856 8	·067 309	23
24	2·563 30	·390 12	39·082 6	15·247 0	·065 587	24
25	2·665 84	·375 12	41·645 9	15·622 1	·064 012	25
26	2·772 47	·360 69	44·311 7	15·982 8	·062 567	26
27	2·883 37	·346 82	47·084 2	16·329 6	·061 239	27
28	2·998 70	·333 48	49·967 6	16·663 1	·060 013	28
29	3·118 65	·320 65	52·966 3	16·983 7	·058 880	29
30	3·243 40	·308 32	56·084 9	17·292 0	·057 830	30
31	3·373 13	·296 46	59·328 3	17·588 5	·056 855	31
32	3·508 06	·285 06	62·701 5	17·873 6	·055 949	32
33	3·648 38	·274 09	66·209 5	18·147 6	·055 104	33
34	3·794 32	·263 55	69·857 9	18·411 2	·054 315	34
35	3·946 09	·253 42	73·652 2	18·664 6	·053 577	35
36	4·103 93	·243 67	77·598 3	18·908 3	·052 887	36
37	4·268 09	·234 30	81·702 2	19·142 6	·052 240	37
38	4·438 81	·225 29	85·970 3	19·367 9	·051 632	38
39	4·616 37	·216 62	90·409 1	19·584 5	·051 061	39
40	4·801 02	·208 29	95·025 5	19·792 8	·050 523	40
41	4·993 06	·200 28	99·826 5	19·993 1	·050 017	41
42	5·192 78	·192 57	104·819 6	20·185 6	·049 540	42
43	5·400 50	·185 17	110·012 4	20·370 8	·049 090	43
44	5·616 52	·178 05	115·412 9	20·548 8	·048 665	44
45	5·841 18	·171 20	121·029 4	20·720 0	·048 262	45
46	6·074 82	·164 61	126·870 6	20·884 7	·047 882	46
47	6·317 82	·158 28	132·945 4	21·042 9	·047 522	47
48	6·570 53	·152 19	139·263 2	21·195 1	·047 181	48
49	6·833 35	·146 34	145·833 7	21·341 5	·046 857	49
50	7·106 68	·140 71	152·667 1	21·482 2	·046 550	50
60	10·519 63	·095 06	237·990 7	22·623 5	·044 202	60
70	15·571 62	·064 22	364·290 5	23·394 5	·042 745	70
80	23·049 80	·043 38	551·245 0	23·915 4	·041 814	80
90	34·119 33	·029 31	827·983 3	24·267 3	·041 208	90
100	50·504 95	·019 80	1 237·623 7	24·505 0	·040 808	100

$4\frac{1}{2}$ per cent

n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
1	1·045 00	·956 94	1·000 0	0·956 9	1·045 000	1
2	1·092 03	·915 73	2·045 0	1·872 7	0·533 998	2
3	1·141 17	·876 30	3·137 0	2·749 0	·363 773	3
4	1·192 52	·838 56	4·278 2	3·587 5	·278 744	4
5	1·246 18	·802 45	5·470 7	4·390 0	·227 792	5
6	1·302 26	·767 90	6·716 9	5·157 9	·193 878	6
7	1·360 86	·734 83	8·019 2	5·892 7	·169 701	7
8	1·422 10	·703 19	9·380 0	6·595 9	·151 610	8
9	1·486 10	·672 90	10·802 1	7·268 8	·137 574	9
10	1·552 97	·643 93	12·288 2	7·912 7	·126 379	10
11	1·622 85	·616 20	13·841 2	8·528 9	·117 248	11
12	1·695 88	·589 66	15·464 0	9·118 6	·109 666	12
13	1·772 20	·564 27	17·159 9	9·682 9	·103 275	13
14	1·851 94	·539 97	18·932 1	10·222 8	·097 820	14
15	1·935 28	·516 72	20·784 1	10·739 5	·093 114	15
16	2·022 37	·494 47	22·719 3	11·234 0	·089 015	16
17	2·113 38	·473 18	24·741 7	11·707 2	·085 418	17
18	2·208 48	·452 80	26·855 1	12·160 0	·082 237	18
19	2·307 86	·433 30	29·063 6	12·593 3	·079 407	19
20	2·411 71	·414 64	31·371 4	13·007 9	·076 876	20
21	2·520 24	·396 79	33·783 1	13·404 7	·074 601	21
22	2·633 65	·379 70	36·303 4	13·784 4	·072 546	22
23	2·752 17	·363 35	38·937 0	14·147 8	·070 682	23
24	2·876 01	·347 70	41·689 2	14·495 5	·068 987	24
25	3·005 43	·332 73	44·565 2	14·828 2	·067 439	25
26	3·140 68	·318 40	47·570 6	15·146 6	·066 021	26
27	3·282 01	·304 69	50·711 3	15·451 3	·064 719	27
28	3·429 70	·291 57	53·993 3	15·742 9	·063 521	28
29	3·584 04	·279 02	57·423 0	16·021 9	·062 415	29
30	3·745 32	·267 00	61·007 1	16·288 9	·061 392	30
31	3·913 86	·255 50	64·752 4	16·544 4	·060 443	31
32	4·089 98	·244 50	68·666 2	16·788 9	·059 563	32
33	4·274 03	·233 97	72·756 2	17·022 9	·058 745	33
34	4·466 36	·223 90	77·030 3	17·246 8	·057 982	34
35	4·667 35	·214 25	81·496 6	17·461 0	·057 270	35
36	4·877 38	·205 03	86·164 0	17·666 0	·056 606	36
37	5·096 86	·196 20	91·041 3	17·862 2	·055 984	37
38	5·326 22	·187 75	96·138 2	18·050 0	·055 402	38
39	5·565 90	·179 67	101·464 4	18·229 7	·054 856	39
40	5·816 36	·171 93	107·030 3	18·401 6	·054 343	40
41	6·078 10	·164 53	112·846 7	18·566 1	·053 862	41
42	6·351 62	·157 44	118·924 8	18·723 5	·053 409	42
43	6·637 44	·150 66	125·276 4	18·874 2	·052 982	43
44	6·936 12	·144 17	131·913 8	19·018 4	·052 581	44
45	7·248 25	·137 96	138·850 0	19·156 3	·052 202	45
46	7·574 42	·132 02	146·098 2	19·288 4	·051 845	46
47	7·915 27	·126 34	153·672 6	19·414 7	·051 507	47
48	8·271 46	·120 90	161·587 9	19·535 6	·051 189	48
49	8·643 67	·115 69	169·859 4	19·651 3	·050 887	49
50	9·032 64	·110 71	178·503 0	19·762 0	·050 602	50
60	14·027 41	·071 29	289·498 0	20·638 0	·048 454	60
70	21·784 14	·045 90	461·869 7	21·202 1	·047 165	70
80	33·830 10	·029 56	729·557 7	21·565 3	·046 371	80
90	52·537 11	·019 03	1 145·269 0	21·799 2	·045 873	90
100	81·588 52	·012 26	1 790·856 0	21·949 9	·045 558	100

Constants

Function	Value
i	·045 000
$i^{(2)}$	·044 505
$i^{(4)}$	·044 260
$i^{(12)}$	·044 098
δ	·044 017
$(1+i)^{\frac{1}{2}}$	1·022 252
$(1+i)^{\frac{1}{4}}$	1·011 065
$(1+i)^{\frac{1}{12}}$	1·003 675
v	·956 938
$v^{\frac{1}{2}}$	·978 232
$v^{\frac{1}{4}}$	·989 056
$v^{\frac{1}{12}}$	·996 339
d	·043 062
$d^{(2)}$	·043 536
$d^{(4)}$	·043 776
$d^{(12)}$	·043 936
$i/i^{(2)}$	1·011 126
$i/i^{(4)}$	1·016 720
$i/i^{(12)}$	1·020 461
i/δ	1·022 335
$i/d^{(2)}$	1·033 626
$i/d^{(4)}$	1·027 970
$i/d^{(12)}$	1·024 211
$\log_{10}(1+i)$	·019 116 3

5 per cent

Constants		n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
Function	Value	1	1·050 00	·952 38	1·000 0	0·952 4	1·050 000	1
		2	1·102 50	·907 03	2·050 0	1·859 4	0·537 805	2
i	·050 000	3	1·157 63	·863 84	3·152 5	2·723 2	·367 209	3
$i^{(2)}$	·049 390	4	1·215 51	·822 70	4·310 1	3·546 0	·282 012	4
$i^{(4)}$	·049 089	5	1·276 28	·783 53	5·525 6	4·329 5	·230 975	5
$i^{(12)}$	·048 889							
δ	·048 790	6	1·340 10	·746 22	6·801 9	5·075 7	·197 017	6
		7	1·407 10	·710 68	8·142 0	5·786 4	·172 820	7
$(1+i)^{\frac{1}{2}}$	1·024 695	8	1·477 46	·676 84	9·549 1	6·463 2	·154 722	8
$(1+i)^{\frac{1}{4}}$	1·012 272	9	1·551 33	·644 61	11·026 6	7·107 8	·140 690	9
$(1+i)^{\frac{1}{12}}$	1·004 074	10	1·628 89	·613 91	12·577 9	7·721 7	·129 505	10
		11	1·710 34	·584 68	14·206 8	8·306 4	·120 389	11
v	·952 381	12	1·795 86	·556 84	15·917 1	8·863 3	·112 825	12
$v^{\frac{1}{2}}$	·975 900	13	1·885 65	·530 32	17·713 0	9·393 6	·106 456	13
$v^{\frac{1}{4}}$	·987 877	14	1·979 93	·505 07	19·598 6	9·898 6	·101 024	14
$v^{\frac{1}{12}}$	·995 942	15	2·078 93	·481 02	21·578 6	10·379 7	·096 342	15
		16	2·182 87	·458 11	23·657 5	10·837 8	·092 270	16
d	·047 619	17	2·292 02	·436 30	25·840 4	11·274 1	·088 699	17
$d^{(2)}$	·048 200	18	2·406 62	·415 52	28·132 4	11·689 6	·085 546	18
$d^{(4)}$	·048 494	19	2·526 95	·395 73	30·539 0	12·085 3	·082 745	19
$d^{(12)}$	·048 691	20	2·653 30	·376 89	33·066 0	12·462 2	·080 243	20
$i/i^{(2)}$	1·012 348	21	2·785 96	·358 94	35·719 3	12·821 2	·077 996	21
$i/i^{(4)}$	1·018 559	22	2·925 26	·341 85	38·505 2	13·163 0	·075 971	22
$i/i^{(12)}$	1·022 715	23	3·071 52	·325 57	41·430 5	13·488 6	·074 137	23
i/δ	1·024 797	24	3·225 10	·310 07	44·502 0	13·798 6	·072 471	24
		25	3·386 35	·295 30	47·727 1	14·093 9	·070 952	25
$i/d^{(2)}$	1·037 348	26	3·555 67	·281 24	51·113 5	14·375 2	·069 564	26
$i/d^{(4)}$	1·031 059	27	3·733 46	·267 85	54·669 1	14·643 0	·068 292	27
$i/d^{(12)}$	1·026 881	28	3·920 13	·255 09	58·402 6	14·898 1	·067 123	28
		29	4·116 14	·242 95	62·322 7	15·141 1	·066 046	29
$\log_{10}(1+i)$	·021 189 3	30	4·321 94	·231 38	66·438 8	15·372 5	·065 051	30
		31	4·538 04	·220 36	70·760 8	15·592 8	·064 132	31
		32	4·764 94	·209 87	75·298 8	15·802 7	·063 280	32
		33	5·003 19	·199 87	80·063 8	16·002 5	·062 490	33
		34	5·253 35	·190 35	85·067 0	16·192 9	·061 755	34
		35	5·516 02	·181 29	90·320 3	16·374 2	·061 072	35
		36	5·791 82	·172 66	95·836 3	16·546 9	·060 434	36
		37	6·081 41	·164 44	101·628 1	16·711 3	·059 840	37
		38	6·385 48	·156 61	107·709 5	16·867 9	·059 284	38
		39	6·704 75	·149 15	114·095 0	17·017 0	·058 765	39
		40	7·039 99	·142 05	120·799 8	17·159 1	·058 278	40
		41	7·391 99	·135 28	127·839 8	17·294 4	·057 822	41
		42	7·761 59	·128 84	135·231 8	17·423 2	·057 395	42
		43	8·149 67	·122 70	142·993 3	17·545 9	·056 993	43
		44	8·557 15	·116 86	151·143 0	17·662 8	·056 616	44
		45	8·985 01	·111 30	159·700 2	17·774 1	·056 262	45
		46	9·434 26	·106 00	168·685 2	17·880 1	·055 928	46
		47	9·905 97	·100 95	178·119 4	17·981 0	·055 614	47
		48	10·401 27	·096 14	188·025 4	18·077 2	·055 318	48
		49	10·921 33	·091 56	198·426 7	18·168 7	·055 040	49
		50	11·467 40	·087 20	209·348 0	18·255 9	·054 777	50
		60	18·679 19	·053 54	353·583 7	18·929 3	·052 828	60
		70	30·426 43	·032 87	588·528 5	19·342 7	·051 699	70
		80	49·561 44	·020 18	971·228 8	19·596 5	·051 030	80
		90	80·730 37	·012 39	1 594·607 3	19·752 3	·050 627	90
		100	131·501 26	·007 60	2 610·025 2	19·847 9	·050 383	100

$5\frac{1}{2}$ per cent

n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
1	1·055 00	·947 87	1·000 0	0·947 9	1·055 000	1
2	1·113 02	·898 45	2·055 0	1·846 3	0·541 618	2
3	1·174 24	·851 61	3·168 0	2·697 9	·370 654	3
4	1·238 82	·807 22	4·342 3	3·505 2	·285 294	4
5	1·306 96	·765 13	5·581 1	4·270 3	·234 176	5
6	1·378 84	·725 25	6·888 1	4·995 5	·200 179	6
7	1·454 68	·687 44	8·266 9	5·683 0	·175 964	7
8	1·534 69	·651 60	9·721 6	6·334 6	·157 864	8
9	1·619 09	·617 63	11·256 3	6·952 2	·143 839	9
10	1·708 14	·585 43	12·875 4	7·537 6	·132 668	10
11	1·802 09	·554 91	14·583 5	8·092 5	·123 571	11
12	1·901 21	·525 98	16·385 6	8·618 5	·116 029	12
13	2·005 77	·498 56	18·286 8	9·117 1	·109 684	13
14	2·116 09	·472 57	20·292 6	9·589 6	·104 279	14
15	2·232 48	·447 93	22·408 7	10·037 6	·099 626	15
16	2·355 26	·424 58	24·641 1	10·462 2	·095 583	16
17	2·484 80	·402 45	26·996 4	10·864 6	·092 042	17
18	2·621 47	·381 47	29·481 2	11·246 1	·088 920	18
19	2·765 65	·361 58	32·102 7	11·607 7	·086 150	19
20	2·917 76	·342 73	34·868 3	11·950 4	·083 679	20
21	3·078 23	·324 86	37·786 1	12·275 2	·081 465	21
22	3·247 54	·307 93	40·864 3	12·583 2	·079 471	22
23	3·426 15	·291 87	44·111 8	12·875 0	·077 670	23
24	3·614 59	·276 66	47·538 0	13·151 7	·076 036	24
25	3·813 39	·262 23	51·152 6	13·413 9	·074 549	25
26	4·023 13	·248 56	54·966 0	13·662 5	·073 193	26
27	4·244 40	·235 60	58·989 1	13·898 1	·071 952	27
28	4·477 84	·223 32	63·233 5	14·121 4	·070 814	28
29	4·724 12	·211 68	67·711 4	14·333 1	·069 769	29
30	4·983 95	·200 64	72·435 5	14·533 7	·068 805	30
31	5·258 07	·190 18	77·419 4	14·723 9	·067 917	31
32	5·547 26	·180 27	82·677 5	14·904 2	·067 095	32
33	5·852 36	·170 87	88·224 8	15·075 1	·066 335	33
34	6·174 24	·161 96	94·077 1	15·237 0	·065 630	34
35	6·513 83	·153 52	100·251 4	15·390 6	·064 975	35
36	6·872 09	·145 52	106·765 2	15·536 1	·064 366	36
37	7·250 05	·137 93	113·637 3	15·674 0	·063 800	37
38	7·648 80	·130 74	120·887 3	15·804 7	·063 272	38
39	8·069 49	·123 92	128·536 1	15·928 7	·062 780	39
40	8·513 31	·117 46	136·605 6	16·046 1	·062 320	40
41	8·981 54	·111 34	145·118 9	16·157 5	·061 891	41
42	9·475 53	·105 54	154·100 5	16·263 0	·061 489	42
43	9·996 68	·100 03	163·576 0	16·363 0	·061 113	43
44	10·546 50	·094 82	173·572 7	16·457 9	·060 761	44
45	11·126 55	·089 88	184·119 2	16·547 7	·060 431	45
46	11·738 51	·085 19	195·245 7	16·632 9	·060 122	46
47	12·384 13	·080 75	206·984 2	16·713 7	·059 831	47
48	13·065 26	·076 54	219·368 4	16·790 2	·059 559	48
49	13·783 85	·072 55	232·433 6	16·862 8	·059 302	49
50	14·541 96	·068 77	246·217 5	16·931 5	·059 061	50
60	24·839 77	·040 26	433·450 4	17·449 9	·057 307	60
70	42·429 92	·023 57	753·271 2	17·753 3	·056 328	70
80	72·476 43	·013 80	1 299·571 4	17·931 0	·055 769	80
90	123·800 21	·008 08	2 232·731 0	18·035 0	·055 448	90
100	211·468 64	·004 73	3 826·702 5	18·095 8	·055 261	100

Constants

Function	Value
i	·055 000
$i^{(2)}$	·054 264
$i^{(4)}$	·053 901
$i^{(12)}$	·053 660
δ	·053 541
$(1+i)^{\frac{1}{2}}$	1·027 132
$(1+i)^{\frac{1}{4}}$	1·013 475
$(1+i)^{\frac{1}{12}}$	1·004 472
v	·947 867
$v^{\frac{1}{2}}$	·973 585
$v^{\frac{1}{4}}$	·986 704
$v^{\frac{1}{12}}$	·995 548
d	·052 133
$d^{(2)}$	·052 830
$d^{(4)}$	·053 184
$d^{(12)}$	·053 422
$i/i^{(2)}$	1·013 566
$i/i^{(4)}$	1·020 395
$i/i^{(12)}$	1·024 965
i/δ	1·027 255
$i/d^{(2)}$	1·041 066
$i/d^{(4)}$	1·034 145
$i/d^{(12)}$	1·029 548
$\log_{10}(1+i)$	·023 252 5

6 per cent

Constants		n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
Function	Value	1	1·060 00	·943 40	1·000 0	0·943 4	1·060 000	1
		2	1·123 60	·890 00	2·060 0	1·833 4	0·545 437	2
i	·060 000	3	1·191 02	·839 62	3·183 6	2·673 0	·374 110	3
$i^{(2)}$	·059 126	4	1·262 48	·792 09	4·374 6	3·465 1	·288 591	4
$i^{(4)}$	·058 695	5	1·338 23	·747 26	5·637 1	4·212 4	·237 396	5
$i^{(12)}$	·058 411							
δ	·058 269	6	1·418 52	·704 96	6·975 3	4·917 3	·203 363	6
		7	1·503 63	·665 06	8·393 8	5·582 4	·179 135	7
$(1+i)^{\frac{1}{2}}$	1·029 563	8	1·593 85	·627 41	9·897 5	6·209 8	·161 036	8
$(1+i)^{\frac{1}{4}}$	1·014 674	9	1·689 48	·591 90	11·491 3	6·801 7	·147 022	9
$(1+i)^{\frac{1}{12}}$	1·004 868	10	1·790 85	·558 39	13·180 8	7·360 1	·135 868	10
v	·943 396	11	1·898 30	·526 79	14·971 6	7·886 9	·126 793	11
$v^{\frac{1}{2}}$	·971 286	12	2·012 20	·496 97	16·869 9	8·383 8	·119 277	12
$v^{\frac{1}{4}}$	·985 538	13	2·132 93	·468 84	18·882 1	8·852 7	·112 960	13
$v^{\frac{1}{12}}$	·995 156	14	2·260 90	·442 30	21·015 1	9·295 0	·107 585	14
		15	2·396 56	·417 27	23·276 0	9·712 2	·102 963	15
d	·056 604							
$d^{(2)}$	·057 428	16	2·540 35	·393 65	25·672 5	10·105 9	·098 952	16
$d^{(4)}$	·057 847	17	2·692 77	·371 36	28·212 9	10·477 3	·095 445	17
$d^{(12)}$	·058 128	18	2·854 34	·350 34	30·905 7	10·827 6	·092 357	18
		19	3·025 60	·330 51	33·760 0	11·158 1	·089 621	19
$i/i^{(2)}$	1·014 782	20	3·207 14	·311 80	36·785 6	11·469 9	·087 185	20
$i/i^{(4)}$	1·022 227							
$i/i^{(12)}$	1·027 211	21	3·399 56	·294 16	39·992 7	11·764 1	·085 005	21
i/δ	1·029 709	22	3·603 54	·277 51	43·392 3	12·041 6	·083 046	22
		23	3·819 75	·261 80	46·995 8	12·303 4	·081 278	23
$i/d^{(2)}$	1·044 782	24	4·048 93	·246 98	50·815 6	12·550 4	·079 679	24
$i/d^{(4)}$	1·037 227	25	4·291 87	·233 00	54·864 5	12·783 4	·078 227	25
$i/d^{(12)}$	1·032 211							
		26	4·549 38	·219 81	59·156 4	13·003 2	·076 904	26
$\log_{10}(1+i)$	·025 305 9	27	4·822 35	·207 37	63·705 8	13·210 5	·075 697	27
		28	5·111 69	·195 63	68·528 1	13·406 2	·074 593	28
		29	5·418 39	·184 56	73·639 8	13·590 7	·073 580	29
		30	5·743 49	·174 11	79·058 2	13·764 8	·072 649	30
		31	6·088 10	·164 25	84·801 7	13·929 1	·071 792	31
		32	6·453 39	·154 96	90·889 8	14·084 0	·071 002	32
		33	6·840 59	·146 19	97·343 2	14·230 2	·070 273	33
		34	7·251 03	·137 91	104·183 8	14·368 1	·069 598	34
		35	7·686 09	·130 11	111·434 8	14·498 2	·068 974	35
		36	8·147 25	·122 74	119·120 9	14·621 0	·068 395	36
		37	8·636 09	·115 79	127·268 1	14·736 8	·067 857	37
		38	9·154 25	·109 24	135·904 2	14·846 0	·067 358	38
		39	9·703 51	·103 06	145·058 5	14·949 1	·066 894	39
		40	10·285 72	·097 22	154·762 0	15·046 3	·066 462	40
		41	10·902 86	·091 72	165·047 7	15·138 0	·066 059	41
		42	11·557 03	·086 53	175·950 5	15·224 5	·065 683	42
		43	12·250 45	·081 63	187·507 6	15·306 2	·065 333	43
		44	12·985 48	·077 01	199·758 0	15·383 2	·065 006	44
		45	13·764 61	·072 65	212·743 5	15·455 8	·064 700	45
		46	14·590 49	·068 54	226·508 1	15·524 4	·064 415	46
		47	15·465 92	·064 66	241·098 6	15·589 0	·064 148	47
		48	16·393 87	·061 00	256·564 5	15·650 0	·063 898	48
		49	17·377 50	·057 55	272·958 4	15·707 6	·063 664	49
		50	18·420 15	·054 29	290·335 9	15·761 9	·063 444	50
		60	32·987 69	·030 31	533·128 2	16·161 4	·061 876	60
		70	59·075 93	·016 93	967·932 2	16·384 5	·061 033	70
		80	105·795 99	·009 45	1 746·599 9	16·509 1	·060 573	80
		90	189·464 51	·005 28	3 141·075 2	16·578 7	·060 318	90
		100	339·302 08	·002 95	5 638·368 1	16·617 5	·060 177	100

7 per cent

n	$(1+i)^n$	v^n	$s_{\overline{n}\|}$	$a_{\overline{n}\|}$	$(a_{\overline{n}\|})^{-1}$	n
1	1·070 00	·934 58	1·000 0	0·934 6	1·070 000	1
2	1·144 90	·873 44	2·070 0	1·808 0	0·553 092	2
3	1·225 04	·816 30	3·214 9	2·624 3	·381 052	3
4	1·310 80	·762 90	4·439 9	3·387 2	·295 228	4
5	1·402 55	·712 99	5·750 7	4·100 2	·243 891	5
6	1·500 73	·666 34	7·153 3	4·766 5	·209 796	6
7	1·605 78	·622 75	8·654 0	5·389 3	·185 553	7
8	1·718 19	·582 01	10·259 8	5·971 3	·167 468	8
9	1·838 46	·543 93	11·978 0	6·515 2	·153 486	9
10	1·967 15	·508 35	13·816 4	7·023 6	·142 378	10
11	2·104 85	·475 09	15·783 6	7·498 7	·133 357	11
12	2·252 19	·444 01	17·888 5	7·942 7	·125 902	12
13	2·409 84	·414 96	20·140 6	8·357 7	·119 651	13
14	2·578 53	·387 82	22·550 5	8·745 5	·114 345	14
15	2·759 03	·362 45	25·129 0	9·107 9	·109 795	15
16	2·952 16	·338 73	27·888 1	9·446 6	·105 858	16
17	3·158 82	·316 57	30·840 2	9·763 2	·102 425	17
18	3·379 93	·295 86	33·999 0	10·059 1	·099 413	18
19	3·616 53	·276 51	37·379 0	10·335 6	·096 753	19
20	3·869 68	·258 42	40·995 5	10·594 0	·094 393	20
21	4·140 56	·241 51	44·865 2	10·835 5	·092 289	21
22	4·430 40	·225 71	49·005 7	11·061 2	·090 406	22
23	4·740 53	·210 95	53·436 1	11·272 2	·088 714	23
24	5·072 37	·197 15	58·176 7	11·469 3	·087 189	24
25	5·427 43	·184 25	63·249 0	11·653 6	·085 811	25
26	5·807 35	·172 20	68·676 5	11·825 8	·084 561	26
27	6·213 87	·160 93	74·483 8	11·986 7	·083 426	27
28	6·648 84	·150 40	80·697 7	12·137 1	·082 392	28
29	7·114 26	·140 56	87·346 5	12·277 7	·081 449	29
30	7·612 26	·131 37	94·460 8	12·409 0	·080 586	30
31	8·145 11	·122 77	102·073 0	12·531 8	·079 797	31
32	8·715 27	·114 74	110·218 2	12·646 6	·079 073	32
33	9·325 34	·107 23	118·933 4	12·753 8	·078 408	33
34	9·978 11	·100 22	128·258 8	12·854 0	·077 797	34
35	10·676 58	·093 66	138·236 9	12·947 7	·077 234	35
36	11·423 94	·087 54	148·913 5	13·035 2	·076 715	36
37	12·223 62	·081 81	160·337 4	13·117 0	·076 237	37
38	13·079 27	·076 46	172·561 0	13·193 5	·075 795	38
39	13·994 82	·071 46	185·640 3	13·264 9	·075 387	39
40	14·974 46	·066 78	199·635 1	13·331 7	·075 009	40
41	16·022 67	·062 41	214·609 6	13·394 1	·074 660	41
42	17·144 26	·058 33	230·632 2	13·452 4	·074 336	42
43	18·344 35	·054 51	247·776 5	13·507 0	·074 036	43
44	19·628 46	·050 95	266·120 9	13·557 9	·073 758	44
45	21·002 45	·047 61	285·749 3	13·605 5	·073 500	45
46	22·472 62	·044 50	306·751 8	13·650 0	·073 260	46
47	24·045 71	·041 59	329·224 4	13·691 6	·073 037	47
48	25·728 91	·038 87	353·270 1	13·730 5	·072 831	48
49	27·529 93	·036 32	378·999 0	13·766 8	·072 639	49
50	29·457 03	·033 95	406·528 9	13·800 7	·072 460	50
60	57·946 43	·017 26	813·520 4	14·039 2	·071 229	60
70	113·989 39	·008 77	1 614·134 2	14·160 4	·070 620	70
80	224·234 39	·004 46	3 189·062 7	14·222 0	·070 314	80
90	441·102 98	·002 27	6 287·185 4	14·253 3	·070 159	90
100	867·716 33	·001 15	12 381·661 8	14·269 3	·070 081	100

Constants

Function	Value
i	·070 000
$i^{(2)}$	·068 816
$i^{(4)}$	·068 234
$i^{(12)}$	·067 850
δ	·067 659
$(1+i)^{\frac{1}{2}}$	1·034 408
$(1+i)^{\frac{1}{4}}$	1·017 059
$(1+i)^{\frac{1}{12}}$	1·005 654
v	·934 579
$v^{\frac{1}{2}}$	·966 736
$v^{\frac{1}{4}}$	·983 228
$v^{\frac{1}{12}}$	·994 378
d	·065 421
$d^{(2)}$	·066 527
$d^{(4)}$	·067 090
$d^{(12)}$	·067 468
$i/i^{(2)}$	1·017 204
$i/i^{(4)}$	1·025 880
$i/i^{(12)}$	1·031 691
i/δ	1·034 605
$i/d^{(2)}$	1·052 204
$i/d^{(4)}$	1·043 380
$i/d^{(12)}$	1·037 524
$\log_{10}(1+i)$	·029 383 8

8 per cent

Function	Value
i	·080 000
$i^{(2)}$	·078 461
$i^{(4)}$	·077 706
$i^{(12)}$	·077 208
δ	·076 961
$(1+i)^{\frac{1}{2}}$	1·039 230
$(1+i)^{\frac{1}{4}}$	1·019 427
$(1+i)^{\frac{1}{12}}$	1·006 434
v	·925 926
$v^{\frac{1}{2}}$	·962 250
$v^{\frac{1}{4}}$	·980 944
$v^{\frac{1}{12}}$	·993 607
d	·074 074
$d^{(2)}$	·075 499
$d^{(4)}$	·076 225
$d^{(12)}$	·076 714
$i/i^{(2)}$	1·019 615
$i/i^{(4)}$	1·029 519
$i/i^{(12)}$	1·036 157
i/δ	1·039 487
$i/d^{(2)}$	1·059 615
$i/d^{(4)}$	1·049 519
$i/d^{(12)}$	1·042 824
$\log_{10}(1+i)$	·033 423 8

n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
1	1·080 00	·925 93	1·000 0	0·925 9	1·080 000	1
2	1·166 40	·857 34	2·080 0	1·783 3	0·560 769	2
3	1·259 71	·793 83	3·246 4	2·577 1	·388 034	3
4	1·360 49	·735 03	4·506 1	3·312 1	·301 921	4
5	1·469 33	·680 58	5·866 6	3·992 7	·250 456	5
6	1·586 87	·630 17	7·335 9	4·622 9	·216 315	6
7	1·713 82	·583 49	8·922 8	5·206 4	·192 072	7
8	1·850 93	·540 27	10·636 6	5·746 6	·174 015	8
9	1·999 00	·500 25	12·487 6	6·246 9	·160 080	9
10	2·158 92	·463 19	14·486 6	6·710 1	·149 029	10
11	2·331 64	·428 88	16·645 5	7·139 0	·140 076	11
12	2·518 17	·397 11	18·977 1	7·536 1	·132 695	12
13	2·719 62	·367 70	21·495 3	7·903 8	·126 522	13
14	2·937 19	·340 46	24·214 9	8·244 2	·121 297	14
15	3·172 17	·315 24	27·152 1	8·559 5	·116 830	15
16	3·425 94	·291 89	30·324 3	8·851 4	·112 977	16
17	3·700 02	·270 27	33·750 2	9·121 6	·109 629	17
18	3·996 02	·250 25	37·450 2	9·371 9	·106 702	18
19	4·315 70	·231 71	41·446 3	9·603 6	·104 128	19
20	4·660 96	·214 55	45·762 0	9·818 1	·101 852	20
21	5·033 83	·198 66	50·422 9	10·016 8	·099 832	21
22	5·436 54	·183 94	55·456 8	10·200 7	·098 032	22
23	5·871 46	·170 32	60·893 3	10·371 1	·096 422	23
24	6·341 18	·157 70	66·764 8	10·528 8	·094 978	24
25	6·848 48	·146 02	73·105 9	10·674 8	·093 679	25
26	7·396 35	·135 20	79·954 4	10·810 0	·092 507	26
27	7·988 06	·125 19	87·350 8	10·935 2	·091 448	27
28	8·627 11	·115 91	95·338 8	11·051 1	·090 489	28
29	9·317 27	·107 33	103·965 9	11·158 4	·089 619	29
30	10·062 66	·099 38	113·283 2	11·257 8	·088 827	30
31	10·867 67	·092 02	123·345 9	11·349 8	·088 107	31
32	11·737 08	·085 20	134·213 5	11·435 0	·087 451	32
33	12·676 05	·078 89	145·950 6	11·513 9	·086 852	33
34	13·690 13	·073 05	158·626 7	11·586 9	·086 304	34
35	14·785 34	·067 63	172·316 8	11·654 6	·085 803	35
36	15·968 17	·062 62	187·102 1	11·717 2	·085 345	36
37	17·245 63	·057 99	203·070 3	11·775 2	·084 924	37
38	18·625 28	·053 69	220·315 9	11·828 9	·084 539	38
39	20·115 30	·049 71	238·941 2	11·878 6	·084 185	39
40	21·724 52	·046 03	259·056 5	11·924 6	·083 860	40
41	23·462 48	·042 62	280·781 0	11·967 2	·083 561	41
42	25·339 48	·039 46	304·243 5	12·006 7	·083 287	42
43	27·366 64	·036 54	329·583 0	12·043 2	·083 034	43
44	29·555 97	·033 83	356·949 6	12·077 1	·082 802	44
45	31·920 45	·031 33	386·505 6	12·108 4	·082 587	45
46	34·474 09	·029 01	418·426 1	12·137 4	·082 390	46
47	37·232 01	·026 86	452·900 2	12·164 3	·082 208	47
48	40·210 57	·024 87	490·132 2	12·189 1	·082 040	48
49	43·427 42	·023 03	530·342 7	12·212 2	·081 886	49
50	46·901 61	·021 32	573·770 2	12·233 5	·081 743	50
60	101·257 06	·009 88	1 253·213 3	12·376 6	·080 798	60
70	218·606 41	·004 57	2 720·080 1	12·442 8	·080 368	70
80	471·954 83	·002 12	5 886·935 4	12·473 5	·080 170	80
90	1 018·915 09	·000 98	12 723·938 6	12·487 7	·080 079	90
100	2 199·761 26	·000 45	27 484·515 7	12·494 3	·080 036	100

9 per cent

n	$(1+i)^n$	v^n	$s_{\overline{n}\|}$	$a_{\overline{n}\|}$	$(a_{\overline{n}\|})^{-1}$	n
1	1·090 00	·917 43	1·000 0	0·917 4	1·090 000	1
2	1·188 10	·841 68	2·090 0	1·759 1	0·568 469	2
3	1·295 03	·772 18	3·278 1	2·531 3	·395 055	3
4	1·411 58	·708 43	4·573 1	3·239 7	·308 669	4
5	1·538 62	·649 93	5·984 7	3·889 7	·257 092	5
6	1·677 10	·596 27	7·523 3	4·485 9	·222 920	6
7	1·828 04	·547 03	9·200 4	5·033 0	·198 691	7
8	1·992 56	·501 87	11·028 5	5·534 8	·180 674	8
9	2·171 89	·460 43	13·021 0	5·995 2	·166 799	9
10	2·367 36	·422 41	15·192 9	6·417 7	·155 820	10
11	2·580 43	·387 53	17·560 3	6·805 2	·146 947	11
12	2·812 66	·355 53	20·140 7	7·160 7	·139 651	12
13	3·065 80	·326 18	22·953 4	7·486 9	·133 567	13
14	3·341 73	·299 25	26·019 2	7·786 2	·128 433	14
15	3·642 48	·274 54	29·360 9	8·060 7	·124 059	15
16	3·970 31	·251 87	33·003 4	8·312 6	·120 300	16
17	4·327 63	·231 07	36·973 7	8·543 6	·117 046	17
18	4·717 12	·211 99	41·301 3	8·755 6	·114 212	18
19	5·141 66	·194 49	46·018 5	8·950 1	·111 730	19
20	5·604 41	·178 43	51·160 1	9·128 5	·109 546	20
21	6·108 81	·163 70	56·764 5	9·292 2	·107 617	21
22	6·658 60	·150 18	62·873 3	9·442 4	·105 905	22
23	7·257 87	·137 78	69·531 9	9·580 2	·104 382	23
24	7·911 08	·126 40	76·789 8	9·706 6	·103 023	24
25	8·623 08	·115 97	84·700 9	9·822 6	·101 806	25
26	9·399 16	·106 39	93·324 0	9·929 0	·100 715	26
27	10·245 08	·097 61	102·723 1	10·026 6	·099 735	27
28	11·167 14	·089 55	112·968 2	10·116 1	·098 852	28
29	12·172 18	·082 15	124·135 4	10·198 3	·098 056	29
30	13·267 68	·075 37	136·307 5	10·273 7	·097 336	30
31	14·461 77	·069 15	149·575 2	10·342 8	·096 686	31
32	15·763 33	·063 44	164·037 0	10·406 2	·096 096	32
33	17·182 03	·058 20	179·800 3	10·464 4	·095 562	33
34	18·728 41	·053 39	196·982 3	10·517 8	·095 077	34
35	20·413 97	·048 99	215·710 8	10·566 8	·094 636	35
36	22·251 23	·044 94	236·124 7	10·611 8	·094 235	36
37	24·253 84	·041 23	258·375 9	10·653 0	·093 870	37
38	26·436 68	·037 83	282·629 8	10·690 8	·093 538	38
39	28·815 98	·034 70	309·066 5	10·725 5	·093 236	39
40	31·409 42	·031 84	337·882 4	10·757 4	·092 960	40
41	34·236 27	·029 21	369·291 9	10·786 6	·092 708	41
42	37·317 53	·026 80	403·528 1	10·813 4	·092 478	42
43	40·676 11	·024 58	440·845 7	10·838 0	·092 268	43
44	44·336 96	·022 55	481·521 8	10·860 5	·092 077	44
45	48·327 29	·020 69	525·858 7	10·881 2	·091 902	45
46	52·676 74	·018 98	574·186 0	10·900 2	·091 742	46
47	57·417 65	·017 42	626·862 8	10·917 6	·091 595	47
48	62·585 24	·015 98	684·280 4	10·933 6	·091 461	48
49	68·217 91	·014 66	746·865 6	10·948 2	·091 339	49
50	74·357 52	·013 45	815·083 6	10·961 7	·091 227	50
60	176·031 29	·005 68	1 944·792 1	11·048 0	·090 514	60
70	416·730 09	·002 40	4 619·223 2	11·084 4	·090 216	70
80	986·551 67	·001 01	10 950·574 1	11·099 8	·090 091	80
90	2 335·526 58	·000 43	25 939·184 2	11·106 4	·090 039	90
100	5 529·040 79	·000 18	61 422·675 5	11·109 1	·090 016	100

Constants

Function	Value
i	·090 000
$i^{(2)}$	·088 061
$i^{(4)}$	·087 113
$i^{(12)}$	·086 488
δ	·086 178
$(1+i)^{\frac{1}{2}}$	1·044 031
$(1+i)^{\frac{1}{4}}$	1·021 778
$(1+i)^{\frac{1}{12}}$	1·007 207
v	·917 431
$v^{\frac{1}{2}}$	·957 826
$v^{\frac{1}{4}}$	·978 686
$v^{\frac{1}{12}}$	·992 844
d	·082 569
$d^{(2)}$	·084 347
$d^{(4)}$	·085 256
$d^{(12)}$	·085 869
$i/i^{(2)}$	1·022 015
$i/i^{(4)}$	1·033 144
$i/i^{(12)}$	1·040 608
i/δ	1·044 354
$i/d^{(2)}$	1·067 015
$i/d^{(4)}$	1·055 644
$i/d^{(12)}$	1·048 108
$\log_{10}(1+i)$	·037 426 5

10 per cent

Constants		n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
Function	Value	1	1·100 00	·909 09	1·000 0	0·909 1	1·100 000	1
		2	1·210 00	·826 45	2·100 0	1·735 5	0·576 190	2
i	·100 000	3	1·331 00	·751 31	3·310 0	2·486 9	·402 115	3
$i^{(2)}$	·097 618	4	1·464 10	·683 01	4·641 0	3·169 9	·315 471	4
$i^{(4)}$	·096 455	5	1·610 51	·620 92	6·105 1	3·790 8	·263 797	5
$i^{(12)}$	·095 690	6	1·771 56	·564 47	7·715 6	4·355 3	·229 607	6
δ	·095 310	7	1·948 72	·513 16	9·487 2	4·868 4	·205 405	7
		8	2·143 59	·466 51	11·435 9	5·334 9	·187 444	8
$(1+i)^{\frac{1}{2}}$	1·048 809	9	2·357 95	·424 10	13·579 5	5·759 0	·173 641	9
$(1+i)^{\frac{1}{4}}$	1·024 114	10	2·593 74	·385 54	15·937 4	6·144 6	·162 745	10
$(1+i)^{\frac{1}{12}}$	1·007 974	11	2·853 12	·350 49	18·531 2	6·495 1	·153 963	11
v	·909 091	12	3·138 43	·318 63	21·384 3	6·813 7	·146 763	12
$v^{\frac{1}{2}}$	·953 463	13	3·452 27	·289 66	24·522 7	7·103 4	·140 779	13
$v^{\frac{1}{4}}$	·976 454	14	3·797 50	·263 33	27·975 0	7·366 7	·135 746	14
$v^{\frac{1}{12}}$	·992 089	15	4·177 25	·239 39	31·772 5	7·606 1	·131 474	15
d	·090 909	16	4·594 97	·217 63	35·949 7	7·823 7	·127 817	16
$d^{(2)}$	·093 075	17	5·054 47	·197 84	40·544 7	8·021 6	·124 664	17
$d^{(4)}$	·094 184	18	5·559 92	·179 86	45·599 2	8·201 4	·121 930	18
$d^{(12)}$	·094 933	19	6·115 91	·163 51	51·159 1	8·364 9	·119 547	19
		20	6·727 50	·148 64	57·275 0	8·513 6	·117 460	20
$i/i^{(2)}$	1·024 404	21	7·400 25	·135 13	64·002 5	8·648 7	·115 624	21
$i/i^{(4)}$	1·036 755	22	8·140 27	·122 85	71·402 7	8·771 5	·114 005	22
$i/i^{(12)}$	1·045 045	23	8·954 30	·111 68	79·543 0	8·883 2	·112 572	23
i/δ	1·049 206	24	9·849 73	·101 53	88·497 3	8·984 7	·111 300	24
		25	10·834 71	·092 30	98·347 1	9·077 0	·110 168	25
$i/d^{(2)}$	1·074 404	26	11·918 18	·083 91	109·181 8	9·160 9	·109 159	26
$i/d^{(4)}$	1·061 756	27	13·109 99	·076 28	121·099 9	9·237 2	·108 258	27
$i/d^{(12)}$	1·053 378	28	14·420 99	·069 34	134·209 9	9·306 6	·107 451	28
		29	15·863 09	·063 04	148·630 9	9·369 6	·106 728	29
$\log_{10}(1+i)$	·041 392 7	30	17·449 40	·057 31	164·494 0	9·426 9	·106 079	30
		31	19·194 34	·052 10	181·943 4	9·479 0	·105 496	31
		32	21·113 78	·047 36	201·137 8	9·526 4	·104 972	32
		33	23·225 15	·043 06	222·251 5	9·569 4	·104 499	33
		34	25·547 67	·039 14	245·476 7	9·608 6	·104 074	34
		35	28·102 44	·035 58	271·024 4	9·644 2	·103 690	35
		36	30·912 68	·032 35	299·126 8	9·676 5	·103 343	36
		37	34·003 95	·029 41	330·039 5	9·705 9	·103 030	37
		38	37·404 34	·026 73	364·043 4	9·732 7	·102 747	38
		39	41·144 78	·024 30	401·447 8	9·757 0	·102 491	39
		40	45·259 26	·022 09	442·592 6	9·779 1	·102 259	40
		41	49·785 18	·020 09	487·851 8	9·799 1	·102 050	41
		42	54·763 70	·018 26	537·637 0	9·817 4	·101 860	42
		43	60·240 07	·016 60	592·400 7	9·834 0	·101 688	43
		44	66·264 08	·015 09	652·640 8	9·849 1	·101 532	44
		45	72·890 48	·013 72	718·904 8	9·862 8	·101 391	45
		46	80·179 53	·012 47	791·795 3	9·875 3	·101 263	46
		47	88·197 49	·011 34	871·974 9	9·886 6	·101 147	47
		48	97·017 23	·010 31	960·172 3	9·896 9	·101 041	48
		49	106·718 96	·009 37	1 057·189 6	9·906 3	·100 946	49
		50	117·390 85	·008 52	1 163·908 5	9·914 8	·100 859	50
		60	304·481 64	·003 28	3 034·816 4	9·967 2	·100 330	60
		70	789·746 96	·001 27	7 887·469 6	9·987 3	·100 127	70
		80	2 048·400 21	·000 49	20 474·002 1	9·995 1	·100 049	80
		90	5 313·022 61	·000 19	53 120·226 1	9·998 1	·100 019	90
		100	13 780·612 34	·000 07	137 796·123 4	9·999 3	·100 007	100

12 per cent

n	$(1+i)^n$	v^n	$s_{\overline{n}\|}$	$a_{\overline{n}\|}$	$(a_{\overline{n}\|})^{-1}$	n
1	1·120 00	·892 86	1·000 0	0·892 9	1·120 000	1
2	1·254 40	·797 19	2·120 0	1·690 1	0·591 698	2
3	1·404 93	·711 78	3·374 4	2·401 8	·416 349	3
4	1·573 52	·635 52	4·779 3	3·037 3	·329 234	4
5	1·762 34	·567 43	6·352 8	3·604 8	·277 410	5
6	1·973 82	·506 63	8·115 2	4·111 4	·243 226	6
7	2·210 68	·452 35	10·089 0	4·563 8	·219 118	7
8	2·475 96	·403 88	12·299 7	4·967 6	·201 303	8
9	2·773 08	·360 61	14·775 7	5·328 2	·187 679	9
10	3·105 85	·321 97	17·548 7	5·650 2	·176 984	10
11	3·478 55	·287 48	20·654 6	5·937 7	·168 415	11
12	3·895 98	·256 68	24·133 1	6·194 4	·161 437	12
13	4·363 49	·229 17	28·029 1	6·423 5	·155 677	13
14	4·887 11	·204 62	32·392 6	6·628 2	·150 871	14
15	5·473 57	·182 70	37·279 7	6·810 9	·146 824	15
16	6·130 39	·163 12	42·753 3	6·974 0	·143 390	16
17	6·866 04	·145 64	48·883 7	7·119 6	·140 457	17
18	7·689 97	·130 04	55·749 7	7·249 7	·137 937	18
19	8·612 76	·116 11	63·439 7	7·365 8	·135 763	19
20	9·646 29	·103 67	72·052 4	7·469 4	·133 879	20
21	10·803 85	·092 56	81·698 7	7·562 0	·132 240	21
22	12·100 31	·082 64	92·502 6	7·644 6	·130 811	22
23	13·552 35	·073 79	104·602 9	7·718 4	·129 560	23
24	15·178 63	·065 88	118·155 2	7·784 3	·128 463	24
25	17·000 06	·058 82	133·333 9	7·843 1	·127 500	25

Constants

Function	Value
i	·120 000
$i^{(2)}$	·116 601
$i^{(4)}$	·114 949
$i^{(12)}$	·113 866
δ	·113 329
$(1+i)^{\frac{1}{2}}$	1·058 301
$(1+i)^{\frac{1}{4}}$	1·028 737
$(1+i)^{\frac{1}{12}}$	1·009 489
v	·892 857
$v^{\frac{1}{2}}$	·944 911
$v^{\frac{1}{4}}$	·972 065
$v^{\frac{1}{12}}$	·990 600
d	·107 143
$d^{(2)}$	·110 178
$d^{(4)}$	·111 738
$d^{(12)}$	·112 795
$i/i^{(2)}$	1·029 150
$i/i^{(4)}$	1·043 938
$i/i^{(12)}$	1·053 875
i/δ	1·058 867
$i/d^{(2)}$	1·089 150
$i/d^{(4)}$	1·073 938
$i/d^{(12)}$	1·063 875
$\log_{10}(1+i)$	·049 218 0

15 per cent

Constants	
Function	Value
i	·150 000
$i^{(2)}$	·144 761
$i^{(4)}$	·142 232
$i^{(12)}$	·140 579
δ	·139 762
$(1+i)^{\frac{1}{2}}$	1·072 381
$(1+i)^{\frac{1}{4}}$	1·035 558
$(1+i)^{\frac{1}{12}}$	1·011 715
v	·869 565
$v^{\frac{1}{2}}$	·932 505
$v^{\frac{1}{4}}$	·965 663
$v^{\frac{1}{12}}$	·988 421
d	·130 435
$d^{(2)}$	·134 990
$d^{(4)}$	·137 348
$d^{(12)}$	·138 951
$i/i^{(2)}$	1·036 190
$i/i^{(4)}$	1·054 613
$i/i^{(12)}$	1·067 016
i/δ	1·073 254
$i/d^{(2)}$	1·111 190
$i/d^{(4)}$	1·092 113
$i/d^{(12)}$	1·079 516
$\log_{10}(1+i)$	·060 697 8

n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
1	1·150 00	·869 57	1·000 0	0·869 6	1·150 000	1
2	1·322 50	·756 14	2·150 0	1·625 7	0·615 116	2
3	1·520 88	·657 52	3·472 5	2·283 2	·437 977	3
4	1·749 01	·571 75	4·993 4	2·855 0	·350 265	4
5	2·011 36	·497 18	6·742 4	3·352 2	·298 316	5
6	2·313 06	·432 33	8·753 7	3·784 5	·264 237	6
7	2·660 02	·375 94	11·066 8	4·160 4	·240 360	7
8	3·059 02	·326 90	13·726 8	4·487 3	·222 850	8
9	3·517 88	·284 26	16·785 8	4·771 6	·209 574	9
10	4·045 56	·247 18	20·303 7	5·018 8	·199 252	10
11	4·652 39	·214 94	24·349 3	5·233 7	·191 069	11
12	5·350 25	·186 91	29·001 7	5·420 6	·184 481	12
13	6·152 79	·162 53	34·351 9	5·583 1	·179 110	13
14	7·075 71	·141 33	40·504 7	5·724 5	·174 688	14
15	8·137 06	·122 89	47·580 4	5·847 4	·171 017	15
16	9·357 62	·106 86	55·717 5	5·954 2	·167 948	16
17	10·761 26	·092 93	65·075 1	6·047 2	·165 367	17
18	12·375 45	·080 81	75·836 4	6·128 0	·163 186	18
19	14·231 77	·070 27	88·211 8	6·198 2	·161 336	19
20	16·366 54	·061 10	102·443 6	6·259 3	·159 761	20
21	18·821 52	·053 13	118·810 1	6·312 5	·158 417	21
22	21·644 75	·046 20	137·631 6	6·358 7	·157 266	22
23	24·891 46	·040 17	159·276 4	6·398 8	·156 278	23
24	28·625 18	·034 93	184·167 8	6·433 8	·155 430	24
25	32·918 95	·030 38	212·793 0	6·464 1	·154 699	25

20 per cent

n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
1	1·200 00	·833 33	1·000 0	0·833 3	1·200 000	1
2	1·440 00	·694 44	2·200 0	1·527 8	0·654 545	2
3	1·728 00	·578 70	3·640 0	2·106 5	·474 725	3
4	2·073 60	·482 25	5·368 0	2·588 7	·386 289	4
5	2·488 32	·401 88	7·441 6	2·990 6	·334 380	5
6	2·985 98	·334 90	9·929 9	3·325 5	·300 706	6
7	3·583 18	·279 08	12·915 9	3·604 6	·277 424	7
8	4·299 82	·232 57	16·499 1	3·837 2	·260 609	8
9	5·159 78	·193 81	20·798 9	4·031 0	·248 079	9
10	6·191 74	·161 51	25·958 7	4·192 5	·238 523	10
11	7·430 08	·134 59	32·150 4	4·327 1	·231 104	11
12	8·916 10	·112 16	39·580 5	4·439 2	·225 265	12
13	10·699 32	·093 46	48·496 6	4·532 7	·220 620	13
14	12·839 18	·077 89	59·195 9	4·610 6	·216 893	14
15	15·407 02	·064 91	72·035 1	4·675 5	·213 882	15
16	18·488 43	·054 09	87·442 1	4·729 6	·211 436	16
17	22·186 11	·045 07	105·930 6	4·774 6	·209 440	17
18	26·623 33	·037 56	128·116 7	4·812 2	·207 805	18
19	31·948 00	·031 30	154·740 0	4·843 5	·206 462	19
20	38·337 60	·026 08	186·688 0	4·869 6	·205 357	20
21	46·005 12	·021 74	225·025 6	4·891 3	·204 444	21
22	55·206 14	·018 11	271·030 7	4·909 4	·203 690	22
23	66·247 37	·015 09	326·236 9	4·924 5	·203 065	23
24	79·496 85	·012 58	392·484 2	4·937 1	·202 548	24
25	95·396 22	·010 48	471·981 1	4·947 6	·202 119	25

Constants

Function	Value
i	·200 000
$i^{(2)}$	·190 890
$i^{(4)}$	·186 541
$i^{(12)}$	·183 714
δ	·182 322
$(1+i)^{\frac{1}{2}}$	1·095 445
$(1+i)^{\frac{1}{4}}$	1·046 635
$(1+i)^{\frac{1}{12}}$	1·015 309
v	·833 333
$v^{\frac{1}{2}}$	·912 871
$v^{\frac{1}{4}}$	·955 443
$v^{\frac{1}{12}}$	·984 921
d	·166 667
$d^{(2)}$	·174 258
$d^{(4)}$	·178 229
$d^{(12)}$	·180 943
$i/i^{(2)}$	1·047 723
$i/i^{(4)}$	1·072 153
$i/i^{(12)}$	1·088 651
i/δ	1·096 959
$i/d^{(2)}$	1·147 723
$i/d^{(4)}$	1·122 153
$i/d^{(12)}$	1·105 317
$\log_{10}(1+i)$	·079 181 2

25 per cent

Constants		n	$(1+i)^n$	v^n	$s_{\overline{n}\rceil}$	$a_{\overline{n}\rceil}$	$(a_{\overline{n}\rceil})^{-1}$	n
Function	Value	1	1·250 00	·800 00	1·000 0	0·800 0	1·250 000	1
		2	1·562 50	·640 00	2·250 0	1·440 0	0·694 444	2
i	·250 000	3	1·953 12	·512 00	3·812 5	1·952 0	·512 295	3
$i^{(2)}$	·236 068	4	2·441 41	·409 60	5·765 6	2·361 6	·423 442	4
$i^{(4)}$	·229 485	5	3·051 76	·327 68	8·207 0	2·689 3	·371 847	5
$i^{(12)}$	·225 231							
δ	·223 144	6	3·814 70	·262 14	11·258 8	2·951 4	·338 819	6
		7	4·768 37	·209 72	15·073 5	3·161 1	·316 342	7
$(1+i)^{\frac{1}{2}}$	1·118 034	8	5·960 46	·167 77	19·841 9	3·328 9	·300 399	8
$(1+i)^{\frac{1}{4}}$	1·057 371	9	7·450 58	·134 22	25·802 3	3·463 1	·288 756	9
$(1+i)^{\frac{1}{12}}$	1·018 769	10	9·313 23	·107 37	33·252 9	3·570 5	·280 073	10
		11	11·641 53	·085 90	42·566 1	3·656 4	·273 493	11
v	·800 000	12	14·551 92	·068 72	54·207 7	3·725 1	·268 448	12
$v^{\frac{1}{2}}$	·894 427	13	18·189 89	·054 98	68·759 6	3·780 1	·264 543	13
$v^{\frac{1}{4}}$	·945 742	14	22·737 37	·043 98	86·949 5	3·824 1	·261 501	14
$v^{\frac{1}{12}}$	·981 577	15	28·421 71	·035 18	109·686 8	3·859 3	·259 117	15
		16	35·527 14	·028 15	138·108 5	3·887 4	·257 241	16
d	·200 000	17	44·408 92	·022 52	173·635 7	3·909 9	·255 759	17
$d^{(2)}$	·211 146	18	55·511 15	·018 01	218·044 6	3·927 9	·254 586	18
$d^{(4)}$	·217 034	19	69·388 94	·014 41	273·555 8	3·942 4	·253 656	19
$d^{(12)}$	·221 082	20	86·736 17	·011 53	342·944 7	3·953 9	·252 916	20
		21	108·420 22	·009 22	429·680 9	3·963 1	·252 327	21
$i/i^{(2)}$	1·059 017	22	135·525 27	·007 38	538·101 1	3·970 5	·251 858	22
$i/i^{(4)}$	1·089 396	23	169·406 59	·005 90	673·626 4	3·976 4	·251 485	23
$i/i^{(12)}$	1·109 971	24	211·758 24	·004 72	843·032 9	3·981 1	·251 186	24
i/δ	1·120 355	25	264·697 80	·003 78	1 054·791 2	3·984 9	·250 948	25
$i/d^{(2)}$	1·184 017							
$i/d^{(4)}$	1·151 896							
$i/d^{(12)}$	1·130 804							
$\log_{10}(1+i)$	·096 910 0							

SECTION II

ENGLISH LIFE TABLE No. 12—MALES

MORTALITY FUNCTIONS AND MONETARY FUNCTIONS

ELT: 12

Basis of the table

This table is based on the mortality of the male population of England and Wales in the years 1960–62. The method of construction is explained in the Registrar-General's Decennial Supplement 1961, England and Wales, Life Table.

The functions have mainly been taken from the tables prepared, under the direction of Mr. W. T. L. Barnard, F.I.A., for the Industrial Life Offices' Association and therefore incorporate some slight modifications of the figures in the Registrar General's Decennial Supplement.

The value of μ_0 cannot be obtained from annual data and no value has been included in the table.

ENGLISH LIFE TABLE No. 12—MALES

Age x	l_x	d_x	p_x	q_x	μ_x	e_x	Age x
0	100 000	2 449	·975 51	·024 49		68·09	0
1	97 551	153	·998 43	·001 57	·002 10	68·80	1
2	97 398	96	·999 01	·000 99	·001 34	67·90	2
3	97 302	67	·999 31	·000 69	·000 79	66·97	3
4	97 235	60	·999 38	·000 62	·000 63	66·02	4
5	97 175	55	·999 43	·000 57	·000 59	65·06	5
6	97 120	51	·999 48	·000 52	·000 54	64·09	6
7	97 069	47	·999 52	·000 48	·000 50	63·13	7
8	97 022	43	·999 56	·000 44	·000 46	62·16	8
9	96 979	40	·999 59	·000 41	·000 43	61·18	9
10	96 939	38	·999 61	·000 39	·000 40	60·21	10
11	96 901	37	·999 62	·000 38	·000 39	59·23	11
12	96 864	37	·999 62	·000 38	·000 38	58·25	12
13	96 827	40	·999 59	·000 41	·000 39	57·28	13
14	96 787	45	·999 53	·000 47	·000 43	56·30	14
15	96 742	57	·999 41	·000 59	·000 52	55·33	15
16	96 685	75	·999 22	·000 78	·000 67	54·36	16
17	96 610	96	·999 01	·000 99	·000 89	53·40	17
18	96 514	108	·998 88	·001 12	·001 07	52·45	18
19	96 406	113	·998 83	·001 17	·001 15	51·51	19
20	96 293	115	·998 81	·001 19	·001 19	50·57	20
21	96 178	113	·998 82	·001 18	·001 19	49·63	21
22	96 065	110	·998 86	·001 14	·001 16	48·69	22
23	95 955	104	·998 92	·001 08	·001 12	47·74	23
24	95 851	98	·998 98	·001 02	·001 05	46·80	24
25	95 753	95	·999 01	·000 99	·001 00	45·84	25
26	95 658	94	·999 02	·000 98	·000 98	44·89	26
27	95 564	96	·999 00	·001 00	·000 99	43·93	27
28	95 468	99	·998 96	·001 04	·001 02	42·98	28
29	95 369	104	·998 91	·001 09	·001 06	42·02	29
30	95 265	110	·998 85	·001 15	·001 12	41·06	30
31	95 155	115	·998 79	·001 21	·001 18	40·11	31
32	95 040	122	·998 72	·001 28	·001 25	39·16	32
33	94 918	129	·998 64	·001 36	·001 32	38·21	33
34	94 789	137	·998 55	·001 45	·001 40	37·26	34
35	94 652	147	·998 45	·001 55	·001 50	36·31	35
36	94 505	158	·998 33	·001 67	·001 61	35·37	36
37	94 347	171	·998 19	·001 81	·001 74	34·43	37
38	94 176	185	·998 04	·001 96	·001 89	33·49	38
39	93 991	201	·997 86	·002 14	·002 05	32·55	39
40	93 790	220	·997 65	·002 35	·002 24	31·62	40
41	93 570	242	·997 41	·002 59	·002 46	30·70	41
42	93 328	268	·997 13	·002 87	·002 73	29·77	42
43	93 060	297	·996 81	·003 19	·003 03	28·86	43
44	92 763	330	·996 44	·003 56	·003 37	27·95	44
45	92 433	369	·996 01	·003 99	·003 77	27·05	45
46	92 064	412	·995 52	·004 48	·004 23	26·15	46
47	91 652	463	·994 95	·005 05	·004 76	25·27	47
48	91 189	520	·994 30	·005 70	·005 38	24·40	48
49	90 669	584	·993 56	·006 44	·006 07	23·53	49
50	90 085	656	·992 72	·007 28	·006 87	22·68	50
51	89 429	736	·991 77	·008 23	·007 77	21·84	51
52	88 693	825	·990 70	·009 30	·008 78	21·02	52
53	87 868	923	·989 49	·010 51	·009 93	20·21	53
54	86 945	1 029	·988 16	·011 84	·011 21	19·42	54

ENGLISH LIFE TABLE No. 12—MALES

Age x	l_x	d_x	p_x	q_x	μ_x	e_x	Age x
55	85 916	1 144	·986 69	·013 31	·012 63	18·65	55
56	84 772	1 265	·985 08	·014 92	·014 20	17·89	56
57	83 507	1 393	·983 32	·016 68	·015 90	17·16	57
58	82 114	1 526	·981 41	·018 59	·017 76	16·44	58
59	80 588	1 664	·979 35	·020 65	·019 78	15·74	59
60	78 924	1 805	·977 13	·022 87	·021 97	15·06	60
61	77 119	1 947	·974 75	·025 25	·024 33	14·40	61
62	75 172	2 088	·972 22	·027 78	·026 84	13·76	62
63	73 084	2 228	·969 51	·030 49	·029 53	13·14	63
64	70 856	2 366	·966 61	·033 39	·032 43	12·54	64
65	68 490	2 499	·963 52	·036 48	·035 53	11·95	65
66	65 991	2 625	·960 22	·039 78	·038 84	11·39	66
67	63 366	2 745	·956 68	·043 32	·042 39	10·84	67
68	60 621	2 856	·952 88	·047 12	·046 22	10·31	68
69	57 765	2 959	·948 78	·051 22	·050 36	9·79	69
70	54 806	3 051	·944 34	·055 66	·054 87	9·29	70
71	51 755	3 130	·939 53	·060 47	·059 76	8·81	71
72	48 625	3 195	·934 30	·065 70	·065 09	8·35	72
73	45 430	3 243	·928 61	·071 39	·070 92	7·90	73
74	42 187	3 273	·922 41	·077 59	·077 30	7·47	74
75	38 914	3 282	·915 66	·084 34	·084 32	7·05	75
76	35 632	3 266	·908 33	·091 67	·092 00	6·66	76
77	32 366	3 225	·900 37	·099 63	·100 42	6·28	77
78	29 141	3 154	·891 76	·108 24	·109 62	5·92	78
79	25 987	3 054	·882 48	·117 52	·119 64	5·57	79
80	22 933	2 923	·872 53	·127 47	·130 53	5·25	80
81	20 010	2 763	·861 92	·138 08	·142 31	4·94	81
82	17 247	2 576	·850 66	·149 34	·155 03	4·66	82
83	14 671	2 365	·838 78	·161 22	·168 63	4·39	83
84	12 306	2 137	·826 34	·173 66	·183 11	4·14	84
85	10 169	1 897·4	·813 41	·186 59	·198 49	3·90	85
86	8 271·6	1 654·1	·800 03	·199 97	·214 68	3·68	86
87	6 617·5	1 414·1	·786 31	·213 69	·231 65	3·48	87
88	5 203·4	1 184·6	·772 35	·227 65	·249 28	3·30	88
89	4 018·8	971·6	·758 23	·241 77	·267 48	3·13	89
90	3 047·2	779·9	·744 07	·255 93	·286 16	2·97	90
91	2 267·3	612·2	·729 97	·270 03	·305 18	2·83	91
92	1 655·1	470·0	·716 04	·283 96	·324 39	2·70	92
93	1 185·1	352·73	·702 36	·297 64	·343 72	2·58	93
94	832·37	258·83	·689 04	·310 96	·362 94	2·47	94
95	573·54	185·74	·676 15	·323 85	·381 97	2·38	95
96	387·80	130·39	·663 77	·336 23	·400 66	2·29	96
97	257·41	89·59	·651 94	·348 06	·418 86	2·21	97
98	167·82	60·30	·640 71	·359 29	·436 51	2·14	98
99	107·52	39·771	·630 11	·369 89	·453 54	2·07	99
100	67·749	25·733	·620 17	·379 83	·469 72	2·00	100
101	42·016	16·349	·610 88	·389 12	·485 12		101
102	25·667	10·209	·602 24	·397 76	·499 67		102
103	15·458	6·272 1	·594 25	·405 75	·513 35		103
104	9·185 9	3·794 9	·586 88	·413 12			104
105	5·391 0						105

ENGLISH LIFE TABLE No. 12—MALES

4 per cent

Age x	D_x	$\overline{N}_x$	$\overline{C}_x$	$\overline{M}_x$	$\overline{R}_x$	Age x
1	93 799	2 190 962	144·3	7 867·9	441 230·1	1
2	90 050	2 099 056	87·4	7 723·6	433 362·2	2
3	86 501	2 010 796	58·2	7 636·2	425 638·6	3
4	83 117	1 925 999	50·2	7 578·0	418 002·4	4
5	79 871	1 844 516	45·0	7 527·8	410 424·4	5
6	76 755	1 766 215	39·6	7 482·8	402 896·6	6
7	73 764	1 690 965	34·6	7 443·2	395 413·8	7
8	70 893	1 618 645	31·0	7 408·6	387 970·6	8
9	68 136	1 549 140	26·9	7 377·6	380 562·0	9
10	65 489	1 482 337	25·7	7 350·7	373 184·4	10
11	62 945	1 418 129	23·5	7 325·0	365 833·7	11
12	60 501	1 356 414	22·5	7 301·5	358 508·7	12
13	58 152	1 297 095	23·8	7 279·0	351 207·2	13
14	55 892	1 240 080	25·8	7 255·2	343 928·2	14
15	53 717	1 185 282	30·5	7 229·4	336 673·0	15
16	51 621	1 132 620	39·3	7 198·9	329 443·6	16
17	49 597	1 082 016	48·4	7 159·6	322 244·7	17
18	47 642	1 033 403	52·6	7 111·2	315 085·1	18
19	45 758	986 708	52·1	7 058·6	307 973·9	19
20	43 947	941 862	51·7	7 006·5	300 915·3	20
21	42 206	898 791	48·6	6 954·8	293 908·8	21
22	40 535	857 426	45·9	6 906·2	286 954·0	22
23	38 931	817 699	40·4	6 860·3	280 047·8	23
24	37 394	779 541	37·6	6 819·9	273 187·5	24
25	35 919	742 891	35·2	6 782·3	266 367·6	25
26	34 503	707 684	33·6	6 747·1	259 585·3	26
27	33 143	673 866	32·9	6 713·5	252 838·2	27
28	31 836	641 381	32·1	6 680·6	246 124·7	28
29	30 580	610 176	32·5	6 648·5	239 444·1	29
30	29 372	580 204	33·0	6 616·0	232 795·6	30
31	28 210	551 417	33·6	6 583·0	226 179·6	31
32	27 092	523 770	34·7	6 549·4	219 596·6	32
33	26 016	497 219	34·0	6 514·7	213 047·2	33
34	24 982	471 723	35·9	6 480·7	206 532·5	34
35	23 986	447 243	36·1	6 444·8	200 051·8	35
36	23 028	423 738	38·1	6 408·7	193 607·0	36
37	22 105	401 175	39·5	6 370·6	187 198·3	37
38	21 216	379 517	40·8	6 331·1	180 827·7	38
39	20 360	358 731	42·7	6 290·3	174 496·6	39
40	19 535	338 786	44·5	6 247·6	168 206·3	40
41	18 740	319 650	47·1	6 203·1	161 958·7	41
42	17 973	301 296	50·8	6 156·0	155 755·6	42
43	17 232	283 696	54·2	6 105·2	149 599·6	43
44	16 516	266 824	57·9	6 051·0	143 494·4	44
45	15 824	250 656	61·6	5 993·1	137 443·4	45
46	15 155	235 168	66·3	5 931·5	131 450·3	46
47	14 507	220 339	72·5	5 865·2	125 518·8	47
48	13 878	206 148	76·7	5 792·7	119 653·6	48
49	13 269	192 576	84·2	5 716·0	113 860·9	49
50	12 676	179 605	90·2	5 631·8	108 144·9	50

4 per cent

Age x	D_x	$\overline{N}_x$	$\overline{C}_x$	$\overline{M}_x$	$\overline{R}_x$	Age x
51	12 100	167 218	97·5	5 541·6	102 513·1	51
52	11 539	155 400	105·2	5 444·1	96 971·5	52
53	10 992	144 136	113·4	5 338·9	91 527·4	53
54	10 458	133 412	121·4	5 225·5	86 188·5	54
55	9 936·7	123 216	129·7	5 104·1	80 963·0	55
56	9 427·3	113 535	138·0	4 974·4	75 858·9	56
57	8 929·4	104 358	146·0	4 836·4	70 884·5	57
58	8 442·7	95 672·6	153·8	4 690·4	66 048·1	58
59	7 967·2	87 468·5	161·3	4 536·6	61 357·7	59
60	7 502·5	79 734·6	168·2	4 375·3	56 821·1	60
61	7 049·0	72 459·7	174·5	4 207·1	52 445·8	61
62	6 606·8	65 632·8	179·9	4 032·6	48 238·7	62
63	6 176·2	59 242·3	184·6	3 852·7	44 206·1	63
64	5 757·6	53 276·4	188·5	3 668·1	40 353·4	64
65	5 351·3	47 723·0	191·5	3 479·6	36 685·3	65
66	4 957·7	42 569·5	193·4	3 288·1	33 205·7	66
67	4 577·4	37 803·1	194·4	3 094·7	29 917·6	67
68	4 210·7	33 410·1	194·5	2 900·3	26 822·9	68
69	3 858·0	29 376·9	193·8	2 705·8	23 922·6	69
70	3 519·6	25 689·3	192·1	2 512·0	21 216·8	70
71	3 195·8	22 332·8	189·5	2 319·9	18 704·8	71
72	2 887·1	19 292·6	186·0	2 130·4	16 384·9	72
73	2 593·6	16 553·6	181·5	1 944·4	14 254·5	73
74	2 315·9	14 100·1	176·31	1 762·9	12 310·1	74
75	2 054·0	11 916·5	169·87	1 586·59	10 547·2	75
76	1 808·4	9 986·67	162·52	1 416·72	8 960·61	76
77	1 579·5	8 294·09	154·37	1 254·20	7 543·89	77
78	1 367·4	6 822·05	145·14	1 099·83	6 289·69	78
79	1 172·5	5 553·50	135·12	954·69	5 189·86	79
80	994·93	4 471·22	124·38	819·57	4 235·17	80
81	834·73	3 557·84	113·05	695·19	3 415·60	81
82	691·80	2 796·00	101·35	582·14	2 720·41	82
83	565·84	2 168·59	89·48	480·79	2 138·27	83
84	456·37	1 658·82	77·751	391·31	1 657·48	84
85	362·61	1 250·61	66·372	313·559	1 266·17	85
86	283·61	928·677	55·642	247·187	952·611	86
87	218·17	678·864	45·745	191·545	705·424	87
88	164·95	488·263	36·846	145·800	513·879	88
89	122·50	345·372	29·064	108·954	368·079	89
90	89·310	240·177	22·432	79·890	259·125	90
91	63·896	164·163	16·933 9	57·458	179·235	91
92	44·849	110·265	12·500 2	40·524 1	121·777	92
93	30·878	72·774 5	9·020 9	28·023 9	81·252 9	93
94	20·854	47·194 8	6·365 4	19·003 0	53·229 0	94
95	13·817	30·073 7	4·393 4	12·637 6	34·226 0	95
96	8·982 7	18·829 7	2·965 2	8·244 2	21·588 4	96
97	5·733 1	11·582 3	1·959 3	5·279 0	13·344 2	97
98	3·594 0	6·995 1	1·267 9	3·319 7	8·065 2	98
99	2·214 1	4·142 6	·804 4	2·051 8	4·745 5	99
100	1·341 4	2·398 9	·500 3	1·247 4	2·693 7	100

4 per cent

Age x	$\bar{a}_x$	$\bar{A}_x$	$\overline{P}(\bar{A}_x)$	$\bar{a}_{x:\overline{85-x}\rceil}$	Age x	$\bar{a}_x$	$\bar{A}_x$	$\overline{P}(\bar{A}_x)$	$\bar{a}_{x:\overline{85-x}\rceil}$
1	23·358	·083 88	·003 59	23·345	51	13·820	·457 98	·033 14	13·716
2	23·310	·085 77	·003 68	23·296	52	13·467	·471 80	·035 03	13·359
3	23·246	·088 28	·003 80	23·231	53	13·113	·485 71	·037 04	12·999
4	23·172	·091 17	·003 93	23·157	54	12·757	·499 66	·039 17	12·637
5	23·094	·094 25	·004 08	23·078	55	12·400	·513 66	·041 42	12·274
6	23·011	·097 49	·004 24	22·995	56	12·043	·527 66	·043 81	11·911
7	22·924	·100 91	·004 40	22·907	57	11·687	·541 63	·046 34	11·547
8	22·832	·104 50	·004 58	22·815	58	11·332	·555 55	·049 03	11·184
9	22·736	·108 28	·004 76	22·718	59	10·979	·569 41	·051 87	10·822
10	22·635	·112 24	·004 96	22·616	60	10·628	·583 17	·054 87	10·461
11	22·530	·116 37	·005 17	22·510	61	10·279	·596 83	·058 06	10·102
12	22·420	·120 68	·005 38	22·399	62	9·934	·610 38	·061 44	9·745
13	22·305	·125 17	·005 61	22·284	63	9·592	·623 79	·065 03	9·390
14	22·187	·129 81	·005 85	22·165	64	9·253	·637 08	·068 85	9·036
15	22·065	·134 58	·006 10	22·042	65	8·918	·650 23	·072 91	8·684
16	21·941	·139 46	·006 36	21·917	66	8·587	·663 23	·077 24	8·334
17	21·816	·144 36	·006 62	21·791	67	8·259	·676 09	·081 86	7·985
18	21·691	·149 26	·006 88	21·665	68	7·935	·688 80	·086 81	7·638
19	21·564	·154 26	·007 15	21·536	69	7·615	·701 35	·092 11	7·290
20	21·432	·159 43	·007 44	21·403	70	7·299	·713 73	·097 79	6·944
21	21·295	·164 78	·007 74	21·266	71	6·988	·725 92	·103 88	6·597
22	21·153	·170 38	·008 05	21·122	72	6·682	·737 91	·110 43	6·249
23	21·004	·176 22	·008 39	20·972	73	6·382	·749 68	·117 46	5·900
24	20·847	·182 38	·008 75	20·813	74	6·088	·761 21	·125 03	5·548
25	20·682	·188 82	·009 13	20·648	75	5·802	·772 46	·133 15	5·193
26	20·511	·195 55	·009 53	20·475	76	5·522	·783 41	·141 86	4·831
27	20·332	·202 56	·009 96	20·294	77	5·251	·794 05	·151 22	4·459
28	20·146	·209 84	·010 42	20·107	78	4·989	·804 33	·161 22	4·074
29	19·953	·217 41	·010 90	19·913	79	4·736	·814 23	·171 91	3·670
30	19·754	·225 25	·011 40	19·711	80	4·494	·823 74	·183 30	3·237
31	19·547	·233 36	·011 94	19·503	81	4·262	·832 83	·195 40	2·764
32	19·333	·241 75	·012 50	19·287	82	4·042	·841 48	·208 20	2·234
33	19·112	·250 41	·013 10	19·064	83	3·833	·849 69	·221 70	1·622
34	18·883	·259 41	·013 74	18·832	84	3·635	·857 44	·235 90	·894
35	18·646	·268 69	·014 41	18·594	85	3·449	·864 73	·250 73	
36	18·401	·278 30	·015 12	18·347	86	3·274	·871 57	·266 17	
37	18·149	·288 20	·015 88	18·092	87	3·112	·877 96	·282 16	
38	17·888	·298 41	·016 68	17·829	88	2·960	·883 90	·298 61	
39	17·619	·308 95	·017 53	17·558	89	2·819	·889 42	·315 47	
40	17·343	·319 81	·018 44	17·278	90	2·689	·894 53	·332 63	
41	17·057	·331 01	·019 41	16·990	91	2·569	·899 23	·350 00	
42	16·764	·342 51	·020 43	16·694	92	2·459	·903 57	·367 52	
43	16·463	·354 30	·021 52	16·391	93	2·357	·907 56	·385 08	
44	16·155	·366 37	·022 68	16·080	94	2·263	·911 24	·402 65	
45	15·840	·378 73	·023 91	15·761	95	2·177	·914 63	·420 22	
46	15·518	·391 39	·025 22	15·435	96	2·096	·917 79	·437 83	
47	15·188	·404 30	·026 62	15·102	97	2·020	·920 76	·455 77	
48	14·854	·417 40	·028 10	14·764	98	1·946	·923 66	·474 57	
49	14·513	·430 78	·029 68	14·419	99	1·871	·926 62	·495 25	
50	14·169	·444 29	·031 36	14·070	100	1·788	·929 86	·519 95	

ENGLISH LIFE TABLE No. 12—MALES

6 per cent

Age x	$\bar{a}_x$	$\bar{A}_x$	$\bar{P}(\bar{A}_x)$	$\bar{a}_{x:\overline{85-x}\rceil}$	Age x	$\bar{a}_x$	$\bar{A}_x$	$\bar{P}(\bar{A}_x)$	$\bar{a}_{x:\overline{85-x}\rceil}$
1	16·607	·032 32	·001 95	16·605	51	11·487	·330 66	·028 79	11·436
2	16·601	·032 70	·001 97	16·598	52	11·243	·344 87	·030 67	11·189
3	16·584	·033 68	·002 03	16·581	53	10·995	·359 34	·032 68	10·936
4	16·561	·035 01	·002 11	16·558	54	10·743	·374 02	·034 82	10·680
5	16·535	·036 50	·002 21	16·532	55	10·488	·388 88	·037 08	10·421
6	16·507	·038 13	·002 31	16·504	56	10·230	·403 88	·039 48	10·158
7	16·477	·039 89	·002 42	16·474	57	9·971	·419 01	·042 02	9·893
8	16·444	·041 81	·002 54	16·440	58	9·710	·434 23	·044 72	9·626
9	16·409	·043 89	·002 67	16·405	59	9·447	·449 52	·047 58	9·357
10	16·371	·046 10	·002 82	16·366	60	9·185	·464 82	·050 61	9·087
11	16·330	·048 49	·002 97	16·325	61	8·921	·480 16	·053 82	8·815
12	16·286	·051 02	·003 13	16·281	62	8·658	·495 48	·057 23	8·543
13	16·240	·053 71	·003 31	16·235	63	8·395	·510 82	·060 85	8·269
14	16·192	·056 54	·003 49	16·186	64	8·133	·526 12	·064 69	7·995
15	16·141	·059 47	·003 68	16·135	65	7·871	·541 39	·068 79	7·720
16	16·089	·062 48	·003 88	16·083	66	7·609	·556 63	·073 15	7·443
17	16·038	·065 49	·004 08	16·031	67	7·349	·571 81	·077 81	7·165
18	15·987	·068 45	·004 28	15·980	68	7·089	·586 95	·082 80	6·885
19	15·935	·071 47	·004 49	15·928	69	6·830	·602 03	·088 15	6·604
20	15·880	·074 67	·004 70	15·873	70	6·573	·617 01	·093 87	6·320
21	15·823	·077 99	·004 93	15·815	71	6·317	·631 90	·100 03	6·034
22	15·762	·081 58	·005 18	15·753	72	6·064	·646 65	·106 63	5·744
23	15·696	·085 39	·005 44	15·687	73	5·814	·661 25	·113 74	5·451
24	15·626	·089 47	·005 73	15·616	74	5·566	·675 65	·121 38	5·152
25	15·551	·093 88	·006 04	15·540	75	5·323	·689 82	·129 59	4·847
26	15·469	·098 62	·006 38	15·458	76	5·085	·703 71	·138 39	4·534
27	15·384	·103 61	·006 74	15·372	77	4·852	·717 30	·147 85	4·209
28	15·293	·108 88	·007 12	15·281	78	4·625	·730 51	·157 95	3·868
29	15·197	·114 49	·007 53	15·184	79	4·405	·743 33	·168 75	3·505
30	15·096	·120 38	·007 97	15·082	80	4·192	·755 72	·180 26	3·112
31	14·990	·126 56	·008 44	14·975	81	3·988	·767 61	·192 47	2·675
32	14·879	·133 04	·008 94	14·863	82	3·792	·779 02	·205 41	2·178
33	14·761	·139 91	·009 48	14·744	83	3·606	·789 87	·219 03	1·594
34	14·638	·147 06	·010 05	14·620	84	3·429	·800 20	·233 36	·886
35	14·507	·154 67	·010 66	14·488	85	3·262	·809 95	·248 33	
36	14·371	·162 61	·011 31	14·351	86	3·104	·819 14	·263 90	
37	14·229	·170 92	·012 01	14·207	87	2·956	·827 75	·280 01	
38	14·079	·179 64	·012 76	14·056	88	2·818	·835 80	·296 60	
39	13·923	·188 74	·013 56	13·899	89	2·689	·843 30	·313 58	
40	13·759	·198 29	·014 41	13·733	90	2·570	·850 26	·330 85	
41	13·588	·208 26	·015 33	13·560	91	2·459	·856 70	·348 36	
42	13·409	·218 65	·016 31	13·380	92	2·357	·862 65	·365 96	
43	13·223	·229 48	·017 35	13·193	93	2·263	·868 13	·383 60	
44	13·030	·240 73	·018 47	12·998	94	2·176	·873 19	·401 22	
45	12·830	·252 42	·019 67	12·795	95	2·096	·877 86	·418 82	
46	12·622	·264 51	·020 96	12·585	96	2·022	·882 21	·436 40	
47	12·408	·277 01	·022 33	12·368	97	1·951	·886 32	·454 30	
48	12·187	·289 90	·023 79	12·145	98	1·883	·890 30	·472 89	
49	11·959	·303 15	·025 35	11·914	99	1·813	·894 36	·493 29	
50	11·726	·316 75	·027 01	11·678	100	1·737	·898 81	·517 57	

SECTION III

A1967–70
MORTALITY TABLE FOR ASSURED LIVES

MORTALITY FUNCTIONS AND MONETARY FUNCTIONS

Age [x]	$l_{[x]}$	$l_{[x]+1}$	l_{x+2}	Age $x+2$
			34 489·000	0
			34 463·823	1
0	34 481·408	34 461·409	34 440·388	2
1	34 456·927	34 438·320	34 418·690	3
2	34 433·841	34 416·624	34 398·727	4
3	34 412·836	34 397·007	34 380·496	5
4	34 393·221	34 378·776	34 363·650	6
5	34 375·681	34 362·274	34 348·186	7
6	34 359·181	34 346·811	34 333·760	8
7	34 344·063	34 332·386	34 320·026	9
8	34 329·638	34 318·653	34 306·985	10
9	34 315·907	34 305·612	34 294·291	11
10	34 303·210	34 292·919	34 281·602	12
11	34 290·518	34 280·230	34 268·918	13
12	34 277·830	34 267·547	34 255·210	14
13	34 264·461	34 253·497	34 239·110	15
14	34 250·070	34 237·055	34 218·225	16
15	34 232·259	34 215·485	34 190·508	17
16	34 209·439	34 187·202	34 154·424	18
17	34 179·680	34 151·017	34 120·378	19
18	34 143·368	34 116·899	34 088·257	20
19	34 109·166	34 084·731	34 057·937	21
20	34 076·957	34 054·389	34 029·283	22
21	34 046·610	34 025·734	34 002·148	23
22	34 017·983	33 998·619	33 976·374	24
23	33 990·921	33 972·879	33 951·787	25
24	33 965·254	33 948·338	33 928·197	26
25	33 940·795	33 924·799	33 905·397	27
26	33 917·341	33 902·051	33 883·161	28
27	33 894·668	33 879·860	33 861·242	29
28	33 872·531	33 857·972	33 839·370	30
29	33 850·662	33 836·106	33 817·250	31
30	33 828·764	33 813·958	33 794·559	32
31	33 806·514	33 791·191	33 770·942	33
32	33 783·557	33 767·439	33 746·015	34
33	33 759·503	33 742 299	33 719·354	35
34	33 733·924	33 715·331	33 690·498	36
35	33 706·352	33 686 054	33 658·943	37
36	33 676·272	33 653·938	33 624·136	38
37	33 643·122	33 618·409	33 585·478	39
38	33 606·286	33 578·835	33 542·311	40
39	33 565·089	33 534·529	33 493·920	41
40	33 518·794	33 484·739	33 439·528	42
41	33 466·599	33 428·646	33 378·285	43
42	33 407·624	33 365·360	33 309·271	44
43	33 340·915	33 293·909	33 231·486	45
44	33 265·431	33 213·241	33 143·847	46
45	33 180·042	33 122·213	33 045·181	47
46	33 083·523	33 019·589	32 934·221	48
47	32 974·549	32 904·032	32 809·601	49
48	32 851·686	32 774·102	32 669·855	50
49	32 713·392	32 628·250	32 513·405	51
50	32 558·008	32 464·813	32 338·568	52
51	32 383·756	32 282·013	32 143·546	53
52	32 188·740	32 077·958	31 926·430	54

Age [x]	$l_{[x]}$	$l_{[x]+1}$	l_{x+2}	Age $x+2$
53	31 970·942	31 850·639	31 685·203	55
54	31 728·226	31 597·933	31 417·739	56
55	31 458·342	31 317·610	31 121·815	57
56	31 158·931	31 007·338	30 795·116	58
57	30 827·543	30 664·702	30 435·255	59
58	30 461·645	30 287·215	30 039·787	60
59	30 058·648	29 872·344	29 606·239	61
60	29 615·936	29 417·538	29 132·138	62
61	29 130·898	28 920·265	28 615·051	63
62	28 600·975	28 378·059	28 052·632	64
63	28 023·708	27 788·571	27 442·681	65
64	27 396·808	27 149·632	26 783·206	66
65	26 718·225	26 459·331	26 072·500	67
66	25 986·236	25 716·097	25 309·230	68
67	25 199·536	24 918·797	24 492·529	69
68	24 357·348	24 066·835	23 622·102	70
69	23 459·538	23 160·273	22 698·338	71
70	22 506·732	22 199·940	21 722·421	72
71	21 500·445	21 187·559	20 696·450	73
72	20 443·198	20 125·863	19 623·545	74
73	19 338·635	19 018·696	18 507·942	75
74	18 191·617	17 871·109	17 355·074	76
75	17 008·294	16 689·418	16 171·618	77
76	15 796·140	15 481·232	14 965·496	78
77	14 563·940	14 255·427	13 745·841	79
78	13 321·717	13 022·064	12 522·890	80
79	12 080·592	11 792·241	11 307·812	81
80	10 852·568	10 577·865	10 112·467	82
			8 949·083 6	83
			7 829·875 2	84
			6 766·592 2	85
			5 770·045 9	86
			4 849·621 9	87
			4 012·825 3	88
			3 264·894 9	89
			2 608·527 4	90
			2 043·746 4	91
			1 567·940 5	92
			1 176·078 3	93
			861·089 35	94
			614·378 01	95
			426·421 17	96
			287·388 47	97
			187·720 94	98
			118·612 37	99
			72·353 686	100
			42·523 157	101
			24·028 676	102
			13·027 677	103
			6·762 728 4	104
			3·354 093 4	105
			1·586 011 8	106
			·713 507 81	107
			·304 748 96	108
			·123 321 21	109

Age $[x]$	$d_{[x]}$	$d_{[x]+1}$	d_{x+2}	Age $x+2$
			25·176 970	0
			23·435 400	1
0	19·999 217	21·021 460	21·697 444	2
1	18·606 740	19·629 842	19·962 840	3
2	17·216 920	17·896 644	18·231 325	4
3	15·829 905	16·510 563	16·846 443	5
4	14·445 153	15·126 662	15·463 642	6
5	13·406 516	14·088 533	14·426 238	7
6	12·369 305	13·051 788	13·733 504	8
7	11·676 981	12·359 659	13·041 610	9
8	10·985 484	11·668 342	12·693 584	10
9	10·294 772	11·320 852	12·688 888	11
10	10·290 963	11·316 663	12·684 193	12
11	10·287 155	11·312 476	13·707 567	13
12	10·283 349	12·336 317	16·099 949	14
13	10·964 628	14·386 469	20·885 857	15
14	13·015 027	18·830 380	27·716 762	16
15	16·773 807	24·977 304	36·083 978	17
16	22·236 135	32·778 690	34·045 471	18
17	28·662 738	30·638 927	32·120 924	19
18	26·468 621	28·641 478	30·320 482	20
19	24·434 783	26·794 348	28·654 305	21
20	22·568 487	25·106 258	27·134 610	22
21	20·876 020	23·586 299	25·773 968	23
22	19·364 397	22·244 956	24·587 343	24
23	18·042 041	21·092 742	23·590 041	25
24	16·916 055	20·140 870	22·800 087	26
25	15·995 957	19·402 610	22·235 837	27
26	15·289 937	18·890 223	21·918 678	28
27	14·807 903	18·618 338	21·871 653	29
28	14·559 430	18·601 570	22·120 120	30
29	14·555 107	18·856 185	22·691 713	31
30	14·805 835	19·399 406	23·616 313	32
31	15·323 141	20·249 033	24·927 346	33
32	16·118 473	21·424 089	26·660 702	34
33	17·204 181	22·945 101	28·856 012	35
34	18·593 127	24·833 027	31·555 531	36
35	20·298 639	27·110 873	34·806 376	37
36	22·334 104	29·801 908	38·658 678	38
37	24·713 228	32·931 249	43·166 743	39
38	27·450 286	36·524 371	48·390 486	40
39	30·559 671	40·608 638	54·392 787	41
40	34·055 430	45·211 429	61·242 823	42
41	37·952 462	50·361 593	69·013 943	43
42	42·264 654	56·088 838	77·784 809	44
43	47·006 022	62·422 750	87·639 072	45
44	52·189 802	69·394 085	98·666 249	46
45	57·828 832	77·032 663	110·960 10	47
46	63·934 240	85·368 516	124·619 14	48
47	70·516 402	94·430 954	139·746 59	49
48	77·583 527	104·247 54	156·449 40	50
49	85·141 837	114·844 59	174·837 59	51
50	93·195 017	126·244 62	195·022 26	52
51	101·742 64	138·467 56	217·115 51	53
52	110·781 41	151·528 26	241·227 17	54

Age [x]	$d_{[x]}$	$d_{[x]+1}$	d_{x+2}	Age $x+2$
53	120·302 82	165·436 36	267·463 67	55
54	130·293 23	180·193 85	295·924 31	56
55	140·732 67	195·794 56	326·698 76	57
56	151·593 50	212·221 66	359·861 26	58
57	162·840 64	229·447 10	395·467 49	59
58	174·429 47	247·427 77	433·548 03	60
59	186·304 10	266·104 33	474·101 29	61
60	198·398 34	285·399 54	517·087 29	62
61	210·633 00	305·214 36	562·418 52	63
62	222·915 14	325·427 10	609·951 19	64
63	235·137 12	345·889 62	659·475 34	65
64	247·176 47	366·425 82	710·705 76	66
65	258·894 80	386·830 65	763·270 09	67
66	270·138 61	406·867 23	816·701 01	68
67	280·738 96	426·267 92	870·426 76	69
68	290·512 52	444·733 22	923·764 51	70
69	299·265 11	461·934 88	975·916 62	71
70	306·792 64	477·518 48	1 025·970 8	72
71	312·885 65	491·108 98	1 072·905 6	73
72	317·335 47	502·317 98	1 115·602 8	74
73	319·939 15	510·753 92	1 152·867 3	75
74	320·507 91	516·034 34	1 183·456 9	76
75	318·875 23	517·800 72	1 206·121 8	77
76	314·907 42	515·736 51	1 219·654 8	78
77	308·512 88	509·585 74	1 222·951 4	79
78	299·652 97	499·174 12	1 215·077 8	80
79	288·351 66	484·429 02	1 195·345 2	81
80	274·703 14	465·398 68	1 163·383 0	82
			1 119·208 5	83
			1 063·283 0	84
			996·546 35	85
			920·423 98	86
			836·796 58	87
			747·930 36	88
			656·367 49	89
			564·781 02	90
			475·805 96	91
			391·862 19	92
			314·988 93	93
			246·711 35	94
			187·956 84	95
			139·032 70	96
			99·667 530	97
			69·108 564	98
			46·258 687	99
			29·830 529	100
			18·494 482	101
			11·000 998	102
			6·264 948 9	103
			3·408 635 0	104
			1·768 081 6	105
			·872 503 97	106
			·408 758 86	107
			·181 427 75	108
			·076 136 58	109

A1967–70 MORTALITY TABLE

Age $[x]$	$q_{[x]}$	$q_{[x]+1}$	q_{x+2}	Age $x+2$
			·000 730 00	0
			·000 680 00	1
0	·000 580 00	·000 610 00	·000 630 00	2
1	·000 540 00	·000 570 00	·000 580 00	3
2	·000 500 00	·000 520 00	·000 530 00	4
3	·000 460 00	·000 480 00	·000 490 00	5
4	·000 420 00	·000 440 00	·000 450 00	6
5	·000 390 00	·000 410 00	·000 420 00	7
6	·000 360 00	·000 380 00	·000 400 00	8
7	·000 340 00	·000 360 00	·000 380 00	9
8	·000 320 00	·000 340 00	·000 370 00	10
9	·000 300 00	·000 330 00	·000 370 00	11
10	·000 300 00	·000 330 00	·000 370 00	12
11	·000 300 00	·000 330 00	·000 400 00	13
12	·000 300 00	·000 360 00	·000 470 00	14
13	·000 320 00	·000 420 00	·000 610 00	15
14	·000 380 00	·000 550 00	·000 810 00	16
15	·000 490 00	·000 730 00	·001 055 38	17
16	·000 650 00	·000 958 80	·000 996 81	18
17	·000 838 59	·000 897 16	·000 941 40	19
18	·000 775 22	·000 839 51	·000 889 47	20
19	·000 716 37	·000 786 11	·000 841 34	21
20	·000 662 28	·000 737 24	·000 797 39	22
21	·000 613 16	·000 693 19	·000 758 01	23
22	·000 569 24	·000 654 29	·000 723 66	24
23	·000 530 79	·000 620 87	·000 694 81	25
24	·000 498 04	·000 593 28	·000 672 01	26
25	·000 471 29	·000 571 93	·000 655 82	27
26	·000 450 80	·000 557 20	·000 646 89	28
27	·000 436 88	·000 549 54	·000 645 92	29
28	·000 429 83	·000 549 40	·000 653 68	30
29	·000 429 98	·000 557 28	·000 671 01	31
30	·000 437 67	·000 573 71	·000 698 82	32
31	·000 453 26	·000 599 24	·000 738 13	33
32	·000 477 11	·000 634 46	·000 790 04	34
33	·000 509 61	·000 680 01	·000 855 77	35
34	·000 551 17	·000 736 55	·000 936 63	36
35	·000 602 22	·000 804 81	·001 034 09	37
36	·000 663 20	·000 885 54	·001 149 73	38
37	·000 734 57	·000 979 56	·001 285 28	39
38	·000 816 82	·001 087 72	·001 442 67	40
39	·000 910 46	·001 210 95	·001 623 96	41
40	·001 016 01	·001 350 21	·001 831 45	42
41	·001 134 04	·001 506 54	·002 067 63	43
42	·001 265 12	·001 681 05	·002 335 23	44
43	·001 409 86	·001 874 90	·002 637 23	45
44	·001 568 89	·002 089 35	·002 976 91	46
45	·001 742 88	·002 325 71	·003 357 83	47
46	·001 932 51	·002 585 39	·003 783 88	48
47	·002 138 51	·002 869 89	·004 259 32	49
48	·002 361 63	·003 180 79	·004 788 80	50
49	·002 602 66	·003 519 79	·005 377 40	51
50	·002 862 43	·003 888 66	·006 030 64	52
51	·003 141 78	·004 289 31	·006 754 56	53
52	·003 441 62	·004 723 75	·007 555 72	54

A1967–70 MORTALITY TABLE

Age [x]	$q_{[x]}$	$q_{[x]+1}$	q_{x+2}	Age $x+2$
53	·003 762 88	·005 194 13	·008 441 28	55
54	·004 106 54	·005 702 71	·009 419 02	56
55	·004 473 62	·006 251 90	·010 497 42	57
56	·004 865 17	·006 844 24	·011 685 66	58
57	·005 282 31	·007 482 45	·012 993 73	59
58	·005 726 20	·008 169 38	·014 432 46	60
59	·006 198 02	·008 908 05	·016 013 56	61
60	·006 699 04	·009 701 68	·017 749 72	62
61	·007 230 57	·010 553 65	·019 654 64	63
62	·007 793 97	·011 467 56	·021 743 10	64
63	·008 390 65	·012 447 19	·024 031 01	65
64	·009 022 09	·013 496 53	·026 535 50	66
65	·009 689 82	·014 619 82	·029 274 91	67
66	·010 395 45	·015 821 50	·032 268 90	68
67	·011 140 64	·017 106 28	·035 538 46	69
68	·011 927 10	·018 479 09	·039 105 94	70
69	·012 756 65	·019 945 14	·042 995 07	71
70	·013 631 15	·021 509 90	·047 230 96	72
71	·014 552 52	·023 179 12	·051 840 08	73
72	·015 522 79	·024 958 83	·056 850 22	74
73	·016 544 04	·026 855 36	·062 290 41	75
74	·017 618 44	·028 875 34	·068 190 83	76
75	·018 748 22	·031 025 69	·074 582 63	77
76	·019 935 72	·033 313 66	·081 497 79	78
77	·021 183 34	·035 746 79	·088 968 83	79
78	·022 493 57	·038 332 95	·097 028 55	80
79	·023 869 00	·041 080 32	·105 709 68	81
80	·025 312 27	·043 997 41	·115 044 43	82
			·125 064 03	83
			·135 798 20	84
			·147 274 48	85
			·159 517 62	86
			·172 548 83	87
			·186 384 98	88
			·201 037 86	89
			·216 513 35	90
			·232 810 66	91
			·249 921 60	92
			·267 829 90	93
			·286 510 74	94
			·305 930 28	95
			·326 045 50	96
			·346 804 21	97
			·368 145 21	98
			·389 998 83	99
			·412 287 62	100
			·434 927 29	101
			·457 827 91	102
			·480 895 31	103
			·504 032 51	104
			·527 141 44	105
			·550 124 52	106
			·572 886 31	107
			·595 335 10	108
			·617 384 30	109

A1967–70 MORTALITY TABLE

Age [x]	$\mu_{[x]}$	$\mu_{[x]+1}$	μ_{x+2}	Age $x+2$
			·000 755 28	0
			·000 705 25	1
0	·000 565 16	·000 595 18	·000 655 21	2
1	·000 525 14	·000 555 15	·000 605 18	3
2	·000 490 12	·000 510 13	·000 555 15	4
3	·000 450 10	·000 470 11	·000 510 13	5
4	·000 410 08	·000 430 09	·000 470 11	6
5	·000 380 07	·000 400 08	·000 435 09	7
6	·000 350 06	·000 370 07	·000 410 08	8
7	·000 330 05	·000 350 06	·000 390 08	9
8	·000 310 05	·000 330 05	·000 375 07	10
9	·000 285 04	·000 315 05	·000 370 07	11
10	·000 285 04	·000 315 05	·000 370 07	12
11	·000 285 04	·000 315 05	·000 385 07	13
12	·000 270 04	·000 330 05	·000 435 10	14
13	·000 270 03	·000 370 07	·000 540 15	15
14	·000 295 03	·000 465 11	·000 710 26	16
15	·000 370 05	·000 610 19	·001 086 23	17
16	·000 495 69	·000 804 73	·001 026 12	18
17	·000 809 63	·000 868 25	·000 969 02	19
18	·000 743 35	·000 807 69	·000 915 25	20
19	·000 681 74	·000 751 53	·000 865 12	21
20	·000 624 99	·000 700 00	·000 818 97	22
21	·000 573 30	·000 653 39	·000 777 21	23
22	·000 526 86	·000 611 95	·000 740 24	24
23	·000 485 86	·000 575 99	·000 708 53	25
24	·000 450 52	·000 545 81	·000 682 59	26
25	·000 421 05	·000 521 74	·000 662 98	27
26	·000 397 67	·000 504 13	·000 650 30	28
27	·000 380 61	·000 493 33	·000 645 23	29
28	·000 370 11	·000 489 74	·000 648 49	30
29	·000 366 39	·000 493 76	·000 660 89	31
30	·000 369 71	·000 505 82	·000 683 32	32
31	·000 380 33	·000 526 39	·000 716 73	33
32	·000 398 50	·000 555 94	·000 762 18	34
33	·000 424 49	·000 594 99	·000 820 84	35
34	·000 458 57	·000 644 07	·000 893 97	36
35	·000 501 04	·000 703 77	·000 982 96	37
36	·000 552 16	·000 774 68	·001 089 34	38
37	·000 612 24	·000 857 44	·001 214 77	39
38	·000 681 57	·000 952 73	·001 361 10	40
39	·000 760 47	·001 061 28	·001 530 32	41
40	·000 849 23	·001 183 82	·001 724 63	42
41	·000 948 19	·001 321 18	·001 946 44	43
42	·001 057 65	·001 474 19	·002 198 37	44
43	·001 177 95	·001 643 76	·002 483 32	45
44	·001 309 42	·001 830 83	·002 804 44	46
45	·001 452 39	·002 036 41	·003 165 19	47
46	·001 607 20	·002 261 56	·003 569 35	48
47	·001 774 19	·002 507 41	·004 021 07	49
48	·001 953 71	·002 775 14	·004 524 87	50
49	·002 146 09	·003 066 03	·005 085 72	51
50	·002 351 68	·003 381 38	·005 709 03	52
51	·002 570 82	·003 722 63	·006 400 73	53
52	·002 803 86	·004 091 25	·007 167 31	54

A1967–70 MORTALITY TABLE

Age $[x]$	$\mu_{[x]}$	$\mu_{[x]+1}$	μ_{x+2}	Age $x+2$
53	·003 051 14	·004 488 82	·008 015 84	55
54	·003 312 98	·004 917 01	·008 954 06	56
55	·003 589 72	·005 377 59	·009 990 42	57
56	·003 881 68	·005 872 41	·011 134 15	58
57	·004 189 18	·006 403 45	·012 395 32	59
58	·004 512 52	·006 972 79	·013 784 90	60
59	·004 851 98	·007 582 64	·015 314 87	61
60	·005 207 85	·008 235 31	·016 998 26	62
61	·005 580 39	·008 933 29	·018 849 29	63
62	·005 969 84	·009 679 16	·020 883 40	64
63	·006 376 42	·010 475 67	·023 117 42	65
64	·006 800 33	·011 325 73	·025 569 59	66
65	·007 241 74	·012 232 41	·028 259 77	67
66	·007 700 79	·013 198 93	·031 209 44	68
67	·008 177 60	·014 228 72	·034 441 92	69
68	·008 672 23	·015 325 38	·037 982 42	70
69	·009 184 71	·016 492 72	·041 858 23	71
70	·009 715 05	·017 734 76	·046 098 76	72
71	·010 263 18	·019 055 71	·050 735 76	73
72	·010 829 00	·020 460 06	·055 803 36	74
73	·011 412 35	·021 952 49	·061 338 25	75
74	·012 013 02	·023 537 96	·067 379 77	76
75	·012 630 71	·025 221 69	·073 970 00	77
76	·013 265 08	·027 009 16	·081 153 89	78
77	·013 915 72	·028 906 14	·088 979 29	79
78	·014 582 13	·030 918 70	·097 497 01	80
79	·015 263 73	·033 053 22	·106 760 87	81
80	·015 959 88	·035 316 39	·116 827 66	82
			·127 757 10	83
			·139 611 78	84
			·152 456 97	85
			·166 360 45	86
			·181 392 25	87
			·197 624 32	88
			·215 130 14	89
			·233 984 25	90
			·254 261 70	91
			·276 037 45	92
			·299 385 69	93
			·324 379 11	94
			·351 088 08	95
			·379 579 89	96
			·409 917 86	97
			·442 160 50	98
			·476 360 75	99
			·512 565 12	100
			·550 813 04	101
			·591 136 22	102
			·633 558 15	103
			·678 093 69	104
			·724 748 82	105
			·773 520 58	106
			·824 397 07	107
			·877 357 68	108
			·932 373 42	109

4 per cent

Age [x]	$D_{[x]}$	$D_{[x]+1}$	D_{x-2}	Age $x+2$
			34 489·000	0
			33 138·291	1
0	34 481·408	33 135·970	31 842·074	2
1	33 131·660	31 840·163	30 598·090	3
2	31 836·022	30 596·253	29 404·176	4
3	30 592·886	29 402·705	28 258·262	5
4	29 399·470	28 256·848	27 158·091	6
5	28 254·304	27 157·005	26 101·798	7
6	27 154·560	26 100·754	25 087·342	8
7	26 098·665	25 086·338	24 112·795	9
8	25 084·331	24 111·830	23 176·570	10
9	24 109·901	23 175·642	22 276·917	11
10	23 174·019	22 276·026	21 412·188	12
11	22 274·466	21 411·331	20 581·024	13
12	21 409·831	20 580·201	19 781·530	14
13	20 578·348	19 780·541	19 011·763	15
14	19 778·562	19 010·621	18 269·390	16
15	19 007·958	18 267·927	17 552·492	17
16	18 264·699	17 550·795	16 859·584	18
17	17 546·933	16 857·902	16 194·979	19
18	16 854·126	16 193·328	15 557·436	20
19	16 189·657	15 555·826	14 945·767	21
20	15 552·279	14 944·210	14 358·839	22
21	14 940·797	14 357·342	13 795·567	23
22	14 354·071	13 794·135	13 254·913	24
23	13 791·012	13 253·550	12 735·886	25
24	13 250·575	12 734·592	12 237·535	26
25	12 731·763	12 236·310	11 758·953	27
26	12 233·620	11 757·793	11 299·271	28
27	11 755·233	11 298·170	10 857·655	29
28	11 295·726	10 856·607	10 433·310	30
29	10 854·263	10 432·303	10 025·471	31
30	10 430·039	10 024·495	9 633·407 3	32
31	10 022·288	9 632·447 4	9 256·418 5	33
32	9 630·271 3	9 255·458 3	8 893·832 7	34
33	9 253·283 2	8 892·853 5	8 545·006 0	35
34	8 890·646 3	8 543·986 5	8 209·320 6	36
35	8 541·711 1	8 208·237 6	7 886·184 2	37
36	8 205·854 2	7 885·011 6	7 575·028 0	38
37	7 882·477 5	7 573·737 7	7 275·306 5	39
38	7 571·006 5	7 273·867 7	6 986·495 9	40
39	7 270·889 9	6 984·875 0	6 708·093 0	41
40	6 981·597 7	6 706·254 1	6 439·614 7	42
41	6 702·621 1	6 437·519 2	6 180·597 0	43
42	6 433·470 9	6 178·203 7	5 930·594 0	44
43	6 173·677 3	5 927·858 9	5 689·177 6	45
44	5 922·788 5	5 686·054 1	5 455·936 5	46
45	5 680·370 5	5 452·375 3	5 230·475 6	47
46	5 446·006 4	5 226·424 9	5 012·416 0	48
47	5 219·295 8	5 007·821 5	4 801·393 8	49
48	4 999·854 6	4 796·198 9	4 597·060 7	50
49	4 787·314 4	4 591·206 4	4 399·083 0	51
50	4 581·322 4	4 392·508 3	4 207·141 7	52
51	4 381·541 3	4 199·784 1	4 020·932 6	53
52	4 187·649 6	4 012·728 1	3 840·166 4	54

4 per cent

Age [x]	$D_{[x]}$	$D_{[x]+1}$	D_{x+2}	Age $x+2$
53	3 999·341 1	3 831·050 1	3 664·568 4	55
54	3 816·326 1	3 654·475 2	3 493·879 6	56
55	3 638·330 7	3 482·744 4	3 327·856 4	57
56	3 465·098 3	3 315·615 3	3 166·271 6	58
57	3 296·389 8	3 152·862 8	3 008·915 0	59
58	3 131·985 0	2 994·279 4	2 855·594 2	60
59	2 971·682 6	2 839·677 0	2 706·135 6	61
60	2 815·302 8	2 688·887 4	2 560·385 3	62
61	2 662·687 4	2 541·764 1	2 418·210 7	63
62	2 513·702 0	2 398·183 0	2 279·501 6	64
63	2 368·237 3	2 258·044 5	2 144·171 3	65
64	2 226·210 6	2 121·274 6	2 012·158 4	66
65	2 087·567 6	1 987·826 4	1 883·427 7	67
66	1 952·283 9	1 857·681 8	1 757·971 6	68
67	1 820·366 4	1 730·852 3	1 635·811 4	69
68	1 691·854 2	1 607·380 1	1 516·997 2	70
69	1 566·819 7	1 487·338 8	1 401·609 3	71
70	1 445·368 9	1 370·833 5	1 289·756 7	72
71	1 327·640 1	1 257·999 6	1 181·577 2	73
72	1 213·803 6	1 149·001 9	1 077·234 7	74
73	1 104·058 4	1 044·031 5	976·917 02	75
74	998·629 04	943·302 65	880·831 21	76
75	897·760 09	847·046 81	789·198 65	77
76	801·709 78	755·506 84	702·248 21	78
77	710·741 61	668·928 59	620·208 21	79
78	625·114 72	587·551 60	543·297 13	80
79	545·072 70	511·598 42	471·713 26	81
80	470·831 37	441·263 04	405·623 66	82
			345·152 80	83
			290·371 73	84
			241·288 24	85
			197·839 08	86
			159·884 87	87
			127·208 58	88
			99·518 086	89
			76·453 060	90
			57·596 108	91
			42·487 615	92
			30·643 310	93
			21·573 188	94
			14·800 229	95
			9·877 298 7	96
			6·400 817 2	97
			4·020 179 7	98
			2·442 470 9	99
			1·432 605 9	100
			·809 577 13	101
			·439 874 95	102
			·229 315 31	103
			·114 460 24	104
			·054 585 15	105
			·024 818 32	106
			·010 735 73	107
			·004 409 02	108
			·001 715 55	109

A1967–70 MORTALITY TABLE

4 per cent

Age [x]	$N_{[x]}$	$N_{[x]+1}$	N_{x+2}	Age $x+2$
			835 843·39	0
			801 354·39	1
0	835 833·48	801 352·07	768 216·10	2
1	801 345·85	768 214·19	736 374·03	3
2	768 208·21	736 372·19	705 775·94	4
3	736 367·35	705 774·47	676 371·76	5
4	705 769·82	676 370·35	648 113·50	6
5	676 366·72	648 112·41	620 955·41	7
6	648 108·92	620 954·36	594 853·61	8
7	620 951·27	594 852·61	569 766·27	9
8	594 849·63	569 765·30	545 653·47	10
9	569 762·45	545 652·55	522 476·90	11
10	545 650·03	522 476·01	500 199·99	12
11	522 473·60	500 199·13	478 787·80	13
12	500 196·81	478 786·98	458 206·77	14
13	478 784·13	458 205·79	438 425·24	15
14	458 202·67	438 424·10	419 413·48	16
15	438 419·98	419 412·02	401 144·09	17
16	419 407·09	401 142·40	383 591·60	18
17	401 136·85	383 589·92	366 732·02	19
18	383 584·49	366 730·36	350 537·04	20
19	366 725·08	350 535·43	334 979·60	21
20	350 530·32	334 978·04	320 033·83	22
21	334 973·13	320 032·34	305 674·99	23
22	320 027·63	305 673·56	291 879·43	24
23	305 669·08	291 878·06	278 624·51	25
24	291 873·80	278 623·22	265 888·63	26
25	278 619·17	265 887·40	253 651·09	27
26	265 883·55	253 649·93	241 892·14	28
27	253 646·27	241 891·04	230 592·87	29
28	241 887·55	230 591·82	219 735·21	30
29	230 588·47	219 734·21	209 301·91	31
30	219 730·97	209 300·93	199 276·43	32
31	209 297·76	199 275·47	189 643·03	33
32	199 272·34	189 642·07	180 386·61	34
33	189 638·91	180 385·63	171 492·78	35
34	180 382·40	171 491·76	162 947·77	36
35	171 488·40	162 946·69	154 738·45	37
36	162 943·13	154 737·28	146 852·27	38
37	154 733·45	146 850·97	139 277·24	39
38	146 846·80	139 275·80	132 001·93	40
39	139 271·20	132 000·31	125 015·43	41
40	131 995·19	125 013·60	118 307·34	42
41	125 007·87	118 305·25	111 867·73	43
42	118 298·80	111 865·33	105 687·13	44
43	111 858·07	105 684·39	99 756·536	45
44	105 676·20	99 753·413	94 067·358	46
45	99 744·168	94 063·797	88 611·422	47
46	94 053·378	88 607·371	83 380·946	48
47	88 595·648	83 376·352	78 368·530	49
48	83 363·190	78 363·335	73 567·136	50
49	78 348·597	73 561·282	68 970·076	51
50	73 544·823	68 963·501	64 570·993	52
51	68 945·176	64 563·635	60 363·851	53
52	64 543·296	60 355·647	56 342·918	54

4 per cent

Age [x]	$N_{[x]}$	$N_{[x]+1}$	N_{x+2}	Age $x+2$
53	60 333·143	56 333·802	52 502·752	55
54	56 308·985	52 492·659	48 838·184	56
55	52 465·379	48 827·049	45 344·304	57
56	48 797·161	45 332·063	42 016·448	58
57	45 299·429	42 003·039	38 850·176	59
58	41 967·525	38 835·540	35 841·261	60
59	38 797·026	35 825·344	32 985·667	61
60	35 783·721	32 968·419	30 279·531	62
61	32 923·597	30 260·910	27 719·146	63
62	30 212·820	27 699·118	25 300·935	64
63	27 647·715	25 279·478	23 021·434	65
64	25 224·747	22 998·537	20 877·262	66
65	22 940·498	20 852·930	18 865·104	67
66	20 791·642	18 839·358	16 981·676	68
67	18 774·923	16 954·557	15 223·705	69
68	16 887·127	15 195·273	13 587·893	70
69	15 125·055	13 558·235	12 070·896	71
70	13 485·489	12 040·120	10 669·287	72
71	11 965·170	10 637·530	9 379·530 0	73
72	10 560·758	9 346·954 7	8 197·952 8	74
73	9 268·808 0	8 164·749 6	7 120·718 1	75
74	8 085·732 7	7 087·103 7	6 143·801 1	76
75	7 007·776 7	6 110·016 7	5 262·969 8	77
76	6 030·987 8	5 229·278 0	4 473·771 2	78
77	5 151·193 2	4 440·451 6	3 771·523 0	79
78	4 363·981 1	3 738·866 4	3 151·314 8	80
79	3 664·688 8	3 119·616 1	2 608·017 6	81
80	3 048·398 8	2 577·567 4	2 136·304 4	82
			1 730·680 7	83
			1 385·527 9	84
			1 095·156 2	85
			853·867 94	86
			656·028 86	87
			496·143 99	88
			368·935 41	89
			269·417 33	90
			192·964 27	91
			135·368 16	92
			92·880 543	93
			62·237 233	94
			40·664 045	95
			25·863 816	96
			15·986 518	97
			9·585 700 4	98
			5·565 520 8	99
			3·123 049 8	100
			1·690 443 9	101
			·880 866 81	102
			·440 991 86	103
			·211 676 55	104
			·097 216 31	105
			·042 631 16	106
			·017 812 84	107
			·007 077 11	108
			·002 668 10	109

4 per cent

Age $[x]$	$S_{[x]}$	$S_{[x]+1}$	S_{x+2}	Age $x+2$
			18 051 206	0
			17 215 363	1
0	18 051 194	17 215 360	16 414 008	2
1	17 215 352	16 414 006	15 645 792	3
2	16 413 998	15 645 790	14 909 418	4
3	15 645 784	14 909 417	14 203 642	5
4	14 909 410	14 203 641	13 527 270	6
5	14 203 636	13 527 269	12 879 157	7
6	13 527 265	12 879 156	12 258 201	8
7	12 879 152	12 258 200	11 663 348	9
8	12 258 196	11 663 347	11 093 581	10
9	11 663 343	11 093 581	10 547 928	11
10	11 093 577	10 547 927	10 025 451	12
11	10 547 924	10 025 450	9 525 251·1	13
12	10 025 447	9 525 250·3	9 046 463·3	14
13	9 525 246·5	9 046 462·3	8 588 256·6	15
14	9 046 458·1	8 588 255·4	8 149 831·3	16
15	8 588 249·8	8 149 829·8	7 730 417·8	17
16	8 149 823·2	7 730 416·1	7 329 273·7	18
17	7 730 408·9	7 329 272·1	6 945 682·1	19
18	7 329 265·0	6 945 680·5	6 578 950·1	20
19	6 945 673·6	6 578 948·5	6 228 413·1	21
20	6 578 941·8	6 228 411·5	5 893 433·5	22
21	6 228 405·1	5 893 432·0	5 573 399·6	23
22	5 893 425·8	5 573 398·2	5 267 724·6	24
23	5 573 392·4	5 267 723·3	4 975 845·2	25
24	5 267 717·7	4 975 843·9	4 697 220·7	26
25	4 975 838·6	4 697 219·5	4 431 332·1	27
26	4 697 214·5	4 431 330·9	4 177 681·0	28
27	4 431 326·2	4 177 679·9	3 935 788·8	29
28	4 177 675·3	3 935 787·8	3 705 196·0	30
29	3 935 783·4	3 705 195·0	3 485 460·8	31
30	3 705 190·7	3 485 459·8	3 276 158·9	32
31	3 485 455·7	3 276 157·9	3 076 882·4	33
32	3 276 153·8	3 076 881·5	2 887 239·4	34
33	3 076 877·3	2 887 238·4	2 706 852·8	35
34	2 887 234·2	2 706 851·8	2 535 360·0	36
35	2 706 847·3	2 535 358·9	2 372 412·2	37
36	2 535 354·2	2 372 411·1	2 217 673·8	38
37	2 372 405·9	2 217 672·5	2 070 821·5	39
38	2 217 666·9	2 070 820·1	1 931 544·3	40
39	2 070 813·9	1 931 542·7	1 799 542·4	41
40	1 931 535·7	1 799 540·5	1 674 526·9	42
41	1 799 532·7	1 674 524·8	1 556 219·6	43
42	1 674 516·0	1 556 217·2	1 444 351·9	44
43	1 556 207·2	1 444 349·1	1 338 664·7	45
44	1 444 337·8	1 338 661·6	1 238 908·2	46
45	1 338 648·8	1 238 904·6	1 144 840·8	47
46	1 238 890·2	1 144 836·8	1 056 229·4	48
47	1 144 820·5	1 056 224·8	972 848·46	49
48	1 056 206·5	972 843·26	894 479·93	50
49	972 822·67	894 474·07	820 912·79	51
50	894 451·04	820 906·22	751 942·72	52
51	820 880·53	751 935·36	687 371·72	53
52	751 906·81	687 363·52	627 007·87	54

4 per cent

Age [x]	$S_{[x]}$	$S_{[x]+1}$	S_{x+2}	Age $x+2$
53	687 331·90	626 998·76	570 664·95	55
54	626 963·84	570 654·86	518 162·20	56
55	570 616·44	518 151·07	469 324·02	57
56	518 108·94	469 311·78	423 979·71	58
57	469 265·73	423 966·30	381 963·27	59
58	423 916·16	381 948·63	343 113·09	60
59	381 894·20	343 097·17	307 271·83	61
60	343 038·30	307 254·58	274 286·16	62
61	307 191·14	274 267·54	244 006·63	63
62	274 199·42	243 986·60	216 287·48	64
63	243 913·74	216 266·03	190 986·55	65
64	216 188·40	190 963·65	167 965·12	66
65	190 881·28	167 940·78	147 087·85	67
66	167 853·75	147 062·11	128 222·75	68
67	146 970·55	128 195·63	111 241·07	69
68	128 099·77	111 212·64	96 017·369	70
69	111 112·76	95 987·710	82 429·475	71
70	95 884·189	82 398·700	70 358·579	72
71	82 291·992	70 326·822	59 689·293	73
72	70 217·476	59 656·717	50 309·763	74
73	59 545·368	50 276·560	42 111·810	75
74	50 163·928	42 078·196	34 991·092	76
75	41 965·084	34 957·307	28 847·291	77
76	34 844·587	28 813·599	23 584·321	78
77	28 702·194	23 551·001	19 110·550	79
78	23 441·874	19 077·893	15 339·027	80
79	18 972·017	15 307·328	12 187·712	81
80	15 205·661	12 157·262	9 579·694 4	82
			7 443·390 0	83
			5 712·709 3	84
			4 327·181 4	85
			3 232·025 2	86
			2 378·157 2	87
			1 722·128 4	88
			1 225·984 4	89
			857·048 98	90
			587·631 65	91
			394·667 39	92
			259·299 23	93
			166·418 69	94
			104·181 45	95
			63·517 408	96
			37·653 592	97
			21·667 074	98
			12·081 374	99
			6·515 853 0	100
			3·392 803 2	101
			1·702 359 2	102
			·821 492 43	103
			·380 500 57	104
			·168 824 01	105
			·071 607 70	106
			·028 976 54	107
			·011 163 70	108
			·004 086 59	109

4 per cent

Age [x]	$C_{[x]}$	$C_{[x]+1}$	C_{x+2}	Age $x+2$
			24·208 625	0
			21·667 344	1
0	19·230 016	19·435 521	19·288 949	2
1	17·202 977	17·450 858	17·064 320	3
2	15·305 780	15·298 127	14·984 821	4
3	13·531 469	13·570 479	13·313 989	5
4	11·872 863	11·954 820	11·751 097	6
5	10·595 364	10·706 127	10·541 111	7
6	9·399 655 3	9·536 813 9	9·648 977 7	8
7	8·532 255 9	8·683 732 4	8·810 444 4	9
8	7·718 255 5	7·882 713 8	8·245 510 3	10
9	6·954 779 1	7·353 809 5	7·925 441 8	11
10	6·684 813 3	7·068 354 4	7·617 797 5	12
11	6·425 326 8	6·793 980 0	7·915 778 5	13
12	6·175 912 9	7·123 915 6	8·939 730 1	14
13	6·331 799 3	7·988 295 4	11·151 130	15
14	7·226 782 3	10·053 694	14·229 044	16
15	8·955 672 6	12·822 680	17·812 066	17
16	11·415 437	16·180 483	16·159 425	18
17	14·148 733	14·542 534	14·659 570	19
18	12·563 131	13·071 597	13·305 646	20
19	11·151 716	11·758 260	12·090 838	21
20	9·903 810 6	10·593 721	11·009 226	22
21	8·808 748 9	9·569 582 5	10·054 978	23
22	7·856 645 7	8·678 235 2	9·223 125 4	24
23	7·038 587 7	7·912 241 8	8·508 673 8	25
24	6·345 496 4	7·264 594 8	7·907 448 1	26
25	5·769 569 6	6·729 146 8	7·415 150 8	27
26	5·302 803 6	6·299 463 7	7·028 255 1	28
27	4·938 101 9	5·969 996 6	6·743 439 1	29
28	4·668 501 9	5·735 211 2	6·557 736 4	30
29	4·487 611 3	5·590 109 6	6·468 453 0	31
30	4·389 341 7	5·529 954 7	6·473 093 9	32
31	4·367 982 9	5·550 142 1	6·569 654 0	33
32	4·417 979 6	5·646 363 5	6·756 234 3	34
33	4·534 197 7	5·814 643 6	7·031 307 5	35
34	4·711 786 1	6·051 032 0	7·393 361 5	36
35	4·946 143 5	6·351 992 0	7·841 369 4	37
36	5·232 810 1	6·713 935 8	8·374 266 3	38
37	5·567 530 3	7·133 587 0	8·991 159 6	39
38	5·946 297 6	7·607 626 3	9·691 546 2	40
39	6·365 244 6	8·133 013 8	10·474 687	41
40	6·820 551 0	8·706 587 9	11·340 223	42
41	7·308 692 7	9·325 365 6	12·287 681	43
42	7·826 069 9	9·986 412 8	13·316 636	44
43	8·369 250 6	10·686 676	14·426 606	45
44	8·934 811 2	11·423 228	15·617 146	46
45	9·519 427 1	12·192 927	16·887 546	47
46	10·119 675	12·992 641	18·236 904	48
47	10·732 227	13·819 132	19·664 108	49
48	11·353 660	14·668 944	21·167 697	50
49	11·980 530	15·538 541	22·745 797	51
50	12·609 341	16·424 011	24·395 920	52
51	13·236 384	17·321 323	26·115 030	53
52	13·857 979	18·226 081	27·899 252	54

4 per cent

Age [x]	$C_{[x]}$	$C_{[x]+1}$	C_{x+2}	Age $x+2$
53	14·470 232	19·133 627	29·743 892	55
54	15·069 130	20·038 858	31·643 194	56
55	15·650 489	20·936 317	33·590 294	57
56	16·209 896	21·820 065	35·576 898	58
57	16·742 839	22·683 787	37·593 298	59
58	17·244 589	23·520 583	39·628 125	60
59	17·710 143	24·323 062	41·668 139	61
60	18·134 448	25·083 390	43·698 194	62
61	18·512 257	25·793 162	45·701 021	63
62	18·838 191	26·443 565	47·657 146	64
63	19·106 779	27·025 297	49·544 810	65
64	19·312 570	27·528 698	51·340 028	66
65	19·450 149	27·943 908	53·016 515	67
66	19·514 298	28·260 877	54·545 971	68
67	19·500 045	28·469 657	55·898 285	69
68	19·402 802	28·560 501	57·041 926	70
69	19·218 626	28·524 213	57·944 508	71
70	18·944 269	28·352 395	58·573 508	72
71	18·577 412	28·037 811	58·897 169	73
72	18·116 940	27·574 752	58·885 607	74
73	17·563 064	26·959 464	58·512 079	75
74	16·917 582	26·190 562	57·754 434	76
75	16·184 042	25·269 434	56·596 645	77
76	15·367 944	24·200 671	55·030 459	78
77	14·476 809	22·992 356	53·056 922	79
78	13·520 252	21·656 333	50·687 819	80
79	12·509 942	20·208 295	47·946 787	81
80	11·459 433	18·667 722	44·869 945	82
			41·505 962	83
			37·915 345	84
			34·168 847	85
			30·345 019	86
			26·526 872	87
			22·797 854	88
			19·237 407	89
			15·916 450	90
			12·893 258	91
			10·210 166	92
			7·891 533 3	93
			5·943 221 2	94
			4·353 690 5	95
			3·096 585 4	96
			2·134 452 3	97
			1·423 086 4	98
			·915 923 85	99
			·567 928 53	100
			·338 564 60	101
			·193 641 37	102
			·106 035 25	103
			·055 472 77	104
			·027 667 40	105
			·013 128 05	106
			·005 913 80	107
			·002 523 89	108
			·001 018 42	109

4 per cent

Age [x]	$M_{[x]}$	$M_{[x]+1}$	M_{x+2}	Age $x+2$
			2 341·177 1	0
			2 316·968 5	1
0	2 333·966 7	2 314·736 7	2 295·301 2	2
1	2 310·666 1	2 293·463 1	2 276·012 2	3
2	2 289·551 8	2 274·246 0	2 258·947 9	4
3	2 271·065 0	2 257·533 6	2 243·963 1	5
4	2 254·476 8	2 242·603 9	2 230·649 1	6
5	2 240·199 5	2 229·604 1	2 218·898 0	7
6	2 227·293 4	2 217·893 7	2 208·356 9	8
7	2 215·923 9	2 207·391 6	2 198·707 9	9
8	2 205·498 4	2 197·780 2	2 189·897 5	10
9	2 195·960 5	2 189·005 8	2 181·652 0	11
10	2 187·479 7	2 180·794 9	2 173·726 5	12
11	2 179·328 0	2 172·902 7	2 166·108 7	13
12	2 171·492 8	2 165·316 9	2 158·192 9	14
13	2 163·573 3	2 157·241 5	2 149·253 2	15
14	2 155·382 6	2 148·155 8	2 138·102 1	16
15	2 145·651 4	2 136·695 7	2 123·873 0	17
16	2 133·656 9	2 122·241 5	2 106·061 0	18
17	2 118·592 8	2 104·444 1	2 089·901 5	19
18	2 100·876 7	2 088·313 6	2 075·242 0	20
19	2 084·846 3	2 073·694 6	2 061·936 3	21
20	2 070·343 0	2 060·439 2	2 049·845 5	22
21	2 057·214 6	2 048·405 8	2 038·836 3	23
22	2 045·316 2	2 037·459 5	2 028·781 3	24
23	2 034·509 0	2 027·470 4	2 019·558 2	25
24	2 024·659 6	2 018·314 1	2 011·049 5	26
25	2 015·640 8	2 009·871 2	2 003·142 0	27
26	2 007·329 2	2 002·026 4	1 995·726 9	28
27	1 999·606 7	1 994·668 6	1 988·698 6	29
28	1 992·358 9	1 987·690 4	1 981·955 2	30
29	1 985·475 2	1 980·987 6	1 975·397 5	31
30	1 978·848 3	1 974·459 0	1 968·929 0	32
31	1 972·374 0	1 968·006 1	1 962·455 9	33
32	1 965·950 6	1 961·532 6	1 955·886 3	34
33	1 959·478 9	1 954·944 7	1 949·130 0	35
34	1 952·861 5	1 948·149 7	1 942·098 7	36
35	1 946·003 5	1 941·057 3	1 934·705 4	37
36	1 938·810 7	1 933·577 9	1 926·864 0	38
37	1 931·190 8	1 925·623 3	1 918·489 7	39
38	1 923·052 5	1 917·106 2	1 909·498 6	40
39	1 914·305 3	1 907·940 0	1 899·807 0	41
40	1 904·859 5	1 898·038 9	1 889·332 3	42
41	1 894·626 2	1 887·317 5	1 877·992 1	43
42	1 883·516 9	1 875·690 8	1 865·704 4	44
43	1 871·443 7	1 863·074 5	1 852·387 8	45
44	1 858·319 2	1 849·384 4	1 837·961 2	46
45	1 844·056 4	1 834·537 0	1 822·344 0	47
46	1 828·568 8	1 818·449 1	1 805·456 5	48
47	1 811·770 9	1 801·038 7	1 787·219 6	49
48	1 793·578 1	1 782·224 4	1 767·555 5	50
49	1 773·906 8	1 761·926 3	1 746·387 8	51
50	1 752·675 3	1 740·066 0	1 723·642 0	52
51	1 729·803 8	1 716·567 4	1 699·246 1	53
52	1 705·215 1	1 691·357 1	1 673·131 0	54

4 per cent

Age [x]	$M_{[x]}$	$M_{[x]+1}$	M_{x+2}	Age $x+2$
53	1 678·835 6	1 664·365 4	1 645·231 8	55
54	1 650·595 9	1 635·526 7	1 615·487 9	56
55	1 620·431 5	1 604·781 0	1 583·844 7	57
56	1 588·284 4	1 572·074 5	1 550·254 4	58
57	1 554·104 1	1 537·361 3	1 514·677 5	59
58	1 517·849 4	1 500·604 8	1 477·084 2	60
59	1 479·489 3	1 461·779 1	1 437·456 1	61
60	1 439·005 8	1 420·871 3	1 395·787 9	62
61	1 396·395 2	1 377·882 9	1 352·089 7	63
62	1 351·670 5	1 332·832 3	1 306·388 7	64
63	1 304·863 7	1 285·756 9	1 258·731 6	65
64	1 256·028 0	1 236·715 5	1 209·186 8	66
65	1 205·240 8	1 185·790 6	1 157·846 7	67
66	1 152·605 4	1 133·091 1	1 104·830 2	68
67	1 098·254 0	1 078·753 9	1 050·284 3	69
68	1 042·349 3	1 022·946 5	994·385 97	70
69	985·086 88	965·868 26	937·344 04	71
70	926·696 20	907·751 93	879·399 53	72
71	867·441 25	848·863 84	820·826 03	73
72	807·620 55	789·503 61	761·928 86	74
73	747·565 78	730·002 71	703·043 25	75
74	687·639 32	670·721 73	644·531 17	76
75	628·230 21	612·046 17	586·776 74	77
76	569·748 71	554·380 76	530·180 09	78
77	512·618 80	498·141 99	475·149 63	79
78	457·269 30	443·749 04	422·092 71	80
79	404·123 13	391·613 19	371·404 89	81
80	353·585 26	342·125 83	323·458 11	82
			278·588 16	83
			237·082 20	84
			199·166 85	85
			164·998 01	86
			134·652 99	87
			108·126 12	88
			85·328 262	89
			66·090 855	90
			50·174 405	91
			37·281 148	92
			27·070 981	93
			19·179 448	94
			13·236 227	95
			8·882 536 5	96
			5·785 951 1	97
			3·651 498 9	98
			2·228 412 4	99
			1·312 488 6	100
			·744 560 06	101
			·405 995 45	102
			·212 354 08	103
			·106 318 84	104
			·050 846 06	105
			·023 178 66	106
			·010 050 62	107
			·004 136 82	108
			·001 612 93	109

4 per cent

Age [x]	$R_{[x]}$	$R_{[x]+1}$	R_{x+2}	Age $x+2$
			141 566·24	0
			139 225·07	1
0	141 556·80	139 222·84	136 908·10	2
1	139 216·93	136 906·26	134 612·80	3
2	136 900·58	134 611·03	132 336·79	4
3	134 606·44	132 335·37	130 077·84	5
4	132 330·95	130 076·48	127 833·87	6
5	130 073·03	127 832·83	125 603·23	7
6	127 829·51	125 602·22	123 384·33	8
7	125 599·29	123 383·36	121 175·97	9
8	123 380·54	121 175·04	118 977·26	10
9	121 172·33	118 976·37	116 787·36	11
10	118 973·99	116 786·51	114 605·71	12
11	116 784·22	114 604·89	112 431·99	13
12	114 602·69	112 431·19	110 265·88	14
13	112 428·50	110 264·93	108 107·68	15
14	110 261·97	108 106·59	105 958·43	16
15	108 102·68	105 957·03	103 820·33	17
16	105 952·35	103 818·70	101 696·46	18
17	103 813·43	101 694·84	99 590·395	19
18	101 689·68	99 588·808	97 500·494	20
19	99 583·793	97 498·947	95 425·252	21
20	97 494·098	95 423·755	93 363·316	22
21	95 419·091	93 361·876	91 313·470	23
22	93 357·410	91 312·093	89 274·634	24
23	91 307·832	89 273·323	87 245·853	25
24	89 269·268	87 244·609	85 226·294	26
25	87 240·757	85 225·116	83 215·245	27
26	85 221·458	83 214·129	81 212·103	28
27	83 210·651	81 211·045	79 216·376	29
28	81 207·727	79 215·368	77 227·677	30
29	79 212·185	77 226·710	75 245·722	31
30	77 223·632	75 244·784	73 270·325	32
31	75 241·776	73 269·402	71 301·396	33
32	73 266·423	71 300·472	69 338·940	34
33	71 297·477	69 337·998	67 383·054	35
34	69 334·935	67 382·073	65 433·924	36
35	67 378·886	65 432·882	63 491·825	37
36	65 429·508	63 490·697	61 557·120	38
37	63 487·070	61 555·879	59 630·256	39
38	61 551·924	59 628·872	57 711·766	40
39	59 624·513	57 710·207	55 802·267	41
40	57 705·359	55 800·499	53 902·460	42
41	55 795·072	53 900·445	52 013·128	43
42	53 894·344	52 010·827	50 135·136	44
43	52 003·950	50 132·506	48 269·431	45
44	50 124·747	48 266·428	46 417·044	46
45	48 257·676	46 413·619	44 579·082	47
46	46 403·756	44 575·188	42 756·738	48
47	44 564·092	42 752·321	40 951·282	49
48	42 739·865	40 946·287	39 164·062	50
49	40 932·340	39 158·433	37 396·507	51
50	39 142·860	37 390·185	35 650·119	52
51	37 372·848	35 643·044	33 926·477	53
52	35 623·803	33 918·588	32 227·231	54

4 per cent

Age [x]	$R_{[x]}$	$R_{[x]+1}$	R_{x+2}	Age $x+2$
53	33 897·301	32 218·465	30 554·100	55
54	32 194·991	30 544·395	28 908·868	56
55	30 518·593	28 898·161	27 293·380	57
56	28 869·894	27 281·610	25 709·536	58
57	27 250·747	25 696·643	24 159·281	59
58	25 663·058	24 145·209	22 644·604	60
59	24 108·788	22 629·299	21 167·520	61
60	22 589·941	21 150·935	19 730·063	62
61	21 108·554	19 712·158	18 334·276	63
62	19 666·689	18 315·018	16 982·186	64
63	18 266·418	16 961·554	15 675·797	65
64	16 909·809	15 653·781	14 417·065	66
65	15 598·910	14 393·669	13 207·879	67
66	14 335·728	13 183·123	12 050·032	68
67	13 122·210	12 023·956	10 945·202	69
68	11 960·213	10 917·864	9 894·917 5	70
69	10 851·487	9 866·399 8	8 900·531 5	71
70	9 797·635 6	8 870·939 4	7 963·187 5	72
71	8 800·093 1	7 932·651 8	7 083·788 0	73
72	7 860·086 1	7 052·465 5	6 262·961 9	74
73	6 978·601 6	6 231·035 8	5 501·033 1	75
74	6 156·350 9	5 468·711 6	4 797·989 8	76
75	5 393·735 0	4 765·504 8	4 153·458 7	77
76	4 690·811 4	4 121·062 7	3 566·681 9	78
77	4 047·262 6	3 534·643 8	3 036·501 8	79
78	3 462·370 5	3 005·101 2	2 561·352 2	80
79	2 934·995 8	2 530·872 7	2 139·259 5	81
80	2 463·565 7	2 109·980 4	1 767·854 6	82
			1 444·396 5	83
			1 165·808 3	84
			928·726 13	85
			729·559 28	86
			564·561 27	87
			429·908 28	88
			321·782 17	89
			236·453 90	90
			170·363 05	91
			120·188 64	92
			82·907 496	93
			55·836 514	94
			36·657 066	95
			23·420 839	96
			14·538 303	97
			8·752 351 4	98
			5·100 852 5	99
			2·872 440 1	100
			1·559 951 5	101
			·815 391 45	102
			·409 396 00	103
			·197 041 91	104
			·090 723 08	105
			·039 877 02	106
			·016 698 35	107
			·006 647 74	108
			·002 510 92	109

A1967–70 MORTALITY TABLE

3 per cent SELECT

Age [x]	$\ddot{a}_{[x]}$	$A_{[x]}$	$P_{[x]}$	Age [x]	Age [x]	$\ddot{a}_{[x]}$	$A_{[x]}$	$P_{[x]}$	Age [x]
0	30·055	·124 60	·004 15	0	55	15·913	·536 53	·033 72	55
1	29·948	·127 72	·004 26	1	56	15·499	·548 58	·035 39	56
2	29·836	·130 98	·004 39	2	57	15·084	·560 65	·037 17	57
3	29·720	·134 38	·004 52	3	58	14·670	·572 72	·039 04	58
4	29·598	·137 93	·004 66	4	59	14·256	·584 79	·041 02	59
5	29·471	·141 63	·004 81	5	60	13·843	·596 82	·043 11	60
6	29·339	·145 47	·004 96	6	61	13·431	·608 80	·045 33	61
7	29·202	·149 47	·005 12	7	62	13·022	·620 71	·047 67	62
8	29·060	·153 60	·005 29	8	63	12·616	·632 54	·050 14	63
9	28·913	·157 87	·005 46	9	64	12·214	·644 26	·052 75	64
10	28·761	·162 30	·005 64	10	65	11·816	·655 86	·055 51	65
11	28·604	·166 87	·005 83	11	66	11·422	·667 31	·058 42	66
12	28·443	·171 57	·006 03	12	67	11·035	·678 61	·061 50	67
13	28·277	·176 40	·006 24	13	68	10·653	·689 72	·064 74	68
14	28·107	·181 35	·006 45	14	69	10·278	·700 64	·068 17	69
15	27·934	·186 38	·006 67	15	70	9·910	·711 35	·071 78	70
16	27·761	·191 44	·006 90	16	71	9·551	·721 83	·075 58	71
17	27·587	·196 49	·007 12	17	72	9·199	·732 07	·079 58	72
18	27·414	·201 55	·007 35	18	73	8·856	·742 05	·083 79	73
19	27·233	·206 81	·007 59	19	74	8·523	·751 77	·088 21	74
20	27·045	·212 28	·007 85	20	75	8·199	·761 20	·092 84	75
21	26·850	·217 96	·008 12	21	76	7·885	·770 35	·097 70	76
22	26·648	·223 85	·008 40	22	77	7·581	·779 20	·102 78	77
23	26·438	·229 97	·008 70	23	78	7·288	·787 74	·108 09	78
24	26·220	·236 30	·009 01	24	79	7·005	·795 97	·113 63	79
25	25·995	·242 85	·009 34	25	80	6·733	·803 89	·119 40	80
26	25·763	·249 63	·009 69	26					
27	25·522	·256 63	·010 06	27					
28	25·274	·263 86	·010 44	28					
29	25·018	·271 31	·010 84	29					
30	24·755	·278 99	·011 27	30					
31	24·483	·286 90	·011 72	31					
32	24·204	·295 04	·012 19	32					
33	23·916	·303 40	·012 69	33					
34	23·621	·312 00	·013 21	34					
35	23·319	·320 81	·013 76	35					
36	23·008	·329 85	·014 34	36					
37	22·691	·339 11	·014 95	37					
38	22·365	·348 59	·015 59	38					
39	22·033	·358 28	·016 26	39					
40	21·693	·368 17	·016 97	40					
41	21·346	·378 28	·017 72	41					
42	20·992	·388 58	·018 51	42					
43	20·632	·399 07	·019 34	43					
44	20·265	·409 74	·020 22	44					
45	19·893	·420 60	·021 14	45					
46	19·514	·431 62	·022 12	46					
47	19·131	·442 80	·023 15	47					
48	18·742	·454 12	·024 23	48					
49	18·348	·465 59	·025 37	49					
50	17·950	·477 17	·026 58	50					
51	17·549	·488 88	·027 86	51					
52	17·143	·500 68	·029 21	52					
53	16·735	·512 56	·030 63	53					
54	16·325	·524 52	·032 13	54					

A1967–70 MORTALITY TABLE

ULTIMATE

3 per cent

Age x	$\ddot{a}_x$	A_x	P_x	Age x	Age x	$\ddot{a}_x$	A_x	P_x	Age x
0	30·049	·124 78	·004 15	0	55	15·809	·539 55	·034 13	55
1	29·942	·127 89	·004 27	1	56	15·383	·551 95	·035 88	56
2	29·831	·131 13	·004 40	2	57	14·955	·564 41	·037 74	57
3	29·715	·134 52	·004 53	3	58	14·526	·576 90	·039 71	58
4	29·593	·138 06	·004 67	4	59	14·097	·589 41	·041 81	59
5	29·467	·141 75	·004 81	5	60	13·667	·601 92	·044 04	60
6	29·335	·145 58	·004 96	6	61	13·239	·614 41	·046 41	61
7	29·198	·149 56	·005 12	7	62	12·811	·626 87	·048 93	62
8	29·056	·153 70	·005 29	8	63	12·385	·639 27	·051 62	63
9	28·910	·157 97	·005 46	9	64	11·962	·651 60	·054 47	64
10	28·758	·162 39	·005 65	10	65	11·541	·663 84	·057 52	65
11	28·601	·166 95	·005 84	11	66	11·125	·675 97	·060 76	66
12	28·440	·171 66	·006 04	12	67	10·713	·687 97	·064 22	67
13	28·273	·176 50	·006 24	13	68	10·306	·699 82	·067 90	68
14	28·103	·181 47	·006 46	14	69	9·905	·711 50	·071 83	69
15	27·929	·186 53	·006 68	15	70	9·510	·723 01	·076 02	70
16	27·754	·191 63	·006 90	16	71	9·122	·734 31	·080 50	71
17	27·579	·196 73	·007 13	17	72	8·742	·745 39	·085 27	72
18	27·405	·201 79	·007 36	18	73	8·369	·756 24	·090 36	73
19	27·224	·207 06	·007 61	19	74	8·005	·766 84	·095 79	74
20	27·037	·212 53	·007 86	20	75	7·650	·777 17	·101 59	75
21	26·842	·218 21	·008 13	21	76	7·305	·787 24	·107 77	76
22	26·639	·224 10	·008 41	22	77	6·969	·797 01	·114 36	77
23	26·430	·230 21	·008 71	23	78	6·644	·806 49	·121 39	78
24	26·212	·236 54	·009 02	24	79	6·329	·815 66	·128 88	79
25	25·987	·243 08	·009 35	25	80	6·025	·824 52	·136 85	80
26	25·755	·249 86	·009 70	26	81	5·732	·833 05	·145 34	81
27	25·515	·256 85	·010 07	27	82	5·450	·841 27	·154 36	82
28	25·267	·264 07	·010 45	28	83	5·179	·849 15	·163 95	83
29	25·011	·271 53	·010 86	29	84	4·920	·856 70	·174 13	84
30	24·747	·279 21	·011 28	30	85	4·672	·863 92	·184 92	85
31	24·476	·287 12	·011 73	31	86	4·435	·870 82	·196 34	86
32	24·196	·295 26	·012 20	32	87	4·210	·877 38	·208 41	87
33	23·909	·303 63	·012 70	33	88	3·996	·883 62	·221 14	88
34	23·613	·312 23	·013 22	34	89	3·792	·889 54	·234 56	89
35	23·310	·321 06	·013 77	35	90	3·600	·895 15	·248 66	90
36	22·999	·330 12	·014 35	36	91	3·418	·900 45	·263 45	91
37	22·681	·339 40	·014 96	37	92	3·246	·905 45	·278 92	92
38	22·354	·348 91	·015 61	38	93	3·085	·910 16	·295 07	93
39	22·020	·358 64	·016 29	39	94	2·932	·914 59	·311 88	94
40	21·678	·368 59	·017 00	40	95	2·790	·918 75	·329 33	95
41	21·330	·378 75	·017 76	41	96	2·656	·922 64	·347 38	96
42	20·974	·389 12	·018 55	42	97	2·531	·926 29	·366 00	97
43	20·610	·399 70	·019 39	43	98	2·414	·929 69	·385 14	98
44	20·241	·410 47	·020 28	44	99	2·305	·932 87	·404 75	99
45	19·864	·421 43	·021 22	45	100	2·203	·935 83	·424 76	100
46	19·482	·432 58	·022 20	46	101	2·109	·938 58	·445 11	101
47	19·093	·443 90	·023 25	47	102	2·021	·941 14	·465 72	102
48	18·698	·455 39	·024 35	48	103	1·939	·943 52	·486 52	103
49	18·299	·467 03	·025 52	49	104	1·864	·945 72	·507 42	104
50	17·894	·478 82	·026 76	50	105	1·794	·947 75	·528 34	105
51	17·484	·490 75	·028 07	51	106	1·729	·949 64	·549 20	106
52	17·071	·502 80	·029 45	52	107	1·669	·951 38	·569 91	107
53	16·653	·514 96	·030 92	53	108	1·614	·952 98	·590 38	108
54	16·232	·527 21	·032 48	54	109	1·563	·954 47	·610 54	109

3 per cent

FUNCTIONS FOR A LIMITED TERM

Age [x]	SELECT $\ddot{a}_{[x]:\overline{n}\rceil}$	SELECT $A_{[x]:\overline{n}\rceil}$	SELECT $P_{[x]:\overline{n}\rceil}$	n	ULTIMATE $\ddot{a}_{x:\overline{n}\rceil}$	ULTIMATE $A_{x:\overline{n}\rceil}$	ULTIMATE $P_{x:\overline{n}\rceil}$	Age x
		$x+n=60$				$x+n=60$		
59	1·000	·970 87	·970 87	1	1·000	·970 87	·970 87	59
58	1·965	·942 76	·479 70	2	1·960	·942 93	·481 20	58
57	2·896	·915 64	·316 14	3	2·882	·916 04	·317 80	57
56	3·792	·889 56	·234 61	4	3·772	·890 13	·235 97	56
55	4·654	·864 43	·185 72	5	4·631	·865 11	·186 79	55
54	5·488	·840 16	·153 10	6	5·463	·840 90	·153 94	54
53	6·294	·816 69	·129 76	7	6·268	·817 45	·130 42	53
52	7·075	·793 95	·112 23	8	7·048	·794 71	·112 75	52
51	7·832	·771 89	·098 56	9	7·806	·772 63	·098 98	51
50	8·567	·750 47	·087 60	10	8·543	·751 19	·087 93	50
49	9·282	·729 66	·078 61	11	9·258	·730 34	·078 88	49
48	9·976	·709 43	·071 11	12	9·955	·710 05	·071 33	48
47	10·652	·689 74	·064 75	13	10·632	·690 32	·064 93	47
46	11·310	·670 58	·059 29	14	11·292	·671 11	·059 43	46
45	11·950	·651 93	·054 55	15	11·934	·652 40	·054 67	45
44	12·574	·633 76	·050 40	16	12·560	·634 19	·050 49	44
43	13·182	·616 07	·046 74	17	13·168	·616 45	·046 81	43
42	13·773	·598 83	·043 48	18	13·762	·599 18	·043 54	42
41	14·350	·582 05	·040 56	19	14·339	·582 36	·040 61	41
40	14·911	·565 71	·037 94	20	14·901	·565 98	·037 98	40
39	15·457	·549 79	·035 57	21	15·449	·550 04	·035 60	39
38	15·989	·534 29	·033 42	22	15·981	·534 52	·033 45	38
37	16·507	·519 21	·031 45	23	16·500	·519 42	·031 48	37
36	17·011	·504 53	·029 66	24	17·004	·504 73	·029 68	36
35	17·501	·490 26	·028 01	25	17·495	·490 44	·028 03	35
34	17·978	·476 37	·026 50	26	17·972	·476 54	·026 52	34
33	18·441	·462 87	·025 10	27	18·436	·463 04	·025 12	33
32	18·892	·449 75	·023 81	28	18·886	·449 92	·023 82	32
31	19·330	·437 00	·022 61	29	19·324	·437 17	·022 62	31
30	19·754	·424 63	·021 50	30	19·749	·424 80	·021 51	30
29	20·167	·412 61	·020 46	31	20·161	·412 78	·020 47	29
28	20·567	·400 95	·019 49	32	20·561	·401 13	·019 51	28
27	20·955	·389 65	·018 59	33	20·949	·389 83	·018 61	27
26	21·332	·378 68	·017 75	34	21·325	·378 87	·017 77	26
25	21·697	·368 06	·016 96	35	21·690	·368 26	·016 98	25
24	22·050	·357 78	·016 23	36	22·043	·357 97	·016 24	24
23	22·392	·347 82	·015 53	37	22·385	·348 02	·015 55	23
22	22·722	·338 18	·014 88	38	22·715	·338 39	·014 90	22
21	23·042	·328 86	·014 27	39	23·035	·329 07	·014 29	21
20	23·352	·319 85	·013 70	40	23·344	·320 07	·013 71	20
19	23·650	·311 15	·013 16	41	23·643	·311 37	·013 17	19
18	23·939	·302 75	·012 65	42	23·932	·302 96	·012 66	18
17	24·217	·294 64	·012 17	43	24·210	·294 85	·012 18	17
16	24·492	·286 65	·011 70	44	24·486	·286 82	·011 71	16
15	24·763	·278 75	·011 26	45	24·758	·278 89	·011 26	15

A1967–70 MORTALITY TABLE

FUNCTIONS FOR A LIMITED TERM — 3 per cent

Age [x]	SELECT $\ddot{a}_{[x]:\overline{n}\rceil}$	SELECT $A_{[x]:\overline{n}\rceil}$	SELECT $P_{[x]:\overline{n}\rceil}$	n	ULTIMATE $\ddot{a}_{x:\overline{n}\rceil}$	ULTIMATE $A_{x:\overline{n}\rceil}$	ULTIMATE $P_{x:\overline{n}\rceil}$	Age x
		$x+n=65$				$x+n=65$		
64	1·000	·970 87	·970 87	1	1·000	·970 87	·970 87	64
63	1·963	·942 83	·480 37	2	1·952	·943 15	·483 22	63
62	2·888	·915 89	·317 15	3	2·861	·916 66	·320 36	62
61	3·771	·890 16	·236 05	4	3·733	·891 26	·238 72	61
60	4·617	·865 51	·187 45	5	4·572	·866 82	·189 58	60
59	5·431	·841 81	·155 00	6	5·382	·843 26	·156 69	59
58	6·216	·818 96	·131 76	7	6·164	·820 47	·133 11	58
57	6·974	·796 88	·114 27	8	6·921	·798 41	·115 35	57
56	7·708	·775 49	·100 60	9	7·657	·776 99	·101 48	56
55	8·421	·754 73	·089 63	10	8·371	·756 19	·090 34	55
54	9·113	·734 56	·080 60	11	9·066	·735 95	·081 18	54
53	9·787	·714 94	·073 05	12	9·742	·716 25	·073 52	53
52	10·443	·695 83	·066 63	13	10·401	·697 05	·067 02	52
51	11·083	·677 21	·061 11	14	11·044	·678 33	·061 42	51
50	11·706	·659 04	·056 30	15	11·671	·660 07	·056 56	50
49	12·315	·641 32	·052 08	16	12·283	·642 25	·052 29	49
48	12·909	·624 02	·048 34	17	12·880	·624 86	·048 51	48
47	13·489	·607 13	·045 01	18	13·463	·607 88	·045 15	47
46	14·055	·590 64	·042 02	19	14·032	·591 31	·042 14	46
45	14·608	·574 54	·039 33	20	14·587	·575 13	·039 43	45
44	15·147	·558 82	·036 89	21	15·129	·559 34	·036 97	44
43	15·674	·543 47	·034 67	22	15·658	·543 94	·034 74	43
42	16·188	·528 49	·032 65	23	16·174	·528 90	·032 70	42
41	16·690	·513 88	·030 79	24	16·678	·514 24	·030 83	41
40	17·180	·499 62	·029 08	25	17·169	·499 94	·029 12	40
39	17·657	·485 72	·027 51	26	17·647	·486 01	·027 54	39
38	18·122	·472 17	·026 05	27	18·113	·472 43	·026 08	38
37	18·576	·458 96	·024 71	28	18·568	·459 20	·024 73	37
36	19·017	·446 09	·023 46	29	19·010	·446 31	·023 48	36
35	19·447	·433 57	·022 29	30	19·440	·433 77	·022 31	35
34	19·866	·421 38	·021 21	31	19·859	·421 57	·021 23	34
33	20·273	·409 52	·020 20	32	20·267	·409 71	·020 22	33
32	20·669	·397 99	·019 26	33	20·663	·398 18	·019 27	32
31	21·054	·386 79	·018 37	34	21·047	·386 97	·018 39	31
30	21·427	·375 90	·017 54	35	21·421	·376 09	·017 56	30
29	21·790	·365 34	·016 77	36	21·784	·365 53	·016 78	29
28	22·142	·355 09	·016 04	37	22·135	·355 28	·016 05	28
27	22·483	·345 15	·015 35	38	22·477	·345 34	·015 36	27
26	22·814	·335 51	·014 71	39	22·807	·335 71	·014 72	26
25	23·135	·326 17	·014 10	40	23·128	·326 38	·014 11	25
24	23·445	·317 14	·013 53	41	23·438	·317 35	·013 54	24
23	23·745	·308 39	·012 99	42	23·738	·308 61	·013 00	23
22	24·036	·299 93	·012 48	43	24·028	·300 15	·012 49	22
21	24·316	·291 76	·012 00	44	24·309	·291 98	·012 01	21
20	24·587	·283 86	·011 55	45	24·580	·284 09	·011 56	20
19	24·849	·276 24	·011 12	46	24·841	·276 47	·011 13	19
18	25·101	·268 89	·010 71	47	25·094	·269 12	·010 72	18
17	25·345	·261 81	·010 33	48	25·337	·262 03	·010 34	17
16	25·585	·254 79	·009 96	49	25·579	·254 98	·009 97	16
15	25·824	·247 85	·009 60	50	25·819	·247 99	·009 60	15

A1967–70 MORTALITY TABLE

4 per cent SELECT

Age [x]	$\ddot{a}_{[x]}$	$A_{[x]}$	$P_{[x]}$	Age [x]	Age [x]	$\ddot{a}_{[x]}$	$A_{[x]}$	$P_{[x]}$	Age [x]
0	24·240	·067 69	·002 79	0	55	14·420	·445 38	·030 89	55
1	24·187	·069 74	·002 88	1	56	14·082	·458 37	·032 55	56
2	24·130	·071 92	·002 98	2	57	13·742	·471 46	·034 31	57
3	24·070	·074 24	·003 08	3	58	13·400	·484 63	·036 17	58
4	24·006	·076 68	·003 19	4	59	13·056	·497 86	·038 13	59
5	23·939	·079 29	·003 31	5	60	12·710	·511 14	·040 21	60
6	23·867	·082 02	·003 44	6	61	12·365	·524 43	·042 41	61
7	23·792	·084 91	·003 57	7	62	12·019	·537 72	·044 74	62
8	23·714	·087 92	·003 71	8	63	11·674	·550 99	·047 20	63
9	23·632	·091 08	·003 85	9	64	11·331	·564 20	·049 79	64
10	23·546	·094 39	·004 01	10	65	10·989	·577 34	·052 54	65
11	23·456	·097 84	·004 17	11	66	10·650	·590 39	·055 44	66
12	23·363	·101 43	·004 34	12	67	10·314	·603 31	·058 50	67
13	23·266	·105 14	·004 52	13	68	9·981	·616 10	·061 72	68
14	23·167	·108 98	·004 70	14	69	9·653	·628 72	·065 13	69
15	23·065	·112 88	·004 89	15	70	9·330	·641 15	·068 72	70
16	22·963	·116 82	·005 09	16	71	9·012	·653 37	·072 50	71
17	22·861	·120 74	·005 28	17	72	8·701	·665 36	·076 47	72
18	22·759	·124 65	·005 48	18	73	8·395	·677 11	·080 65	73
19	22·652	·128 78	·005 69	19	74	8·097	·688 58	·085 04	74
20	22·539	·133 12	·005 91	20	75	7·806	·699 78	·089 65	75
21	22·420	·137 69	·006 14	21	76	7·523	·710 67	·094 47	76
22	22·295	·142 49	·006 39	22	77	7·248	·721 24	·099 51	77
23	22·164	·147 52	·006 66	23	78	6·981	·731 50	·104 78	78
24	22·027	·152 80	·006 94	24	79	6·723	·741 41	·110 27	79
25	21·884	·158 32	·007 23	25	80	6·475	·750 98	·115 99	80
26	21·734	·164 08	·007 55	26					
27	21·577	·170 10	·007 88	27					
28	21·414	·176 38	·008 24	28					
29	21·244	·182 92	·008 61	29					
30	21·067	·189 73	·009 01	30					
31	20·883	·196 80	·009 42	31					
32	20·692	·204 14	·009 87	32					
33	20·494	·211 76	·010 33	33					
34	20·289	·219 65	·010 83	34					
35	20·077	·227 82	·011 35	35					
36	19·857	·236 27	·011 90	36					
37	19·630	·245 00	·012 48	37					
38	19·396	·254 00	·013 10	38					
39	19·155	·263 28	·013 75	39					
40	18·906	·272 84	·014 43	40					
41	18·651	·282 67	·015 16	41					
42	18·388	·292 77	·015 92	42					
43	18·119	·303 13	·016 73	43					
44	17·842	·313 76	·017 59	44					
45	17·559	·324 64	·018 49	45					
46	17·270	·335 76	·019 44	46					
47	16·975	·347 13	·020 45	47					
48	16·673	·358 73	·021 52	48					
49	16·366	·370 54	·022 64	49					
50	16·053	·382 57	·023 83	50					
51	15·735	·394 79	·025 09	51					
52	15·413	·407 20	·026 42	52					
53	15·086	·419 78	·027 83	53					
54	14·755	·432 51	·029 31	54					

A1967–70 MORTALITY TABLE

ULTIMATE

4 per cent

Age x	$\ddot{a}_x$	A_x	P_x	Age x	Age x	$\ddot{a}_x$	A_x	P_x	Age x
0	24·235	·067 88	·002 80	0	55	14·327	·448 96	·031 34	55
1	24·182	·069 92	·002 89	1	56	13·978	·462 38	·033 08	56
2	24·126	·072 08	·002 99	2	57	13·626	·475 94	·034 93	57
3	24·066	·074 38	·003 09	3	58	13·270	·489 62	·036 90	58
4	24·003	·076 82	·003 20	4	59	12·912	·503 40	·038 99	59
5	23·935	·079 41	·003 32	5	60	12·551	·517 26	·041 21	60
6	23·864	·082 14	·003 44	6	61	12·189	·531 18	·043 58	61
7	23·790	·085 01	·003 57	7	62	11·826	·545 15	·046 10	62
8	23·711	·088 03	·003 71	8	63	11·463	·559 13	·048 78	63
9	23·629	·091 18	·003 86	9	64	11·099	·573 10	·051 63	64
10	23·543	·094 49	·004 01	10	65	10·737	·587 05	·054 68	65
11	23·454	·097 93	·004 18	11	66	10·376	·600 94	·057 92	66
12	23·361	·101 52	·004 35	12	67	10·016	·614 76	·061 38	67
13	23·264	·105 25	·004 52	13	68	9·660	·628 47	·065 06	68
14	23·163	·109 10	·004 71	14	69	9·307	·642 06	·068 99	69
15	23·061	·113 05	·004 90	15	70	8·957	·655 50	·073 18	70
16	22·957	·117 03	·005 10	16	71	8·612	·668 76	·077 65	71
17	22·854	·121 00	·005 29	17	72	8·272	·681 83	·082 42	72
18	22·752	·124 92	·005 49	18	73	7·938	·694 69	·087 51	73
19	22·645	·129 05	·005 70	19	74	7·610	·707 30	·092 94	74
20	22·532	·133 39	·005 92	20	75	7·289	·719 66	·098 73	75
21	22·413	·137 96	·006 16	21	76	6·975	·731 73	·104 91	76
22	22·288	·142 76	·006 41	22	77	6·669	·743 51	·111 49	77
23	22·157	·147 79	·006 67	23	78	6·371	·754 98	·118 51	78
24	22·020	·153 06	·006 95	24	79	6·081	·766 11	·125 98	79
25	21·877	·158 57	·007 25	25	80	5·800	·776 91	·133 94	80
26	21·727	·164 33	·007 56	26	81	5·529	·787 35	·142 41	81
27	21·571	·170 35	·007 90	27	82	5·267	·797 43	·151 41	82
28	21·408	·176 62	·008 25	28	83	5·014	·807 14	·160 97	83
29	21·238	·183 16	·008 62	29	84	4·772	·816 48	·171 11	84
30	21·061	·189 96	·009 02	30	85	4·539	·825 43	·181 86	85
31	20·877	·197 04	·009 44	31	86	4·316	·834 00	·193 24	86
32	20·686	·204 39	·009 88	32	87	4·103	·842 19	·205 25	87
33	20·488	·212 01	·010 35	33	88	3·900	·849 99	·217 93	88
34	20·282	·219 91	·010 84	34	89	3·707	·857 41	·231 28	89
35	20·069	·228 10	·011 37	35	90	3·524	·864 46	·245 31	90
36	19·849	·236 57	·011 92	36	91	3·350	·871 14	·260 02	91
37	19·621	·245 33	·012 50	37	92	3·186	·877 46	·275 41	92
38	19·386	·254 37	·013 12	38	93	3·031	·883 42	·291 46	93
39	19·144	·263 70	·013 77	39	94	2·885	·889 04	·308 17	94
40	18·894	·273 31	·014 47	40	95	2·748	·894 33	·325 50	95
41	18·637	·283 21	·015 20	41	96	2·619	·899 29	·343 43	96
42	18·372	·293 39	·015 97	42	97	2·498	·903 94	·361 93	97
43	18·100	·303 85	·016 79	43	98	2·384	·908 29	·380 93	98
44	17·821	·314 59	·017 65	44	99	2·279	·912 36	·400 40	99
45	17·534	·325 60	·018 57	45	100	2·180	·916 15	·420 26	100
46	17·241	·336 87	·019 54	46	101	2·088	·919 69	·440 45	101
47	16·941	·348 41	·020 57	47	102	2·003	·922 98	·460 90	102
48	16·635	·360 20	·021 65	48	103	1·923	·926 04	·481 54	103
49	16·322	·372 23	·022 81	49	104	1·849	·928 87	·502 27	104
50	16·003	·384 50	·024 03	50	105	1·781	·931 50	·523 02	105
51	15·678	·396 99	·025 32	51	106	1·718	·933 93	·543 70	106
52	15·348	·409 69	·026 69	52	107	1·659	·936 18	·564 23	107
53	15·012	·422 60	·028 15	53	108	1·605	·938 26	·584 53	108
54	14·672	·435 69	·029 70	54	109	1·555	·940 18	·604 53	109

4 per cent

FUNCTIONS FOR A LIMITED TERM

SELECT

Age [x]	$\ddot{a}_{[x]:\overline{n}\rceil}$	$A_{[x]:\overline{n}\rceil}$	$P_{[x]:\overline{n}\rceil}$	n	$\ddot{a}_{[x]:\overline{n}\rceil}$	$A_{[x]:\overline{n}\rceil}$	$P_{[x]:\overline{n}\rceil}$	Age [x]
		$x+n=55$				$x+n=60$		
54	1·000	·961 54	·961 54	1	1·000	·961 54	·961 54	59
53	1·958	·924 70	·472 28	2	1·956	·924 77	·472 78	58
52	2·875	·889 41	·309 33	3	2·869	·889 64	·310 06	57
51	3·753	·855 67	·228 02	4	3·739	·856 19	·228 99	56
50	4·593	·823 35	·179 26	5	4·569	·824 26	·180 40	55
49	5·399	·792 35	·146 76	6	5·363	·793 72	·147 99	54
48	6·172	·762 61	·123 55	7	6·124	·764 46	·124 83	53
47	6·915	·734 03	·106 15	8	6·854	·736 39	·107 44	52
46	7·630	·706 56	·092 61	9	7·555	·709 41	·093 90	51
45	8·317	·680 13	·081 78	10	8·230	·683 47	·083 05	50
44	8·978	·654 70	·072 92	11	8·879	·658 49	·074 16	49
43	9·614	·630 22	·065 55	12	9·505	·634 44	·066 75	48
42	10·227	·606 65	·059 32	13	10·108	·611 25	·060 47	47
41	10·817	·583 95	·053 98	14	10·689	·588 89	·055 09	46
40	11·386	·562 08	·049 37	15	11·250	·567 32	·050 43	45
39	11·934	·541 01	·045 33	16	11·791	·546 50	·046 35	44
38	12·461	·520 72	·041 79	17	12·313	·526 42	·042 75	43
37	12·969	·501 18	·038 64	18	12·817	·507 04	·039 56	42
36	13·459	·482 36	·035 84	19	13·303	·488 34	·036 71	41
35	13·930	·464 23	·033 33	20	13·772	·470 29	·034 15	40
34	14·384	·446 78	·031 06	21	14·225	·452 88	·031 84	39
33	14·820	·429 99	·029 01	22	14·662	·436 08	·029 74	38
32	15·240	·413 83	·027 15	23	15·083	·419 88	·027 84	37
31	15·645	·398 28	·025 46	24	15·489	·404 26	·026 10	36
30	16·033	·383 33	·023 91	25	15·881	·389 21	·024 51	35
29	16·407	·368 96	·022 49	26	16·258	·374 71	·023 05	34
28	16·766	·355 15	·021 18	27	16·621	·360 74	·021 70	33
27	17·111	·341 89	·019 98	28	16·971	·347 29	·020 46	32
26	17·442	·329 15	·018 87	29	17·307	·334 34	·019 32	31
25	17·760	·316 92	·017 84	30	17·631	·321 89	·018 26	30
24	18·065	·305 19	·016 89	31	17·942	·309 92	·017 27	29
23	18·357	·293 95	·016 01	32	18·241	·298 42	·016 36	28
22	18·638	·283 17	·015 19	33	18·528	·287 37	·015 51	27
21	18·906	·272 85	·014 43	34	18·804	·276 77	·014 72	26
20	19·163	·262 96	·013 72	35	19·069	·266 59	·013 98	25
19	19·409	·253 51	·013 06	36	19·322	·256 83	·013 29	24
18	19·644	·244 46	·012 44	37	19·565	·247 48	·012 65	23
17	19·869	·235 82	·011 87	38	19·798	·238 53	·012 05	22
16	20·088	·227 38	·011 32	39	20·021	·229 96	·011 49	21
15	20·303	·219 12	·010 79	40	20·234	·221 76	·010 96	20
				41	20·438	·213 92	·010 47	19
				42	20·633	·206 44	·010 01	18
				43	20·818	·199 30	·009 57	17
				44	21·000	·192 29	·009 16	16
				45	21·179	·185 40	·008 75	15

A1967–70 MORTALITY TABLE

FUNCTIONS FOR A LIMITED TERM — 4 per cent

SELECT

Age [x]	$\ddot{a}_{[x]:\overline{n}\rceil}$	$A_{[x]:\overline{n}\rceil}$	$P_{[x]:\overline{n}\rceil}$	n	$\ddot{a}_{[x]:\overline{n}\rceil}$	$A_{[x]:\overline{n}\rceil}$	$P_{[x]:\overline{n}\rceil}$	Age [x]
		$x+n=65$				$x+n=70$		
64	1·000	·961 54	·961 54	1	1·000	·961 54	·961 54	69
63	1·953	·924 87	·473 45	2	1·950	·925 00	·474 34	68
62	2·861	·889 97	·311 08	3	2·849	·890 41	·312 48	67
61	3·719	·856 97	·230 44	4	3·690	·858 08	·232 55	66
60	4·533	·825 65	·182 13	5	4·480	·827 69	·184 75	65
59	5·309	·795 82	·149 91	6	5·227	·798 95	·152 85	64
58	6·049	·767 34	·126 85	7	5·937	·771 66	·129 98	63
57	6·758	·740 07	·109 50	8	6·614	·745 63	·112 74	62
56	7·439	·713 90	·095 97	9	7·262	·720 70	·099 25	61
55	8·093	·688 74	·085 11	10	7·884	·696 77	·088 38	60
54	8·722	·664 52	·076 19	11	8·483	·673 73	·079 42	59
53	9·329	·641 17	·068 73	12	9·061	·651 49	·071 90	58
52	9·915	·618 64	·062 39	13	9·620	·630 00	·065 49	57
51	10·481	·596 88	·056 95	14	10·161	·609 19	·059 95	56
50	11·028	·575 84	·052 22	15	10·686	·589 02	·055 12	55
49	11·557	·555 50	·048 07	16	11·194	·569 45	·050 87	54
48	12·069	·535 82	·044 40	17	11·688	·550 45	·047 09	53
47	12·564	·516 78	·041 13	18	12·168	·532 00	·043 72	52
46	13·043	·498 35	·038 21	19	12·634	·514 07	·040 69	51
45	13·507	·480 51	·035 58	20	13·087	·496 64	·037 95	50
44	13·955	·463 25	·033 20	21	13·528	·479 71	·035 46	49
43	14·390	·446 55	·031 03	22	13·955	·463 25	·033 19	48
42	14·810	·430 40	·029 06	23	14·371	·447 26	·031 12	47
41	15·216	·414 77	·027 26	24	14·775	·431 73	·029 22	46
40	15·609	·399 66	·025 61	25	15·167	·416 64	·027 47	45
39	15·988	·385 06	·024 08	26	15·548	·401 99	·025 85	44
38	16·355	·370 95	·022 68	27	15·918	·387 78	·024 36	43
37	16·709	·357 33	·021 38	28	16·276	·374 00	·022 98	42
36	17·051	·344 18	·020 18	29	16·623	·360 64	·021 69	41
35	17·381	·331 48	·019 07	30	16·960	·347 70	·020 50	40
34	17·700	·319 25	·018 04	31	17·286	·335 16	·019 39	39
33	18·006	·307 45	·017 07	32	17·601	·323 03	·018 35	38
32	18·302	·296 09	·016 18	33	17·906	·311 30	·017 38	37
31	18·586	·285 15	·015 34	34	18·201	·299 96	·016 48	36
30	18·860	·274 62	·014 56	35	18·486	·289 01	·015 63	35
29	19·123	·264 50	·013 83	36	18·761	·278 44	·014 84	34
28	19·376	·254 77	·013 15	37	19·026	·268 24	·014 10	33
27	19·619	·245 43	·012 51	38	19·281	·258 41	·013 40	32
26	19·852	·236 46	·011 91	39	19·527	·248 94	·012 75	31
25	20·076	·227 86	·011 35	40	19·764	·239 83	·012 13	30
24	20·290	·219 62	·010 82	41	19·992	·231 07	·011 56	29
23	20·495	·211 73	·010 33	42	20·211	·222 65	·011 02	28
22	20·691	·204 18	·009 87	43	20·421	·214 56	·010 51	27
21	20·879	·196 95	·009 43	44	20·623	·206 80	·010 03	26
20	21·059	·190 05	·009 03	45	20·817	·199 36	·009 58	25
19	21·230	·183 47	·008 64	46	21·002	·192 24	·009 15	24
18	21·393	·177 19	·008 28	47	21·179	·185 42	·008 75	23
17	21·549	·171 20	·007 94	48	21·349	·178 90	·008 38	22
16	21·702	·165 30	·007 62	49	21·511	·172 67	·008 03	21
15	21·854	·159 46	·007 30	50	21·665	·166 73	·007 70	20
				51	21·813	·161 06	·007 38	19
				52	21·953	·155 66	·007 09	18
				53	22·086	·150 52	·006 82	17
				54	22·219	·145 43	·006 55	16
				55	22·350	·140 38	·006 28	15

4 per cent

FUNCTIONS FOR A LIMITED TERM

ULTIMATE

Age x	$\ddot{a}_{x:\overline{n}\rceil}$	$A_{x:\overline{n}\rceil}$	$P_{x:\overline{n}\rceil}$	n	$\ddot{a}_{x:\overline{n}\rceil}$	$A_{x:\overline{n}\rceil}$	$P_{x:\overline{n}\rceil}$	Age x
		$x+n=55$				$x+n=60$		
54	1·000	·961 54	·961 54	1	1·000	·961 54	·961 54	59
53	1·955	·924 81	·473 04	2	1·950	·924 99	·474 28	58
52	2·869	·889 67	·310 15	3	2·856	·890 17	·311 73	57
51	3·743	·856 02	·228 68	4	3·720	·856 93	·230 36	56
50	4·582	·823 76	·179 78	5	4·547	·825 13	·181 48	55
49	5·387	·792 80	·147 17	6	5·339	·794 66	·148 85	54
48	6·160	·763 06	·123 87	7	6·099	·765 43	·125 51	53
47	6·904	·734 48	·106 39	8	6·829	·737 35	·107 98	52
46	7·618	·706 99	·092 80	9	7·531	·710 35	·094 33	51
45	8·306	·680 54	·081 93	10	8·207	·684 36	·083 39	50
44	8·968	·655 08	·073 05	11	8·857	·659 34	·074 44	49
43	9·605	·630 57	·065 65	12	9·484	·635 22	·066 97	48
42	10·219	·606 97	·059 40	13	10·089	·611 96	·060 66	47
41	10·810	·584 24	·054 05	14	10·672	·589 54	·055 24	46
40	11·379	·562 35	·049 42	15	11·235	·567 90	·050 55	45
39	11·927	·541 26	·045 38	16	11·777	·547 03	·046 45	44
38	12·455	·520 95	·041 83	17	12·301	·526 89	·042 83	43
37	12·964	·501 39	·038 68	18	12·806	·507 46	·039 63	42
36	13·454	·482 55	·035 87	19	13·294	·488 71	·036 76	41
35	13·925	·464 42	·033 35	20	13·764	·470 62	·034 19	40
34	14·379	·446 96	·031 08	21	14·217	·453 18	·031 87	39
33	14·816	·430 17	·029 03	22	14·655	·436 35	·029 78	38
32	15·236	·414 00	·027 17	23	15·077	·420 13	·027 87	37
31	15·640	·398 46	·025 48	24	15·483	·404 49	·026 12	36
30	16·029	·383 51	·023 93	25	15·875	·389 43	·024 53	35
29	16·402	·369 14	·022 51	26	16·252	·374 91	·023 07	34
28	16·761	·355 34	·021 20	27	16·616	·360 94	·021 72	33
27	17·106	·342 08	·020 00	28	16·965	·347 48	·020 48	32
26	17·437	·329 35	·018 89	29	17·302	·334 54	·019 34	31
25	17·755	·317 13	·017 86	30	17·626	·322 09	·018 27	30
24	18·059	·305 41	·016 91	31	17·937	·310 12	·017 29	29
23	18·352	·294 16	·016 03	32	18·236	·298 62	·016 38	28
22	18·632	·283 39	·015 21	33	18·523	·287 58	·015 53	27
21	18·900	·273 07	·014 45	34	18·799	·276 98	·014 73	26
20	19·157	·263 19	·013 74	35	19·063	·266 81	·014 00	25
19	19·403	·253 74	·013 08	36	19·316	·257 06	·013 31	24
18	19·638	·244 69	·012 46	37	19·559	·247 71	·012 66	23
17	19·863	·236 05	·011 88	38	19·792	·238 76	·012 06	22
16	20·083	·227 56	·011 33	39	20·015	·230 20	·011 50	21
15	20·299	·219 26	·010 80	40	20·228	·222 00	·010 97	20
				41	20·432	·214 17	·010 48	19
				42	20·626	·206 68	·010 02	18
				43	20·812	·199 54	·009 59	17
				44	20·995	·192 49	·009 17	16
				45	21·176	·185 56	·008 76	15

A1967–70 MORTALITY TABLE

FUNCTIONS FOR A LIMITED TERM — 4 per cent

ULTIMATE

Age x	$\ddot{a}_{x:\overline{n}\rceil}$	$A_{x:\overline{n}\rceil}$	$P_{x:\overline{n}\rceil}$	n	$\ddot{a}_{x:\overline{n}\rceil}$	$A_{x:\overline{n}\rceil}$	$P_{x:\overline{n}\rceil}$	Age x
		$x+n=65$				$x+n=70$		
64	1·000	·961 54	·961 54	1	1·000	·961 54	·961 54	69
63	1·943	·925 28	·476 30	2	1·931	·925 75	·479 54	68
62	2·835	·890 97	·314 30	3	2·802	·892 23	·318 44	67
61	3·682	·858 38	·233 12	4	3·623	·860 67	·237 58	66
60	4·489	·827 33	·184 29	5	4·400	·830 78	·188 83	65
59	5·261	·797 67	·151 63	6	5·138	·802 37	·156 15	64
58	5·999	·769 26	·128 23	7	5·844	·775 24	·132 66	63
57	6·708	·742 00	·110 62	8	6·519	·749 26	·114 93	62
56	7·389	·715 80	·096 87	9	7·168	·724 30	·101 05	61
55	8·045	·690 58	·085 84	10	7·793	·700 27	·089 86	60
54	8·677	·666 27	·076 78	11	8·396	·677 08	·080 65	59
53	9·287	·642 81	·069 22	12	8·979	·654 67	·072 91	58
52	9·876	·620 16	·062 79	13	9·543	·632 98	·066 33	57
51	10·445	·598 27	·057 28	14	10·089	·611 96	·060 65	56
50	10·995	·577 11	·052 49	15	10·619	·591 57	·055 71	55
49	11·527	·556 64	·048 29	16	11·134	·571 78	·051 36	54
48	12·042	·536 85	·044 58	17	11·633	·552 57	·047 50	53
47	12·540	·517 69	·041 28	18	12·118	·533 91	·044 06	52
46	13·022	·499 16	·038 33	19	12·589	·515 79	·040 97	51
45	13·488	·481 23	·035 68	20	13·047	·498 18	·038 18	50
44	13·939	·463 89	·033 28	21	13·492	·481 08	·035 66	49
43	14·375	·447 11	·031 10	22	13·924	·464 46	·033 36	48
42	14·797	·430 89	·029 12	23	14·344	·448 33	·031 26	47
41	15·205	·415 21	·027 31	24	14·751	·432 66	·029 33	46
40	15·599	·400 05	·025 65	25	15·146	·417 46	·027 56	45
39	15·980	·385 40	·024 12	26	15·530	·402 71	·025 93	44
38	16·347	·371 26	·022 71	27	15·901	·388 41	·024 43	43
37	16·702	·357 61	·021 41	28	16·262	·374 55	·023 03	42
36	17·045	·344 43	·020 21	29	16·611	·361 12	·021 74	41
35	17·375	·331 72	·019 09	30	16·949	·348 12	·020 54	40
34	17·694	·319 47	·018 06	31	17·276	·335 53	·019 42	39
33	18·001	·307 67	·017 09	32	17·593	·323 36	·018 38	38
32	18·296	·296 30	·016 19	33	17·898	·311 60	·017 41	37
31	18·581	·285 36	·015 36	34	18·194	·300 23	·016 50	36
30	18·854	·274 83	·014 58	35	18·479	·289 26	·015 65	35
29	19·118	·264 71	·013 85	36	18·754	·278 68	·014 86	34
28	19·370	·254 99	·013 16	37	19·020	·268 47	·014 12	33
27	19·613	·245 65	·012 52	38	19·275	·258 64	·013 42	32
26	19·846	·236 69	·011 93	39	19·522	·249 17	·012 76	31
25	20·070	·228 10	·011 37	40	19·759	·240 05	·012 15	30
24	20·284	·219 86	·010 84	41	19·986	·231 29	·011 57	29
23	20·489	·211 97	·010 35	42	20·205	·222 88	·011 03	28
22	20·685	·204 42	·009 88	43	20·415	·214 79	·010 52	27
21	20·873	·197 20	·009 45	44	20·617	·207 04	·010 04	26
20	21·052	·190 31	·009 04	45	20·810	·199 61	·009 59	25
19	21·223	·183 72	·008 66	46	20·995	·192 49	·009 17	24
18	21·387	·177 44	·008 30	47	21·173	·185 67	·008 77	23
17	21·542	·171 45	·007 96	48	21·342	·179 15	·008 39	22
16	21·697	·165 50	·007 63	49	21·504	·172 93	·008 04	21
15	21·850	·159 62	·007 31	50	21·658	·166 98	·007 71	20
				51	21·806	·161 32	·007 40	19
				52	21·946	·155 92	·007 10	18
				53	22·080	·150 78	·006 83	17
				54	22·213	·145 64	·006 56	16
				55	22·346	·140 54	·006 29	15

A1967–70 MORTALITY TABLE

5 per cent SELECT

Age [x]	$\ddot{a}_{[x]}$	$A_{[x]}$	$P_{[x]}$	Age [x]
0	20·182	·038 95	·001 93	0
1	20·155	·040 22	·002 00	1
2	20·126	·041 60	·002 07	2
3	20·095	·043 10	·002 14	3
4	20·061	·044 72	·002 23	4
5	20·024	·046 48	·002 32	5
6	19·985	·048 35	·002 42	6
7	19·943	·050 36	·002 53	7
8	19·898	·052 48	·002 64	8
9	19·851	·054 73	·002 76	9
10	19·800	·057 13	·002 89	10
11	19·748	·059 64	·003 02	11
12	19·692	·062 28	·003 16	12
13	19·634	·065 03	·003 31	13
14	19·574	·067 90	·003 47	14
15	19·513	·070 82	·003 63	15
16	19·451	·073 76	·003 79	16
17	19·390	·076 66	·003 95	17
18	19·330	·079 53	·004 11	18
19	19·265	·082 60	·004 29	19
20	19·196	·085 89	·004 47	20
21	19·123	·089 39	·004 67	21
22	19·045	·093 11	·004 89	22
23	18·962	·097 06	·005 12	23
24	18·874	·101 25	·005 36	24
25	18·781	·105 68	·005 63	25
26	18·682	·110 37	·005 91	26
27	18·578	·115 31	·006 21	27
28	18·469	·120 52	·006 53	28
29	18·354	·125 99	·006 86	29
30	18·233	·131 75	·007 23	30
31	18·107	·137 78	·007 61	31
32	17·974	·144 10	·008 02	32
33	17·835	·150 72	·008 45	33
34	17·690	·157 64	·008 91	34
35	17·538	·164 85	·009 40	35
36	17·380	·172 38	·009 92	36
37	17·216	·180 21	·010 47	37
38	17·044	·188 36	·011 05	38
39	16·867	·196 83	·011 67	39
40	16·682	·205 61	·012 32	40
41	16·491	·214 70	·013 02	41
42	16·294	·224 12	·013 76	42
43	16·089	·233 85	·014 53	43
44	15·878	·243 90	·015 36	44
45	15·661	·254 25	·016 24	45
46	15·437	·264 92	·017 16	46
47	15·206	·275 89	·018 14	47
48	14·970	·287 15	·019 18	48
49	14·727	·298 70	·020 28	49
50	14·479	·310 53	·021 45	50
51	14·225	·322 63	·022 68	51
52	13·965	·334 98	·023 99	52
53	13·701	·347 58	·025 37	53
54	13·431	·360 41	·026 83	54
55	13·157	·373 46	·028 38	55
56	12·879	·386 70	·030 02	56
57	12·598	·400 12	·031 76	57
58	12·312	·413 70	·033 60	58
59	12·024	·427 41	·035 55	59
60	11·734	·441 24	·037 60	60
61	11·441	·455 17	·039 78	61
62	11·148	·469 16	·042 09	62
63	10·853	·483 20	·044 52	63
64	10·558	·497 25	·047 10	64
65	10·263	·511 29	·049 82	65
66	9·969	·525 30	·052 70	66
67	9·676	·539 25	·055 73	67
68	9·385	·553 10	·058 93	68
69	9·096	·566 83	·062 31	69
70	8·811	·580 43	·065 87	70
71	8·529	·593 85	·069 62	71
72	8·252	·607 07	·073 57	72
73	7·979	·620 07	·077 72	73
74	7·711	·632 82	·082 07	74
75	7·448	·645 31	·086 64	75
76	7·192	·657 51	·091 42	76
77	6·943	·669 40	·096 42	77
78	6·700	·680 97	·101 64	78
79	6·464	·692 19	·107 08	79
80	6·236	·703 06	·112 75	80

A1967–70 MORTALITY TABLE

ULTIMATE

5 per cent

Age x	$\ddot{a}_x$	A_x	P_x	Age x	Age x	$\ddot{a}_x$	A_x	P_x	Age x
0	20·178	·039 14	·001 94	0	55	13·073	·377 46	·028 87	55
1	20·152	·040 40	·002 00	1	56	12·785	·391 19	·030 60	56
2	20·123	·041 77	·002 08	2	57	12·492	·405 15	·032 43	57
3	20·092	·043 26	·002 15	3	58	12·194	·419 31	·034 39	58
4	20·058	·044 86	·002 24	4	59	11·893	·433 66	·036 46	59
5	20·021	·046 60	·002 33	5	60	11·588	·448 17	·038 67	60
6	19·982	·048 47	·002 43	6	61	11·281	·462 83	·041 03	61
7	19·940	·050 46	·002 53	7	62	10·970	·477 60	·043 54	62
8	19·896	·052 59	·002 64	8	63	10·658	·492 47	·046 21	63
9	19·848	·054 84	·002 76	9	64	10·344	·507 42	·049 05	64
10	19·798	·057 22	·002 89	10	65	10·030	·522 40	·052 09	65
11	19·746	·059 74	·003 03	11	66	9·714	·537 41	·055 32	66
12	19·690	·062 38	·003 17	12	67	9·400	·552 40	·058 77	67
13	19·632	·065 15	·003 32	13	68	9·086	·567 35	·062 45	68
14	19·571	·068 03	·003 48	14	69	8·773	·582 24	·066 37	69
15	19·509	·071 00	·003 64	15	70	8·462	·597 03	·070 55	70
16	19·446	·073 98	·003 80	16	71	8·154	·611 70	·075 02	71
17	19·384	·076 93	·003 97	17	72	7·850	·626 21	·079 78	72
18	19·324	·079 81	·004 13	18	73	7·549	·640 55	·084 86	73
19	19·259	·082 89	·004 30	19	74	7·252	·654 67	·090 28	74
20	19·190	·086 17	·004 49	20	75	6·960	·668 56	·096 05	75
21	19·117	·089 67	·004 69	21	76	6·674	·682 19	·102 22	76
22	19·039	·093 39	·004 91	22	77	6·394	·695 54	·108 79	77
23	18·956	·097 34	·005 14	23	78	6·120	·708 58	·115 79	78
24	18·868	·101 53	·005 38	24	79	5·853	·721 30	·123 24	79
25	18·775	·105 95	·005 64	25	80	5·593	·733 67	·131 18	80
26	18·677	·110 63	·005 92	26	81	5·341	·745 68	·139 62	81
27	18·573	·115 57	·006 22	27	82	5·097	·757 31	·148 59	82
28	18·464	·120 77	·006 54	28	83	4·861	·768 54	·158 12	83
29	18·349	·126 25	·006 88	29	84	4·633	·779 38	·168 22	84
30	18·228	·132 00	·007 24	30	85	4·414	·789 80	·178 93	85
31	18·101	·138 04	·007 63	31	86	4·204	·799 81	·190 25	86
32	17·968	·144 36	·008 03	32	87	4·003	·809 40	·202 22	87
33	17·829	·150 99	·008 47	33	88	3·810	·818 56	·214 83	88
34	17·684	·157 92	·008 93	34	89	3·627	·827 30	·228 11	89
35	17·532	·165 15	·009 42	35	90	3·452	·835 62	·242 07	90
36	17·373	·172 70	·009 94	36	91	3·286	·843 52	·256 69	91
37	17·208	·180 57	·010 49	37	92	3·129	·851 01	·271 99	92
38	17·036	·188 76	·011 08	38	93	2·980	·858 09	·287 95	93
39	16·857	·197 27	·011 70	39	94	2·840	·864 78	·304 55	94
40	16·672	·206 12	·012 36	40	95	2·707	·871 09	·321 77	95
41	16·479	·215 29	·013 06	41	96	2·583	·877 02	·339 58	96
42	16·279	·224 80	·013 81	42	97	2·466	·882 59	·357 95	97
43	16·073	·234 63	·014 60	43	98	2·356	·887 81	·376 82	98
44	15·859	·244 80	·015 44	44	99	2·253	·892 69	·396 14	99
45	15·639	·255 31	·016 33	45	100	2·158	·897 26	·415 85	100
46	15·411	·266 14	·017 27	46	101	2·068	·901 51	·435 89	101
47	15·177	·277 29	·018 27	47	102	1·985	·905 48	·456 19	102
48	14·936	·288 77	·019 33	48	103	1·907	·909 17	·476 66	103
49	14·688	·300 56	·020 46	49	104	1·835	·912 60	·497 22	104
50	14·434	·312 66	·021 66	50	105	1·769	·915 78	·517 80	105
51	14·174	·325 06	·022 93	51	106	1·707	·918 73	·538 32	106
52	13·907	·337 75	·024 29	52	107	1·649	·921 46	·558 68	107
53	13·635	·350 72	·025 72	53	108	1·596	·923 98	·578 81	108
54	13·357	·363 96	·027 25	54	109	1·547	·926 31	·598 63	109

A1967–70 MORTALITY TABLE

5 per cent FUNCTIONS FOR A LIMITED TERM

Age [x]	SELECT $\ddot{a}_{[x]:\overline{n}\rceil}$	SELECT $A_{[x]:\overline{n}\rceil}$	SELECT $P_{[x]:\overline{n}\rceil}$	n	ULTIMATE $\ddot{a}_{x:\overline{n}\rceil}$	ULTIMATE $A_{x:\overline{n}\rceil}$	ULTIMATE $P_{x:\overline{n}\rceil}$	Age x
		$x+n=60$				$x+n=60$		
59	1·000	·952 38	·952 38	1	1·000	·952 38	·952 38	59
58	1·947	·907 29	·466 01	2	1·941	·907 56	·467 51	58
57	2·843	·864 63	·304 14	3	2·829	·865 27	·305 81	57
56	3·688	·824 38	·223 53	4	3·669	·825 27	·224 91	56
55	4·487	·786 33	·175 25	5	4·465	·787 38	·176 34	55
54	5·244	·750 28	·143 07	6	5·220	·751 41	·143 94	54
53	5·963	·716 07	·120 09	7	5·938	·717 23	·120 78	53
52	6·645	·683 55	·102 86	8	6·621	·684 70	·103 41	52
51	7·296	·652 59	·089 45	9	7·272	·653 71	·089 89	51
50	7·915	·623 10	·078 73	10	7·893	·624 16	·079 08	50
49	8·506	·594 97	·069 95	11	8·485	·595 96	·070 24	49
48	9·069	·568 13	·062 64	12	9·050	·569 04	·062 88	48
47	9·608	·542 49	·056 46	13	9·590	·543 32	·056 65	47
46	10·122	·517 99	·051 17	14	10·106	·518 74	·051 33	46
45	10·614	·494 57	·046 60	15	10·600	·495 25	·046 72	45
44	11·084	·472 18	·042 60	16	11·071	·472 79	·042 70	44
43	11·534	·450 77	·039 08	17	11·522	·451 31	·039 17	43
42	11·964	·430 30	·035 97	18	11·954	·430 78	·036 04	42
41	12·375	·410 72	·033 19	19	12·366	·411 15	·033 25	41
40	12·768	·392 00	·030 70	20	12·760	·392 38	·030 75	40
39	13·144	·374 10	·028 46	21	13·137	·374 44	·028 50	39
38	13·503	·356 98	·026 44	22	13·497	·357 29	·026 47	38
37	13·847	·340 63	·024 60	23	13·841	·340 91	·024 63	37
36	14·175	·325 01	·022 93	24	14·169	·325 26	·022 96	36
35	14·488	·310.08	·021 40	25	14·483	·310 33	·021 43	35
34	14·787	·295 84	·020 01	26	14·783	·296 07	·020 03	34
33	15·073	·282 24	·018 73	27	15·068	·282 46	·018 75	33
32	15·345	·269 27	·017 55	28	15·341	·269 49	·017 57	32
31	15·605	·256 91	·016 46	29	15·600	·257 12	·016 48	31
30	15·852	·245 13	·015 46	30	15·848	·245 34	·015 48	30
29	16·088	·233 90	·014 54	31	16·083	·234 12	·014 56	29
28	16·312	·223 22	·013 68	32	16·308	·223 45	·013 70	28
27	16·526	·213 06	·012 89	33	16·521	·213 29	·012 91	27
26	16·729	·203 40	·012 16	34	16·724	·203 64	·012 18	26
25	16·921	·194 23	·011 48	35	16·916	·194 47	·011 50	25
24	17·104	·185 52	·010 85	36	17·099	·185 76	·010 86	24
23	17·278	·177 25	·010 26	37	17·272	·177 51	·010 28	23
22	17·442	·169 42	·009 71	38	17·437	·169 68	·009 73	22
21	17·598	·162 00	·009 21	39	17·592	·162 26	·009 22	21
20	17·745	·154 99	·008 73	40	17·740	·155 25	·008 75	20
19	17·885	·148 35	·008 29	41	17·879	·148 61	·008 31	19
18	18·016	·142 08	·007 89	42	18·011	·142 34	·007 90	18
17	18·140	·136 17	·007 51	43	18·135	·136 43	·007 52	17
16	18·262	·130 39	·007 14	44	18·257	·130 60	·007 15	16
15	18·381	·124 72	·006 79	45	18·377	·124 88	·006 80	15

A1967–70 MORTALITY TABLE

FUNCTIONS FOR A LIMITED TERM — 5 per cent

Age [x]	SELECT $\ddot{a}_{[x]:\overline{n}\rceil}$	SELECT $A_{[x]:\overline{n}\rceil}$	SELECT $P_{[x]:\overline{n}\rceil}$	n	ULTIMATE $\ddot{a}_{x:\overline{n}\rceil}$	ULTIMATE $A_{x:\overline{n}\rceil}$	ULTIMATE $P_{x:\overline{n}\rceil}$	Age x
		$x+n=65$				$x+n=65$		
64	1·000	·952 38	·952 38	1	1·000	·952 38	·952 38	64
63	1·944	·907 41	·466 68	2	1·934	·907 92	·469 53	63
62	2·835	·865 02	·305 16	3	2·809	·866 24	·308 39	62
61	3·668	·825 32	·224 98	4	3·632	·827 03	·227 69	61
60	4·452	·787 99	·176 99	5	4·409	·790 03	·179 17	60
59	5·191	·752 79	·145 00	6	5·145	·755 01	·146 75	59
58	5·891	·719 48	·122 13	7	5·843	·721 78	·123 54	58
57	6·555	·687 88	·104 95	8	6·506	·690 19	·106 09	57
56	7·185	·657 84	·091 55	9	7·138	·660 10	·092 48	56
55	7·786	·629 23	·080 81	10	7·741	·631 40	·081 57	55
54	8·359	·601 94	·072 01	11	8·316	·603 99	·072 63	54
53	8·907	·575 86	·064 65	12	8·867	·577 77	·065 16	53
52	9·431	·550 92	·058 42	13	9·394	·552 69	·058 84	52
51	9·932	·527 04	·053 06	14	9·898	·528 66	·053 41	51
50	10·412	·504 17	·048 42	15	10·382	·505 63	·048 70	50
49	10·873	·482 24	·044 35	16	10·845	·483 56	·044 59	49
48	11·314	·461 21	·040 76	17	11·290	·462 40	·040 96	48
47	11·738	·441 05	·037 57	18	11·716	·442 10	·037 73	47
46	12·144	·421 70	·034 72	19	12·125	·422 63	·034 86	46
45	12·534	·403 13	·032 16	20	12·517	·403 95	·032 27	45
44	12·908	·385 32	·029 85	21	12·893	·386 04	·029 94	44
43	13·267	·368 23	·027 76	22	13·254	·368 87	·027 83	43
42	13·611	·351 85	·025 85	23	13·600	·352 40	·025 91	42
41	13·941	·336 14	·024 11	24	13·931	·336 62	·024 16	41
40	14·257	·321 08	·022 52	25	14·248	·321 51	·022 56	40
39	14·560	·306 64	·021 06	26	14·552	·307 03	·021 10	39
38	14·851	·292 82	·019 72	27	14·844	·293 16	·019 75	38
37	15·129	·279 59	·018 48	28	15·122	·279 90	·018 51	37
36	15·394	·266 93	·017 34	29	15·389	·267 21	·017 36	36
35	15·649	·254 82	·016 28	30	15·643	·255 09	·016 31	35
34	15·892	·243 25	·015 31	31	15·886	·243 50	·015 33	34
33	16·124	·232 20	·014 40	32	16·119	·232 44	·014 42	33
32	16·345	·221 65	·013 56	33	16·341	·221 88	·013 58	32
31	16·557	·211 58	·012 78	34	16·552	·211 81	·012 80	31
30	16·758	·201 98	·012 05	35	16·753	·202 22	·012 07	30
29	16·950	·192 84	·011 38	36	16·945	·193 08	·011 39	29
28	17·133	·184 14	·010 75	37	17·128	·184 38	·010 76	28
27	17·307	·175 87	·010 16	38	17·302	·176 11	·010 18	27
26	17·472	·168 00	·009 62	39	17·467	·168 25	·009 63	26
25	17·629	·160 54	·009 11	40	17·623	·160 79	·009 12	25
24	17·777	·153 45	·008 63	41	17·772	·153 71	·008 65	24
23	17·918	·146 74	·008 19	42	17·913	·147 00	·008 21	23
22	18·052	·140 38	·007 78	43	18·046	·140 65	·007 79	22
21	18·178	·134 37	·007 39	44	18·173	·134 64	·007 41	21
20	18·297	·128 69	·007 03	45	18·292	·128 96	·007 05	20
19	18·410	·123 33	·006 70	46	18·404	·123 60	·006 72	19
18	18·516	·118 28	·006 39	47	18·510	·118 55	·006 40	18
17	18·616	·113 53	·006 10	48	18·610	·113 79	·006 11	17
16	18·714	·108 84	·005 82	49	18·710	·109 05	·005 83	16
15	18·812	·104 21	·005 54	50	18·808	·104 38	·005 55	15

6 per cent SELECT

Age [x]	$\ddot{a}_{[x]}$	$A_{[x]}$	$P_{[x]}$	Age [x]
0	17·243	·023 97	·001 39	0
1	17·230	·024 72	·001 43	1
2	17·215	·025 56	·001 48	2
3	17·198	·026 51	·001 54	3
4	17·180	·027 56	·001 60	4
5	17·159	·028 72	·001 67	5
6	17·137	·029 99	·001 75	6
7	17·113	·031 37	·001 83	7
8	17·086	·032 85	·001 92	8
9	17·058	·034 44	·002 02	9
10	17·028	·036 16	·002 12	10
11	16·996	·037 97	·002 23	11
12	16·962	·039 90	·002 35	12
13	16·926	·041 93	·002 48	13
14	16·888	·044 06	·002 61	14
15	16·850	·046 22	·002 74	15
16	16·812	·048 37	·002 88	16
17	16·775	·050 46	·003 01	17
18	16·739	·052 50	·003 14	18
19	16·700	·054 72	·003 28	19
20	16·657	·057 14	·003 43	20
21	16·611	·059 74	·003 60	21
22	16·561	·062 56	·003 78	22
23	16·508	·065 59	·003 97	23
24	16·451	·068 84	·004 18	24
25	16·389	·072 32	·004 41	25
26	16·323	·076 04	·004 66	26
27	16·253	·080 00	·004 92	27
28	16·179	·084 22	·005 21	28
29	16·100	·088 70	·005 51	29
30	16·016	·093 46	·005 84	30
31	15·927	·098 49	·006 18	31
32	15·833	·103 81	·006 56	32
33	15·734	·109 42	·006 95	33
34	15·629	·115 34	·007 38	34
35	15·519	·121 56	·007 83	35
36	15·404	·128 10	·008 32	36
37	15·282	·134 96	·008 83	37
38	15·155	·142 15	·009 38	38
39	15·022	·149 67	·009 96	39
40	14·884	·157 53	·010 58	40
41	14·739	·165 74	·011 24	41
42	14·588	·174 28	·011 95	42
43	14·431	·183 17	·012 69	43
44	14·267	·192 41	·013 49	44
45	14·098	·202 00	·014 33	45
46	13·922	·211 93	·015 22	46
47	13·741	·222 21	·016 17	47
48	13·553	·232 84	·017 18	48
49	13·360	·243 79	·018 25	49
50	13·160	·255 08	·019 38	50
51	12·955	·266 70	·020 59	51
52	12·744	·278 63	·021 86	52
53	12·528	·290 86	·023 22	53
54	12·307	·303 39	·024 65	54
55	12·081	·316 19	·026 17	55
56	11·850	·329 26	·027 79	56
57	11·615	·342 57	·029 50	57
58	11·375	·356 11	·031 31	58
59	11·132	·369 86	·033 22	59
60	10·886	·383 80	·035 26	60
61	10·637	·397 89	·037 41	61
62	10·386	·412 13	·039 68	62
63	10·132	·426 47	·042 09	63
64	9·877	·440 90	·044 64	64
65	9·621	·455 39	·047 33	65
66	9·365	·469 91	·050 18	66
67	9·109	·484 42	·053 18	67
68	8·853	·498 90	·056 36	68
69	8·598	·513 32	·059 70	69
70	8·345	·527 65	·063 23	70
71	8·094	·541 85	·066 94	71
72	7·846	·555 90	·070 85	72
73	7·601	·569 77	·074 96	73
74	7·359	·583 43	·079 28	74
75	7·122	·596 85	·083 80	75
76	6·890	·610 00	·088 54	76
77	6·663	·622 87	·093 49	77
78	6·441	·635 43	·098 66	78
79	6·225	·647 66	·104 05	79
80	6·015	·659 54	·109 65	80

A1967–70 MORTALITY TABLE

ULTIMATE

6 per cent

Age x	$\ddot{a}_x$	A_x	P_x	Age x	Age x	$\ddot{a}_x$	A_x	P_x	Age x
0	17·240	·024 16	·001 40	0	55	12·004	·320 51	·026 70	55
1	17·227	·024 90	·001 45	1	56	11·764	·334 12	·028 40	56
2	17·212	·025 73	·001 50	2	57	11·518	·348 03	·030 22	57
3	17·196	·026 66	·001 55	3	58	11·268	·362 22	·032 15	58
4	17·177	·027 70	·001 61	4	59	11·012	·376 67	·034 20	59
5	17·157	·028 85	·001 68	5	60	10·753	·391 36	·036 40	60
6	17·135	·030 10	·001 76	6	61	10·489	·406 27	·038 73	61
7	17·111	·031 47	·001 84	7	62	10·222	·421 38	·041 22	62
8	17·084	·032 96	·001 93	8	63	9·952	·436 66	·043 88	63
9	17·056	·034 55	·002 03	9	64	9·680	·452 09	·046 71	64
10	17·026	·036 25	·002 13	10	65	9·405	·467 64	·049 72	65
11	16·994	·038 07	·002 24	11	66	9·129	·483 29	·052 94	66
12	16·960	·040 00	·002 36	12	67	8·851	·498 99	·056 38	67
13	16·924	·042 05	·002 48	13	68	8·573	·514 72	·060 04	68
14	16·886	·044 19	·002 62	14	69	8·295	·530 45	·063 95	69
15	16·847	·046 39	·002 75	15	70	8·018	·546 15	·068 12	70
16	16·808	·048 59	·002 89	16	71	7·742	·561 78	·072 56	71
17	16·770	·050 74	·003 03	17	72	7·467	·577 32	·077 31	72
18	16·734	·052 79	·003 15	18	73	7·195	·592 72	·082 38	73
19	16·695	·055 01	·003 30	19	74	6·926	·607 96	·087 78	74
20	16·652	·057 42	·003 45	20	75	6·660	·623 01	·093 54	75
21	16·606	·060 03	·003 62	21	76	6·398	·637 83	·099 68	76
22	16·556	·062 85	·003 80	22	77	6·141	·652 39	·106 23	77
23	16·503	·065 87	·003 99	23	78	5·889	·666 67	·113 21	78
24	16·446	·069 12	·004 20	24	79	5·642	·680 65	·120 64	79
25	16·384	·072 60	·004 43	25	80	5·401	·694 29	·128 55	80
26	16·319	·076 31	·004 68	26	81	5·166	·707 57	·136 96	81
27	16·249	·080 27	·004 94	27	82	4·938	·720 48	·145 90	82
28	16·174	·084 49	·005 22	28	83	4·717	·732 99	·155 39	83
29	16·095	·088 97	·005 53	29	84	4·503	·745 09	·165 45	84
30	16·011	·093 72	·005 85	30	85	4·297	·756 76	·176 11	85
31	15·922	·098 75	·006 20	31	86	4·099	·768 00	·187 38	86
32	15·828	·104 08	·006 58	32	87	3·908	·778 79	·199 28	87
33	15·729	·109 70	·006 97	33	88	3·725	·789 14	·211 84	88
34	15·624	·115 63	·007 40	34	89	3·550	·799 03	·225 05	89
35	15·514	·121 87	·007 86	35	90	3·384	·808 46	·238 92	90
36	15·398	·128 44	·008 34	36	91	3·225	·817 45	·253 47	91
37	15·276	·135 33	·008 86	37	92	3·074	·825 98	·268 67	92
38	15·148	·142 57	·009 41	38	93	2·931	·834 07	·284 53	93
39	15·014	·150 14	·010 00	39	94	2·796	·841 72	·301 02	94
40	14·874	·158 07	·010 63	40	95	2·669	·848 95	·318 13	95
41	14·728	·166 35	·011 30	41	96	2·548	·855 76	·335 82	96
42	14·575	·174 99	·012 01	42	97	2·435	·862 17	·354 06	97
43	14·416	·184 00	·012 76	43	98	2·329	·868 18	·372 80	98
44	14·250	·193 37	·013 57	44	99	2·229	·873 82	·391 98	99
45	14·078	·203 11	·014 43	45	100	2·136	·879 09	·411 54	100
46	13·900	·213 22	·015 34	46	101	2·049	·884 02	·431 43	101
47	13·715	·223 71	·016 31	47	102	1·968	·888 61	·451 57	102
48	13·523	·234 56	·017 35	48	103	1·892	·892 89	·471 88	103
49	13·325	·245 78	·018 45	49	104	1·822	·896 87	·492 28	104
50	13·120	·257 36	·019 62	50	105	1·757	·900 57	·512 69	105
51	12·909	·269 30	·020 86	51	106	1·696	·904 00	·533 04	106
52	12·692	·281 60	·022 19	52	107	1·640	·907 18	·553 23	107
53	12·468	·294 24	·023 60	53	108	1·588	·910 12	·573 19	108
54	12·239	·307 21	·025 10	54	109	1·540	·912 84	·592 84	109

A1967–70 MORTALITY TABLE

6 per cent FUNCTIONS FOR A LIMITED TERM

Age [x]	SELECT $\ddot{a}_{[x]:\overline{n}\rceil}$	SELECT $A_{[x]:\overline{n}\rceil}$	SELECT $P_{[x]:\overline{n}\rceil}$	n	ULTIMATE $\ddot{a}_{x:\overline{n}\rceil}$	ULTIMATE $A_{x:\overline{n}\rceil}$	ULTIMATE $P_{x:\overline{n}\rceil}$	Age x
		$x+n=60$				$x+n=60$		
59	1·000	·943 40	·943 40	1	1·000	·943 40	·943 40	59
58	1·938	·890 30	·459 39	2	1·932	·890 62	·460 89	58
57	2·817	·840 54	·298 37	3	2·804	·841 29	·300 05	57
56	3·639	·794 05	·218 23	4	3·620	·795 08	·219 62	56
55	4·408	·750 50	·170 26	5	4·386	·751 71	·171 37	55
54	5·130	·709 62	·138 33	6	5·107	·710 93	·139 21	54
53	5·809	·671 19	·115 55	7	5·785	·672 53	·116 25	53
52	6·448	·635 00	·098 48	8	6·425	·636 32	·099 04	52
51	7·051	·600 88	·085 22	9	7·029	·602 15	·085 67	51
50	7·620	·568 66	·074 62	10	7·599	·569 86	·074 99	50
49	8·158	·538 22	·065 97	11	8·138	·539 34	·066 27	49
48	8·667	·509 42	·058 78	12	8·649	·510 45	·059 02	48
47	9·148	·482 17	·052 71	13	9·132	·483 11	·052 90	47
46	9·604	·456 37	·047 52	14	9·589	·457 22	·047 68	46
45	10·036	·431 93	·043 04	15	10·023	·432 69	·043 17	45
44	10·445	·408 77	·039 14	16	10·433	·409 44	·039 24	44
43	10·833	·386 82	·035 71	17	10·822	·387 42	·035 80	43
42	11·200	·366 02	·032 68	18	11·191	·366 55	·032 75	42
41	11·549	·346 30	·029 99	19	11·540	·346 77	·030 05	41
40	11·879	·327 61	·027 58	20	11·871	·328 03	·027 63	40
39	12·192	·309 91	·025 42	21	12·185	·310 28	·025 46	39
38	12·488	·293 13	·023 47	22	12·482	·293 46	·023 51	38
37	12·769	·277 24	·021 71	23	12·763	·277 54	·021 75	37
36	13·035	·262 19	·020 11	24	13·030	·262 47	·020 14	36
35	13·286	·247 95	·018 66	25	13·282	·248 21	·018 69	35
34	13·524	·234 47	·017 34	26	13·520	·234 72	·017 36	34
33	13·749	·221 73	·016 13	27	13·745	·221 97	·016 15	33
32	13·962	·209 68	·015 02	28	13·958	·209 92	·015 04	32
31	14·163	·198 30	·014 00	29	14·159	·198 53	·014 02	31
30	14·353	·187 56	·013 07	30	14·349	·187 79	·013 09	30
29	14·532	·177 42	·012 21	31	14·528	·177 66	·012 23	29
28	14·701	·167 86	·011 42	32	14·697	·168 10	·011 44	28
27	14·860	·158 86	·010 69	33	14·856	·159 10	·010 71	27
26	15·010	·150 38	·010 02	34	15·006	·150 63	·010 04	26
25	15·151	·142 40	·009 40	35	15·146	·142 66	·009 42	25
24	15·283	·134 91	·008 83	36	15·279	·135 17	·008 85	24
23	15·408	·127 87	·008 30	37	15·403	·128 14	·008 32	23
22	15·524	·121 27	·007 81	38	15·519	·121 54	·007 83	22
21	15·633	·115 09	·007 36	39	15·629	·115 36	·007 38	21
20	15·736	·109 30	·006 95	40	15·731	·109 57	·006 97	20
19	15·831	·103 89	·006 56	41	15·827	·104 16	·006 58	19
18	15·921	·098 84	·006 21	42	15·916	·099 11	·006 23	18
17	16·004	·094 13	·005 88	43	15·999	·094 39	·005 90	17
16	16·085	·089 53	·005 57	44	16·081	·089 74	·005 58	16
15	16·165	·085 02	·005 26	45	16·162	·085 19	·005 27	15

A1967–70 MORTALITY TABLE

FUNCTIONS FOR A LIMITED TERM — **6 per cent**

Age	SELECT				ULTIMATE			Age
$[x]$	$\ddot{a}_{[x]:\overline{n}\vert}$	$A_{[x]:\overline{n}\vert}$	$P_{[x]:\overline{n}\vert}$	n	$\ddot{a}_{x:\overline{n}\vert}$	$A_{x:\overline{n}\vert}$	$P_{x:\overline{n}\vert}$	x
		$x+n=65$				$x+n=65$		
64	1·000	·943 40	·943 40	1	1·000	·943 40	·943 40	64
63	1·935	·890 44	·460 06	2	1·925	·891 05	·462 92	63
62	2·809	·841 00	·299 40	3	2·784	·842 43	·302 63	62
61	3·619	·795 13	·219 69	4	3·584	·797 13	·222 41	61
60	4·374	·752 41	·172 02	5	4·332	·754 77	·174 22	60
59	5·079	·712 49	·140 27	6	5·034	·715 05	·142 04	59
58	5·740	·675 07	·117 60	7	5·694	·677 72	·119 03	58
57	6·362	·639 90	·100 59	8	6·315	·642 55	·101 75	57
56	6·947	·606 78	·087 34	9	6·901	·609 36	·088 29	56
55	7·499	·575 51	·076 74	10	7·456	·577 98	·077 52	55
54	8·022	·545 95	·068 06	11	7·981	·548 27	·068 70	54
53	8·516	·517 95	·060 82	12	8·478	·520 11	·061 35	53
52	8·985	·491 42	·054 69	13	8·950	·493 40	·055 13	52
51	9·430	·466 23	·049 44	14	9·398	·468 04	·049 80	51
50	9·852	·442 32	·044 89	15	9·823	·443 95	·045 19	50
49	10·254	·419 59	·040 92	16	10·228	·421 06	·041 17	49
48	10·636	·397 98	·037 42	17	10·613	·399 29	·037 62	48
47	10·999	·377 43	·034 32	18	10·978	·378 59	·034 49	47
46	11·344	·357 88	·031 55	19	11·326	·358 91	·031 69	46
45	11·673	·339 29	·029 07	20	11·657	·340 19	·029 18	45
44	11·985	·321 60	·026 83	21	11·971	·322 39	·026 93	44
43	12·282	·304 77	·024 81	22	12·270	·305 46	·024 89	43
42	12·565	·288 77	·022 98	23	12·554	·289 37	·023 05	42
41	12·834	·273 55	·021 31	24	12·825	·274 08	·021 37	41
40	13·089	·259 09	·019 79	25	13·081	·259 55	·019 84	40
39	13·332	·245 35	·018 40	26	13·325	·245 76	·018 44	39
38	13·563	·232 30	·017 13	27	13·556	·232 67	·017 16	38
37	13·782	·219 91	·015 96	28	13·776	·220 24	·015 99	37
36	13·989	·208 16	·014 88	29	13·984	·208 47	·014 91	36
35	14·186	·197 03	·013 89	30	14·181	·197 31	·013 91	35
34	14·372	·186 47	·012 97	31	14·368	·186 74	·013 00	34
33	14·549	·176 48	·012 13	32	14·544	·176 73	·012 15	33
32	14·716	·167 02	·011 35	33	14·712	·167 27	·011 37	32
31	14·874	·158 09	·010 63	34	14·869	·158 33	·010 65	31
30	15·023	·149 64	·009 96	35	15·019	·149 89	·009 98	30
29	15·164	·141 68	·009 34	36	15·159	·141 92	·009 36	29
28	15·296	·134 16	·008 77	37	15·292	·134 41	·008 79	28
27	15·421	·127 09	·008 24	38	15·417	·127 34	·008 26	27
26	15·539	·120 43	·007 75	39	15·535	·120 68	·007 77	26
25	15·650	·114 17	·007 30	40	15·645	·114 43	·007 31	25
24	15·754	·108 29	·006 87	41	15·749	·108 56	·006 89	24
23	15·851	·102 78	·006 48	42	15·846	·103 05	·006 50	23
22	15·942	·097 62	·006 12	43	15·937	·097 89	·006 14	22
21	16·027	·092 79	·005 79	44	16·022	·093 07	·005 81	21
20	16·107	·088 28	·005 48	45	16·102	·088 56	·005 50	20
19	16·181	·084 08	·005 20	46	16·176	·084 36	·005 21	19
18	16·250	·080 17	·004 93	47	16·246	·080 44	·004 95	18
17	16·315	·076 54	·004 69	48	16·310	·076 80	·004 71	17
16	16·378	·072 94	·004 45	49	16·374	·073 16	·004 47	16
15	16·441	·069 38	·004 22	50	16·438	·069 55	·004 23	15

A1967–70 MORTALITY TABLE

4 per cent

JOINT LIFE FUNCTIONS

SELECT AND ULTIMATE

Age $[x]$	$\ddot{a}_{[xx]}$	Age x	D_{xx}	N_{xx}	$\ddot{a}_{xx}$	$\ddot{a}_{xxx}$	$\ddot{a}_{xxxx}$
10	22·744	10	23 054·255	524 240·96	22·739	22·149	21·662
11	22·630	11	22 151·152	501 186·70	22·626	22·019	21·520
12	22·512	12	21 283·426	479 035·55	22·507	21·884	21·372
13	22·390	13	20 449·692	457 752·12	22·384	21·743	21·219
14	22·264	14	19 647·438	437 302·43	22·257	21·599	21·061
15	22·137	15	18 874·013	417 654·99	22·129	21·453	20·903
16	22·011	16	18 125·956	398 780·98	22·001	21·310	20·749
17	21·889	17	17 400·580	380 655·02	21·876	21·174	20·606
18	21·770	18	16 696·030	363 254·44	21·757	21·048	20·477
19	21·644	19	16 021·886	346 558·41	21·630	20·912	20·337
20	21·509	20	15 376·667	330 536·53	21·496	20·767	20·186
21	21·376	21	14 758·966	315 159·86	21·354	20·613	20·024
22	21·217	22	14 167·445	300 400·89	21·204	20·449	19·852
23	21·058	23	13 600·827	286 233·45	21·045	20·275	19·669
24	20·892	24	13 057·899	272 632·62	20·879	20·092	19·475
25	20·716	25	12 537·507	259 574·72	20·704	19·899	19·269
26	20·533	26	12 038·549	247 037·22	20·521	19·696	19·053
27	20·341	27	11 559·975	234 998·67	20·329	19·483	18·826
28	20·140	28	11 100·786	223 438·69	20·128	19·260	18·587
29	19·931	29	10 660·028	212 337·91	19·919	19·028	18·338
30	19·713	30	10 236·789	201 677·88	19·701	18·785	18·079
31	19·486	31	9 830·202 5	191 441·09	19·475	18·533	17·808
32	19·251	32	9 439·437 1	181 610·89	19·240	18·271	17·528
33	19·008	33	9 063·700 7	172 171·45	18·996	17·999	17·237
34	18·756	34	8 702·235 9	163 107·75	18·743	17·719	16·936
35	18·495	35	8 354·318 3	154 405·51	18·482	17·429	16·626
36	18·227	36	8 019·255 5	146 051·20	18·213	17·130	16·307
37	17·950	37	7 696·385 0	138 031·94	17·935	16·822	15·979
38	17·666	38	7 385·072 8	130 335·55	17·649	16·506	15·643
39	17·374	39	7 084·712 4	122 950·48	17·354	16·182	15·299
40	17·074	40	6 794·723 4	115 865·77	17·052	15·850	14·947
41	16·768	41	6 514·550 5	109 071·05	16·743	15·511	14·589
42	16·454	42	6 243·662 4	102 556·50	16·426	15·166	14·225
43	16·135	43	5 981·551 4	96 312·833	16·102	14·813	13·855
44	15·809	44	5 727·732 4	90 331·282	15·771	14·456	13·481
45	15·477	45	5 481·742 8	84 603·549	15·434	14·092	13·102
46	15·140	46	5 243·142 0	79 121·807	15·091	13·724	12·720
47	14·799	47	5 011·511 3	73 878·665	14·742	13·352	12·335
48	14·453	48	4 786·454 0	68 867·153	14·388	12·976	11·948
49	14·104	49	4 567·596 0	64 080·699	14·029	12·598	11·559

A1967–70 MORTALITY TABLE

JOINT LIFE FUNCTIONS

4 per cent

SELECT AND ULTIMATE

Age $[x]$	$\ddot{a}_{[xx]}$	Age x	D_{xx}	N_{xx}	$\ddot{a}_{xx}$	$\ddot{a}_{xxx}$	$\ddot{a}_{xxxx}$
50	13·751	50	4 354·585 7	59 513·103	13·667	12·217	11·171
51	13·396	51	4 147·095 3	55 158·518	13·301	11·835	10·783
52	13·039	52	3 944·821 2	51 011·422	12·931	11·452	10·396
53	12·680	53	3 747·485 6	47 066·601	12·560	11·070	10·011
54	12·321	54	3 554·837 9	43 319·116	12·186	10·687	9·629
55	11·962	55	3 366·655 8	39 764·278	11·811	10·307	9·251
56	11·603	56	3 182·748 0	36 397·622	11·436	9·928	8·877
57	11·246	57	3 002·955 5	33 214·874	11·061	9·553	8·508
58	10·890	58	2 827·153 7	30 211·918	10·686	9·181	8·145
59	10·538	59	2 655·255 2	27 384·765	10·313	8·814	7·788
60	10·188	60	2 487·211 7	24 729·510	9·943	8·452	7·439
61	9·843	61	2 323·016 0	22 242·298	9·575	8·095	7·097
62	9·502	62	2 162·704 0	19 919·282	9·210	7·745	6·764
63	9·167	63	2 006·356 3	17 756·578	8·850	7·402	6·440
64	8·837	64	1 854·099 0	15 750·222	8·495	7·067	6·125
65	8·514	65	1 706·103 7	13 896·123	8·145	6·739	5·820
66	8·198	66	1 562·586 7	12 190·019	7·801	6·421	5·525
67	7·890	67	1 423·806 7	10 627·432	7·464	6·111	5·241
68	7·590	68	1 290·060 8	9 203·625 5	7·134	5·811	4·967
69	7·298	69	1 161·679 3	7 913·564 7	6·812	5·521	4·704
70	7·014	70	1 039·017 2	6 751·885 4	6·498	5·241	4·452
71	6·740	71	922·444 85	5 712·868 2	6·193	4·972	4·211
72	6·476	72	812·335 48	4 790·423 3	5·897	4·713	3·981
73	6·220	73	709·050 81	3 978·087 9	5·610	4·465	3·763
74	5·975	74	612·924 81	3 269·037 1	5·334	4·227	3·555
75	5·740	75	524·246 09	2 656·112 2	5·067	4·000	3·358
76	5·515	76	443·239 62	2 131·866 2	4·810	3·784	3·172
77	5·299	77	370·048 97	1 688·626 5	4·563	3·579	2·997
78	5·094	78	304·720 13	1 318·577 6	4·327	3·385	2·831
79	4·899	79	247·188 48	1 013·857 4	4·102	3·201	2·676
80	4·713	80	197·270 14	766·668 95	3·886	3·027	2·531
81		81	154·659 31	669·398 81	3·682	2·863	2·394
82		82	118·932 29	414·739 50	3·487	2·709	2·267
83		83	89·559 028	295·807 22	3·303	2·564	2·149
84		84	65·921 727	206·248 19	3·129	2·429	2·039
85		85	47·339 707	140·326 46	2·964	2·302	1·936
86		86	33·098 686	92·986 754	2·809	2·184	1·842
87		87	22·481 984	59·888 068	2·664	2·075	1·755
88		88	14·800 829	37·406 084	2·527	1·973	1·674
89		89	9·420 861 5	22·605 255	2·399	1·878	1·601
90		90	5·782 420 7	13·184 393	2·280	1·791	1·533

Age [x]	$e_{[x]}$	e_x	Age x	Age [x]	$e_{[x]}$	e_x	Age x
0	73·321	73·305	0	55	21·418	21·268	55
1	72·373	72·358	1	56	20·615	20·449	56
2	71·421	71·407	2	57	19·826	19·643	57
3	70·464	70·452	3	58	19·053	18·851	58
4	69·504	69·493	4	59	18·295	18·074	59
5	68·540	68·530	5	60	17·554	17·312	60
6	67·572	67·564	6	61	16·829	16·566	61
7	66·602	66·594	7	62	16·121	15·835	62
8	65·630	65·622	8	63	15·431	15·122	63
9	64·656	64·648	9	64	14·759	14·425	64
10	63·680	63·673	10	65	14·106	13·745	65
11	62·703	62·696	11	66	13·471	13·084	66
12	61·726	61·720	12	67	12·856	12·440	67
13	60·750	60·743	13	68	12·260	11·816	68
14	59·776	59·767	14	69	11·684	11·210	69
15	58·807	58·795	15	70	11·127	10·623	70
16	57·846	57·831	16	71	10·590	10·055	71
17	56·896	56·878	17	72	10·074	9·507	72
18	55·956	55·938	18	73	9·577	8·978	73
19	55·012	54·994	19	74	9·100	8·469	74
20	54·063	54·045	20	75	8·644	7·979	75
21	53·111	53·094	21	76	8·207	7·509	76
22	52·155	52·138	22	77	7·789	7·059	77
23	51·197	51·180	23	78	7·391	6·628	78
24	50·235	50·219	24	79	7·012	6·216	79
25	49·271	49·255	25	80	6·652	5·823	80
26	48·305	48·289	26	81		5·449	81
27	47·337	47·322	27	82		5·093	82
28	46·367	46·353	28	83		4·755	83
29	45·397	45·383	29	84		4·434	84
30	44·426	44·412	30	85		4·131	85
31	43·455	43·441	31	86		3·845	86
32	42·484	42·470	32	87		3·574	87
33	41·514	41·500	33	88		3·320	88
34	40·545	40·531	34	89		3·080	89
35	39·578	39·563	35	90		2·855	90
36	38·613	38·597	36	91		2·644	91
37	37·650	37·633	37	92		2·447	92
38	36·691	36·672	38	93		2·262	93
39	35·735	35·714	39	94		2·090	94
40	34·784	34·760	40	95		1·929	95
41	33·837	33·810	41	96		1·779	96
42	32·896	32·865	42	97		1·640	97
43	31·961	31·925	43	98		1·510	98
44	31·032	30·992	44	99		1·390	99
45	30·110	30·064	45	100		1·278	100
46	29·196	29·144	46	101		1·175	101
47	28·290	28·231	47	102		1·080	102
48	27·393	27·326	48	103		·992	103
49	26·506	26·430	49	104		·910	104
50	25·629	25·543	50	105		·835	105
51	24·763	24·666	51	106		·766	106
52	23·908	23·799	52	107		·702	107
53	23·065	22·943	53	108		·643	108
54	22·235	22·099	54	109		·589	109

SECTION IV

a(55) MORTALITY TABLES FOR ANNUITANTS

MORTALITY FUNCTIONS AND MONETARY FUNCTIONS

Although figures in these tables are only for ages from 60 upwards, the original published tables contain functions for ages down to 20.

$a(55)$ MORTALITY TABLES

MORTALITY FUNCTIONS

FEMALES

Age [x]	SELECT $q_{[x]}$	SELECT $e_{[x]}$	SELECT $l_{[x]}$	ULTIMATE l_x	ULTIMATE μ_x	ULTIMATE d_x	ULTIMATE q_x	Age x
60	·005 13	21·144	893 918	897 001	·008 19	7 669	·008 55	60
61	·005 63	20·330	885 969	889 332	·009 00	8 351	·009 39	61
62	·006 19	19·526	877 320	880 981	·009 89	9 092	·010 32	62
63	·006 82	18·733	867 895	871 889	·010 88	9 913	·011 37	63
64	·007 52	17·953	857 616	861 976	·012 00	10 809	·012 54	64
65	·008 31	17·185	846 412	851 167	·013 26	11 789	·013 85	65
66	·009 19	16·430	834 193	839 378	·014 66	12 851	·015 31	66
67	·010 17	15·690	820 865	826 527	·016 23	14 010	·016 95	67
68	·011 26	14·965	806 345	812 517	·017 99	15 251	·018 77	68
69	·012 48	14·256	790 549	797 266	·019 95	16 583	·020 80	69
70	·013 84	13·563	773 377	780 683	·022 14	18 010	·023 07	70
71	·015 35	12·887	754 741	762 673	·024 59	19 517	·025 59	71
72	·017 03	12·229	734 568	743 156	·027 31	21 098	·028 39	72
73	·018 91	11·590	712 785	722 058	·030 35	22 752	·031 51	73
74	·020 99	10·970	689 313	699 306	·033 75	24 462	·034 98	74
75	·023 29	10·370	664 120	674 844	·037 53	26 191	·038 81	75
76	·026 09	9·788	637 350	648 653	·041 72	27 931	·043 06	76
77	·029 23	9·226	608 873	620 722	·046 39	29 646	·047 76	77
78	·032 72	8·686	578 715	591 076	·051 58	31 297	·052 95	78
79	·036 60	8·167	546 961	559 779	·057 32	32 837	·058 66	79
80	·040 92	7·669	513 739	526 942	·063 69	34 225	·064 95	80
81	·045 91	7·192	479 326	492 717	·070 73	35 397	·071 84	81
82	·051 44	6·736	443 850	457 320	·078 50	36 302	·079 38	82
83	·057 55	6·302	407 594	421 018	·087 05	36 881	·087 60	83
84	·064 31	5·890	370 897	384 137	·096 46	37 092	·096 56	84
85	·071 74	5·500	334 132	347 045	·106 79	36 884	·106 28	85
86	·079 88	5·131	297 722	310 161	·118 10	36 221	·116 78	86
87	·088 76	4·782	262 120	273 940	·130 43	35 086	·128 08	87
88	·098 43	4·455	227 785	238 854	·143 87	33 490	·140 21	88
89	·108 90	4·147	195 163	205 364	·158 45	31 454	·153 16	89
90	·120 20	3·859	164 670	173 910	·174 24	29 033	·166 94	90
91	·130 69	3·596	136 407	144 877	·191 26	26 297	·181 51	91
92	·141 72	3·352	110 965	118 580	·209 53	23 341	·196 84	92
93	·153 28	3·126	88 535	95 239	·229 08	20 275	·212 89	93
94	·165 31	2·916	69 190	74 964	·249 91	17 212	·229 60	94
95	·177 75	2·723	52 896	57 752	·272 00	14 258	·246 88	95
96	·190 55	2·544	39 512	43 494	·295 30	11 511	·264 65	96
97	·203 62	2·379	28 803	31 983	·319 76	9 045	·282 80	97
98	·216 89	2·228	20 467	22 938	·345 31	6 910	·301 24	98
99	·230 28	2·087	14 164	16 028	·371 83	5 126	·319 83	99
100				10 902	·399 22	3 690	·338 46	100
101				7 212	·427	2 575	·357	101
102				4 637	·456	1 744	·376	102
103				2 893	·488	1 146	·396	103
104				1 747	·521	728	·417	104

a(55) MORTALITY TABLES

MORTALITY FUNCTIONS

MALES

Age	SELECT			ULTIMATE				Age
[*x*]	$q_{[x]}$	$e_{[x]}$	$l_{[x]}$	l_x	μ_x	d_x	q_x	*x*
60	·008 41	17·520	855 051	859 916	·013 44	12 056	·014 02	60
61	·009 28	16·773	842 571	847 860	·014 82	13 108	·015 46	61
62	·010 24	16·041	829 000	834 752	·016 37	14 241	·017 06	62
63	·011 30	15·323	814 262	820 511	·018 08	15 450	·018 83	63
64	·012 48	14·622	798 279	805 061	·019 98	16 745	·020 80	64
65	·013 78	13·936	780 970	788 316	·022 09	18 108	·022 97	65
66	·015 23	13·268	762 269	770 208	·024 43	19 548	·025 38	66
67	·016 82	12·617	742 101	750 660	·027 02	21 041	·028 03	67
68	·018 58	11·984	720 415	729 619	·029 89	22 589	·030 96	68
69	·020 52	11·370	697 156	707 030	·033 07	24 180	·034 20	69
70	·022 66	10·774	672 300	682 850	·036 58	25 784	·037 76	70
71	·025 02	10·199	645 825	657 066	·040 47	27 400	·041 70	71
72	·027 61	9·643	617 745	629 666	·044 78	28 977	·046 02	72
73	·030 45	9·107	588 112	600 689	·049 52	30 485	·050 75	73
74	·033 57	8·592	556 999	570 204	·054 74	31 903	·055 95	74
75	·036 98	8·098	524 517	538 301	·060 50	33 181	·061 64	75
76	·041 12	7·622	491 034	505 120	·066 84	34 277	·067 86	76
77	·045 67	7·166	456 555	470 843	·073 81	35 139	·074 63	77
78	·050 67	6·731	421 330	435 704	·081 43	35 723	·081 99	78
79	·056 15	6·317	385 645	399 981	·089 79	35 990	·089 98	79
80	·062 12	5·923	349 829	363 991	·098 91	35 893	·098 61	80
81	·068 98	5·547	314 365	328 098	·108 87	35 418	·107 95	81
82	·076 45	5·192	279 519	292 680	·119 73	34 530	·117 98	82
83	·084 58	4·856	245 697	258 150	·131 51	33 234	·128 74	83
84	·093 39	4·539	213 296	224 916	·144 28	31 540	·140 23	84
85	·102 91	4·241	182 695	193 376	·158 07	29 482	·152 46	85
86	·113 14	3·961	154 234	163 894	·172 93	27 110	·165 41	86
87	·124 12	3·698	128 198	136 784	·188 89	24 498	·179 10	87
88	·135 81	3·453	104 795	112 286	·205 99	21 723	·193 46	88
89	·148 24	3·223	84 158	90 563	·224 21	18 881	·208 49	89
90	·161 37	3·009	66 318	71 682	·243 60	16 066	·224 13	90
91	·173 03	2·818	51 090	55 616	·264 14	13 366	·240 32	91
92	·185 03	2·640	38 519	42 250	·285 80	10 858	·256 99	92
93	·197 32	2·477	28 391	31 392	·308 52	8 603	·274 05	93
94	·209 83	2·326	20 436	22 789	·332 25	6 641	·291 43	94
95	·222 50	2·186	14 351	16 148	·356 95	4 990	·309 03	95
96	·235 25	2·058	9 823	11 158	·382 56	3 646	·326 73	96
97	·248 00	1·941	6 548	7 512	·408 96	2 588	·344 45	97
98	·260 70	1·832	4 249	4 924	·435 94	1 783	·362 09	98
99	·273 25	1·731	2 682	3 141	·463 33	1 192	·379 52	99
100				1 949	·491 06	773	·396 68	100
101				1 176	·519	487	·414	101
102				689	·550	298	·432	102
103				391	·582	176	·450	103
104				215	·620	101	·469	104

4 per cent

MONETARY FUNCTIONS

FEMALES					MALES					
	SELECT		ULTIMATE			SELECT		ULTIMATE		
Age x	$a_{[x]}$	D_x	N_x	a_x	Age x	$a_{[x]}$	D_x	N_x	a_x	Age x
60	13·340	85 269	1 218 809	13·294	60	11·691	81 744	1 032 009	11·625	60
61	12·994	81 289	1 133 540	12·945	61	11·333	77 498	950 265	11·262	61
62	12·643	77 428	1 052 251	12·590	62	10·972	73 365	872 767	10·896	62
63	12·286	73 682	974 823	12·230	63	10·610	69 340	799 402	10·529	63
64	11·926	70 042	901 141	11·866	64	10·246	65 418	730 062	10·160	64
65	11·562	66 504	831 099	11·497	65	9·883	61 593	664 644	9·791	65
66	11·194	63 060	764 595	11·125	66	9·520	57 864	603 051	9·422	66
67	10·824	59 707	701 535	10·750	67	9·158	54 226	545 187	9·054	67
68	10·452	56 437	641 828	10·372	68	8·799	50 679	490 961	8·688	68
69	10·079	53 248	585 391	9·994	69	8·442	47 221	440 282	8·324	69
70	9·705	50 135	532 143	9·614	70	8·088	43 852	393 061	7·963	70
71	9·332	47 095	482 008	9·235	71	7·739	40 573	349 209	7·607	71
72	8·960	44 124	434 913	8·857	72	7·395	37 386	308 636	7·255	72
73	8·590	41 223	390 789	8·480	73	7·057	34 294	271 250	6·910	73
74	8·224	38 388	349 566	8·106	74	6·726	31 301	236 956	6·570	74
75	7·861	35 621	311 178	7·736	75	6·402	28 414	205 655	6·238	75
76	7·501	32 921	275 557	7·370	76	6·083	25 637	177 241	5·914	76
77	7·146	30 292	242 636	7·010	77	5·773	22 978	151 604	5·598	77
78	6·798	27 736	212 344	6·656	78	5·472	20 445	128 626	5·291	78
79	6·457	25 257	184 608	6·309	79	5·180	18 047	108 181	4·994	79
80	6·124	22 861	159 351	5·971	80	4·898	15 791	90 134	4·708	80
81	5·798	20 554	136 490	5·641	81	4·625	13 687	74 343	4·432	81
82	5·482	18 344	115 936	5·320	82	4·363	11 740	60 656	4·167	82
83	5·175	16 238	97 592	5·010	83	4·111	9 956·5	48 916	3·913	83
84	4·879	14 246	81 354	4·711	84	3·871	8 341·0	38 960	3·671	84
85	4·594	12 375	67 108	4·423	85	3·642	6 895·6	30 619	3·440	85
86	4·320	10 635	54 733	4·147	86	3·423	5 619·5	23 723	3·222	86
87	4·058	9 031·4	44 098	3·883	87	3·217	4 509·6	18 104	3·015	87
88	3·808	7 571·8	35 067	3·632	88	3·021	3 559·5	13 594	2·819	88
89	3·570	6 259·8	27 495	3·393	89	2·836	2 760·5	10 034	2·635	89
90	3·344	5 097·1	21 235	3·167	90	2·662	2 100·9	7 274	2·463	90
91	3·137	4 082·9	16 138	2·953	91	2·505	1 567·3	5 173	2·301	91
92	2·941	3 213·2	12 055	2·753	92	2·358	1 144·9	3 606	2·150	92
93	2·758	2 481·5	8 842	2·564	93	2·222	817·9	2 461	2·009	93
94	2·587	1 878·1	6 360	2·388	94	2·095	570·9	1 643	1·879	94
95	2·428	1 391·2	4 482	2·224	95	1·977	389·0	1 072	1·757	95
96	2·280	1 007·5	3 091	2·071	96	1·868	258·5	683	1·645	96
97	2·142	712·3	2 084	1·929	97	1·767	167·3	424	1·541	97
98	2·014	491·2	1 371	1·797	98	1·674	105·5	257	1·444	98
99	1·895	330·0	880	1·674	99	1·587	64·7	152	1·355	99
100		215·9	550	1·560	100		38·6	87	1·271	100
101		137·3	334	1·453	101		22·4	48	1·190	101
102		84·9	197	1·350	102		12·6	26	1·113	102
103		50·9	112	1·249	103		6·9	13	1·037	103
104		29·6	61	1·151	104		3·6	6	·961	104

JOINT LIFE ANNUITIES, a_{xy} **4 per cent**

MALE AND FEMALE

ULTIMATE

Age of female y	Age of male x 60	62	64	66	68	70	72	74	76	78	80	Age of female y
60	9·852	9·380	8·875	8·343	7·790	7·223	6·651	6·080	5·519	4·976	4·458	60
62	9·547	9·111	8·641	8·141	7·619	7·080	6·531	5·982	5·440	4·912	4·406	62
64	9·203	8·804	8·371	7·907	7·418	6·910	6·389	5·865	5·344	4·834	4·344	64
66	8·818	8·459	8·064	7·639	7·186	6·712	6·223	5·726	5·229	4·741	4·269	66
68	8·396	8·076	7·722	7·336	6·922	6·484	6·029	5·563	5·095	4·631	4·179	68
70	7·938	7·657	7·343	6·998	6·625	6·226	5·808	5·376	4·938	4·501	4·073	70
72	7·451	7·208	6·933	6·629	6·296	5·937	5·558	5·162	4·758	4·351	3·949	72
74	6·940	6·732	6·496	6·231	5·938	5·621	5·281	4·923	4·554	4·179	3·806	74
76	6·413	6·238	6·037	5·810	5·556	5·279	4·978	4·660	4·327	3·987	3·645	76
78	5·878	5·732	5·564	5·372	5·156	4·916	4·655	4·375	4·080	3·774	3·465	78
80	5·345	5·225	5·085	4·925	4·743	4·540	4·315	4·073	3·814	3·544	3·267	80
82	4·821	4·724	4·609	4·477	4·326	4·156	3·966	3·759	3·535	3·300	3·056	82
84	4·316	4·237	4·145	4·037	3·913	3·772	3·614	3·439	3·249	3·046	2·834	84
86	3·836	3·774	3·700	3·613	3·512	3·396	3·266	3·120	2·960	2·788	2·606	86
88	3·388	3·339	3·280	3·210	3·129	3·035	2·928	2·808	2·675	2·530	2·376	88
90	2·977	2·938	2·891	2·836	2·771	2·695	2·608	2·510	2·400	2·280	2·150	90
92	2·604	2·574	2·537	2·493	2·441	2·381	2·310	2·231	2·141	2·041	1·933	92
94	2·272	2·248	2·219	2·184	2·143	2·094	2·038	1·973	1·900	1·818	1·728	94
96	1·980	1·961	1·938	1·910	1·877	1·839	1·793	1·741	1·681	1·614	1·539	96
98	1·725	1·710	1·692	1·670	1·644	1·613	1·576	1·533	1·485	1·430	1·368	98
100	1·504	1·492	1·477	1·460	1·439	1·414	1·384	1·350	1·310	1·265	1·214	100

Age of female y	Age of male x 80	82	84	86	88	90	92	94	96	98	100	Age of female y
60	4·458	3·969	3·515	3·099	2·723	2·387	2·090	1·831	1·606	1·413	1·246	60
62	4·406	3·928	3·483	3·074	2·703	2·371	2·077	1·821	1·598	1·407	1·240	62
64	4·344	3·879	3·443	3·043	2·678	2·351	2·062	1·808	1·589	1·399	1·234	64
66	4·269	3·818	3·395	3·004	2·648	2·327	2·043	1·793	1·576	1·389	1·226	66
68	4·179	3·746	3·337	2·958	2·611	2·298	2·019	1·774	1·561	1·377	1·216	68
70	4·073	3·660	3·268	2·903	2·567	2·263	1·991	1·752	1·543	1·362	1·203	70
72	3·949	3·559	3·186	2·837	2·514	2·220	1·957	1·724	1·520	1·343	1·189	72
74	3·806	3·441	3·090	2·759	2·451	2·169	1·916	1·691	1·493	1·321	1·170	74
76	3·645	3·307	2·980	2·669	2·377	2·110	1·868	1·652	1·461	1·295	1·149	76
78	3·465	3·156	2·854	2·565	2·293	2·041	1·811	1·605	1·423	1·263	1·123	78
80	3·267	2·989	2·714	2·449	2·197	1·962	1·746	1·552	1·379	1·227	1·092	80
82	3·056	2·808	2·561	2·320	2·090	1·873	1·673	1·491	1·328	1·185	1·057	82
84	2·834	2·616	2·397	2·181	1·973	1·775	1·591	1·423	1·271	1·137	1·017	84
86	2·606	2·417	2·225	2·034	1·847	1·669	1·502	1·348	1·208	1·084	·972	86
88	2·376	2·214	2·048	1·881	1·716	1·557	1·407	1·267	1·140	1·025	·922	88
90	2·150	2·013	1·870	1·726	1·582	1·442	1·308	1·183	1·068	·964	·869	90
92	1·933	1·817	1·696	1·572	1·448	1·325	1·207	1·096	·993	·899	·814	92
94	1·728	1·632	1·529	1·424	1·317	1·210	1·107	1·009	·917	·833	·757	94
96	1·539	1·459	1·373	1·283	1·192	1·100	1·010	·924	·843	·768	·700	96
98	1·368	1·301	1·229	1·153	1·075	·996	·918	·843	·771	·705	·644	98
100	1·214	1·158	1·098	1·034	·967	·899	·832	·766	·704	·646	·591	100

6 per cent MONETARY FUNCTIONS

FEMALES					MALES					
	SELECT	ULTIMATE				SELECT	ULTIMATE			
Age x	$a_{[x]}$	D_x	N_x	a_x	Age x	$a_{[x]}$	D_x	N_x	a_x	Age x
60	11·034	27 192	326 186	10·996	60	9·869	26 068	281 869	9·813	60
61	10·797	25 433	298 994	10·756	61	9·610	24 247	255 801	9·550	61
62	10·553	23 769	273 561	10·509	62	9·346	22 521	231 554	9·282	62
63	10·303	22 192	249 792	10·256	63	9·078	20 884	209 033	9·009	63
64	10·047	20 698	227 600	9·997	64	8·807	19 331	188 149	8·733	64
65	9·786	19 281	206 902	9·731	65	8·533	17 857	168 818	8·454	65
66	9·518	17 938	187 621	9·460	66	8·257	16 460	150 961	8·171	66
67	9·246	16 663	169 683	9·183	67	7·978	15 134	134 501	7·887	67
68	8·970	15 454	153 020	8·902	68	7·699	13 877	119 367	7·602	68
69	8·690	14 305	137 566	8·617	69	7·419	12 686	105 490	7·315	69
70	8·406	13 215	123 261	8·328	70	7·139	11 559	92 804	7·029	70
71	8·120	12 179	110 046	8·036	71	6·860	10 493	81 245	6·743	71
72	7·832	11 196	97 867	7·742	72	6·583	9 486·1	70 752	6·458	72
73	7·543	10 262	86 671	7·446	73	6·308	8 537·3	61 266	6·176	73
74	7·253	9 376·4	76 409	7·149	74	6·036	7 645·4	52 729	5·897	74
75	6·964	8 536·2	67 033	6·853	75	5·769	6 809·0	45 083	5·621	75
76	6·674	7 740·4	58 496	6·558	76	5·503	6 027·6	38 274	5·350	76
77	6·386	6 987·9	50 756	6·264	77	5·242	5 300·6	32 247	5·083	77
78	6·100	6 277·5	43 768	5·973	78	4·987	4 627·4	26 946	4·823	78
79	5·818	5 608·6	37 491	5·685	79	4·739	4 007·5	22 319	4·569	79
80	5·540	4 980·8	31 882	5·401	80	4·497	3 440·5	18 311	4·322	80
81	5·266	4 393·6	26 901	5·123	81	4·261	2 925·7	14 871	4·082	81
82	4·998	3 847·2	22 508	4·851	82	4·032	2 462·1	11 945	3·851	82
83	4·736	3 341·3	18 660	4·585	83	3·812	2 048·7	9 483	3·628	83
84	4·482	2 876·0	15 319	4·327	84	3·600	1 683·9	7 434	3·414	84
85	4·235	2 451·2	12 443	4·077	85	3·397	1 365·9	5 750	3·209	85
86	3·996	2 066·7	9 992	3·836	86	3·202	1 092·1	4 384	3·014	86
87	3·766	1 722·0	7 925	3·603	87	3·017	859·9	3 292	2·827	87
88	3·545	1 416·5	6 203	3·381	88	2·840	665·9	2 432	2·651	88
89	3·334	1 148·9	4 787	3·168	89	2·673	506·7	1 766	2·484	89
90	3·132	917·9	3 638	2·965	90	2·515	378·3	1 260	2·327	90
91	2·945	721·4	2 720	2·773	91	2·372	276·9	881	2·179	91
92	2·769	557·0	1 999	2·591	92	2·237	198·5	604	2·040	92
93	2·603	422·1	1 442	2·420	93	2·112	139·1	406	1·910	93
94	2·448	313·4	1 019	2·259	94	1·995	95·3	267	1·789	94
95	2·302	227·8	706	2·108	95	1·886	63·7	172	1·676	95
96	2·166	161·8	478	1·968	96	1·785	41·5	108	1·572	96
97	2·039	112·3	316	1·836	97	1·691	26·4	66	1·475	97
98	1·921	76·0	204	1·714	98	1·604	16·3	40	1·384	98
99	1·811	50·1	128	1·600	99	1·523	9·8	24	1·300	99
100		32·1	78	1·493	100		5·7	14	1·221	100
101		20·1	46	1·393	101		3·3	8	1·146	101
102		12·2	26	1·296	102		1·8	5	1·072	102
103		7·2	14	1·202	103		1·0	3	1·001	103
104		4·1	6	1·109	104		·5	2	·929	104

JOINT LIFE ANNUITIES, a_{xy} **6 per cent**

MALE AND FEMALE

ULTIMATE

Age of female *y*	Age of male *x*											Age of female *y*
	60	62	64	66	68	70	72	74	76	78	80	
60	8·507	8·145	7·753	7·335	6·894	6·436	5·966	5·492	5·019	4·555	4·106	60
62	8·275	7·938	7·571	7·176	6·757	6·320	5·868	5·410	4·952	4·500	4·062	62
64	8·011	7·700	7·360	6·991	6·596	6·181	5·751	5·312	4·871	4·434	4·008	64
66	7·713	7·430	7·117	6·776	6·409	6·020	5·613	5·196	4·774	4·354	3·943	66
68	7·381	7·127	6·843	6·532	6·193	5·832	5·452	5·059	4·659	4·259	3·864	68
70	7·018	6·792	6·538	6·257	5·949	5·618	5·267	4·900	4·525	4·147	3·772	70
72	6·626	6·428	6·204	5·953	5·677	5·377	5·056	4·719	4·370	4·016	3·663	72
74	6·209	6·038	5·843	5·623	5·378	5·110	4·820	4·514	4·194	3·867	3·538	74
76	5·774	5·628	5·460	5·270	5·056	4·819	4·562	4·286	3·997	3·698	3·395	76
78	5·327	5·204	5·061	4·898	4·714	4·508	4·282	4·039	3·780	3·510	3·235	78
80	4·874	4·772	4·653	4·515	4·358	4·182	3·987	3·774	3·546	3·306	3·059	80
82	4·424	4·340	4·242	4·127	3·996	3·847	3·680	3·497	3·299	3·088	2·869	82
84	3·985	3·917	3·836	3·742	3·633	3·508	3·368	3·212	3·042	2·860	2·668	84
86	3·563	3·508	3·443	3·366	3·277	3·174	3·057	2·926	2·782	2·626	2·460	86
88	3·165	3·121	3·068	3·006	2·934	2·849	2·753	2·644	2·524	2·392	2·250	88
90	2·795	2·760	2·718	2·668	2·609	2·541	2·462	2·373	2·272	2·162	2·043	90
92	2·457	2·429	2·396	2·356	2·309	2·254	2·189	2·116	2·033	1·942	1·842	92
94	2·153	2·131	2·105	2·073	2·035	1·990	1·938	1·879	1·811	1·735	1·651	94
96	1·884	1·866	1·845	1·820	1·789	1·753	1·711	1·662	1·607	1·544	1·475	96
98	1·647	1·633	1·616	1·596	1·572	1·543	1·508	1·469	1·423	1·371	1·314	98
100	1·441	1·429	1·416	1·399	1·380	1·356	1·329	1·296	1·259	1·216	1·168	100

Age of female *y*	Age of male *x*											Age of female *y*
	80	82	84	86	88	90	92	94	96	98	100	
60	4·106	3·678	3·276	2·904	2·564	2·258	1·985	1·745	1·536	1·355	1·198	60
62	4·062	3·643	3·248	2·881	2·546	2·243	1·973	1·736	1·529	1·349	1·193	62
64	4·008	3·599	3·213	2·854	2·524	2·225	1·959	1·724	1·519	1·342	1·186	64
66	3·943	3·546	3·170	2·819	2·496	2·204	1·942	1·710	1·508	1·332	1·179	66
68	3·864	3·483	3·119	2·778	2·463	2·177	1·920	1·693	1·494	1·321	1·169	68
70	3·772	3·407	3·057	2·728	2·423	2·144	1·894	1·672	1·477	1·307	1·158	70
72	3·663	3·317	2·984	2·669	2·375	2·106	1·862	1·646	1·456	1·290	1·144	72
74	3·538	3·213	2·898	2·598	2·318	2·059	1·825	1·615	1·431	1·269	1·127	74
76	3·395	3·093	2·799	2·516	2·251	2·004	1·780	1·579	1·401	1·244	1·106	76
78	3·235	2·958	2·686	2·423	2·173	1·941	1·728	1·536	1·365	1·215	1·082	78
80	3·059	2·808	2·559	2·317	2·085	1·868	1·667	1·486	1·324	1·180	1·053	80
82	2·869	2·644	2·420	2·199	1·986	1·785	1·599	1·429	1·276	1·140	1·020	82
84	2·668	2·470	2·270	2·071	1·878	1·694	1·523	1·365	1·222	1·095	·981	84
86	2·460	2·288	2·111	1·935	1·762	1·596	1·439	1·295	1·163	1·045	·939	86
88	2·250	2·102	1·948	1·793	1·640	1·491	1·350	1·219	1·098	·990	·892	88
90	2·043	1·916	1·784	1·649	1·515	1·383	1·257	1·139	1·030	·931	·841	90
92	1·842	1·734	1·622	1·506	1·389	1·273	1·162	1·057	·959	·869	·788	92
94	1·651	1·561	1·465	1·366	1·205	1·165	1·067	·974	·887	·807	·733	94
96	1·475	1·399	1·318	1·234	1·147	1·060	·975	·893	·816	·745	·679	96
98	1·314	1·251	1·182	1·111	1·037	·962	·887	·816	·748	·684	·626	98
100	1·168	1·116	1·058	·997	·934	·870	·805	·743	·683	·627	·575	100

8 per cent

MONETARY FUNCTIONS

FEMALES						MALES					
	SELECT	ULTIMATE				SELECT	ULTIMATE				
Age					Age					Age
x	$a_{[x]}$	D_x	N_x	a_x	x	$a_{[x]}$	D_x	N_x	a_x	x
60	9·326	8 858·7	91 195	9·294	60	8·480	8 492·4	80 097	8·432	60
61	9·159	8 132·3	82 336	9·124	61	8·287	7 753·1	71 604	8·236	61
62	8·985	7 459·2	74 204	8·948	62	8·090	7 067·8	63 851	8·034	62
63	8·805	6 835·4	66 744	8·764	63	7·887	6 432·6	56 784	7·827	63
64	8·618	6 257·1	59 909	8·574	64	7·681	5 844·0	50 351	7·616	64
65	8·425	5 721·0	53 652	8·378	65	7·469	5 298·5	44 507	7·400	65
66	8·226	5 223·9	47 931	8·175	66	7·254	4 793·4	39 208	7·180	66
67	8·022	4 762·8	42 707	7·967	67	7·036	4 325·7	34 415	6·956	67
68	7·812	4 335·3	37 944	7·752	68	6·815	3 893·0	30 089	6·729	68
69	7·597	3 938·8	33 609	7·533	69	6·592	3 493·0	26 196	6·500	69
70	7·377	3 571·2	29 670	7·308	70	6·367	3 123·7	22 703	6·268	70
71	7·154	3 230·4	26 099	7·079	71	6·140	2 783·1	19 580	6·035	71
72	6·926	2 914·5	22 868	6·846	72	5·914	2 469·5	16 797	5·802	72
73	6·696	2 622·0	19 954	6·610	73	5·687	2 181·3	14 327	5·568	73
74	6·463	2 351·3	17 332	6·371	74	5·462	1 917·2	12 146	5·335	74
75	6·229	2 101·0	14 980	6·130	75	5·238	1 675·9	10 229	5·103	75
76	5·992	1 869·9	12 879	5·888	76	5·014	1 456·1	8 553	4·874	76
77	5·755	1 656·8	11 010	5·645	77	4·792	1 256·7	7 097	4·647	77
78	5·518	1 460·8	9 353	5·402	78	4·574	1 076·8	5 840	4·423	78
79	5·282	1 281·0	7 892	5·161	79	4·360	915·3	4 763	4·204	79
80	5·048	1 116·5	6 611	4·921	80	4·151	771·2	3 848	3·989	80
81	4·815	966·7	5 495	4·684	81	3·945	643·7	3 077	3·780	81
82	4·585	830·8	4 528	4·450	82	3·744	531·7	2 433	3·576	82
83	4·360	708·2	3 697	4·221	83	3·550	434·2	1 901	3·379	83
84	4·139	598·3	2 989	3·996	84	3·362	350·3	1 467	3·188	84
85	3·923	500·5	2 391	3·777	85	3·180	278·9	1 117	3·005	85
86	3·713	414·1	1 890	3·564	86	3·006	218·8	838	2·829	86
87	3·510	338·7	1 476	3·358	67	2·839	169·1	619	2·661	87
88	3·313	273·4	1 137	3·160	88	2·679	128·5	450	2·500	88
89	3·124	217·7	864	2·969	89	2·527	96·0	321	2·348	89
90	2·943	170·7	646	2·786	90	2·382	70·4	225	2·204	90
91	2·775	131·7	476	2·612	91	2·251	50·5	155	2·068	91
92	2·615	99·8	344	2·447	92	2·128	35·6	105	1·940	92
93	2·464	74·2	244	2·290	93	2·012	24·5	69	1·820	93
94	2·322	54·1	170	2·143	94	1·904	16·4	45	1·707	94
95	2·188	38·6	116	2·004	95	1·803	10·8	28	1·602	95
96	2·062	26·9	77	1·874	96	1·709	6·9	17	1·505	96
97	1·945	18·3	50	1·752	97	1·622	4·3	10	1·414	97
98	1·836	12·2	32	1·638	98	1·540	2·6	6	1·329	98
99	1·733	7·9	20	1·532	99	1·464	1·5	3	1·250	99
100		5·0	12	1·432	100		0·9	2	1·175	100
101		3·0	7	1·338	101		0·5	1	1·104	101
102		1·8	4	1·247	102		0·3	1	1·034	102
103		1·0	2	1·158	103		0·1	0	0·967	103
104		0·6	1	1·070	104		0·1	0	0·899	104

JOINT LIFE ANNUITIES, a_{xy} **8** per cent

MALE AND FEMALE

ULTIMATE

Age of female y	Age of male x											Age of female y
	60	62	64	66	68	70	72	74	76	78	80	
60	7·445	7·163	6·854	6·519	6·162	5·786	5·396	4·996	4·593	4·193	3·802	60
62	7·266	7·001	6·709	6·392	6·051	5·690	5·314	4·927	4·536	4·146	3·763	62
64	7·059	6·813	6·541	6·242	5·920	5·576	5·217	4·845	4·467	4·089	3·716	64
66	6·824	6·598	6·346	6·068	5·766	5·442	5·101	4·746	4·384	4·019	3·659	66
68	6·559	6·354	6·124	5·868	5·588	5·286	4·965	4·630	4·285	3·937	3·590	68
70	6·266	6·082	5·874	5·641	5·385	5·106	4·808	4·494	4·169	3·839	3·509	70
72	5·946	5·783	5·598	5·389	5·157	4·902	4·628	4·338	4·035	3·725	3·413	72
74	5·602	5·460	5·297	5·111	4·904	4·675	4·426	4·161	3·882	3·593	3·301	74
76	5·238	5·115	4·974	4·812	4·629	4·426	4·203	3·963	3·709	3·444	3·174	76
78	4·859	4·755	4·633	4·494	4·335	4·157	3·960	3·746	3·518	3·278	3·031	78
80	4·472	4·384	4·281	4·162	4·026	3·872	3·700	3·512	3·310	3·096	2·873	80
82	4·082	4·009	3·923	3·823	3·708	3·577	3·429	3·266	3·089	2·900	2·701	82
84	3·697	3·637	3·566	3·483	3·387	3·276	3·151	3·011	2·858	2·693	2·519	84
86	3·324	3·275	3·217	3·148	3·068	2·976	2·871	2·753	2·623	2·481	2·330	86
88	2·967	2·928	2·880	2·825	2·759	2·683	2·596	2·497	2·387	2·266	2·137	88
90	2·633	2·601	2·563	2·518	2·465	2·402	2·331	2·249	2·157	2·055	1·945	90
92	2·325	2·300	2·269	2·233	2·189	2·139	2·080	2·012	1·936	1·851	1·758	92
94	2·046	2·025	2·001	1·972	1·937	1·895	1·847	1·792	1·729	1·658	1·580	94
96	1·796	1·780	1·760	1·737	1·708	1·675	1·636	1·591	1·539	1·480	1·415	96
98	1·576	1·563	1·547	1·528	1·505	1·478	1·446	1·409	1·366	1·318	1·263	98
100	1·382	1·372	1·359	1·344	1·325	1·303	1·277	1·247	1·211	1·171	1·126	100

Age of female y	Age of male x											Age of female y
	80	82	84	86	88	90	92	94	96	98	100	
60	3·802	3·424	3·066	2·731	2·422	2·141	1·889	1·666	1·471	1·302	1·153	60
62	3·763	3·393	3·040	2·710	2·405	2·128	1·879	1·658	1·464	1·296	1·148	62
64	3·716	3·354	3·009	2·685	2·385	2·112	1·866	1·647	1·456	1·289	1·143	64
66	3·659	3·307	2·971	2·654	2·360	2·092	1·849	1·634	1·445	1·280	1·135	66
68	3·590	3·251	2·925	2·617	2·330	2·067	1·830	1·618	1·432	1·269	1·126	68
70	3·509	3·184	2·870	2·572	2·293	2·037	1·805	1·598	1·416	1·256	1·116	70
72	3·413	3·104	2·804	2·518	2·249	2·002	1·776	1·575	1·396	1·240	1·102	72
74	3·301	3·011	2·727	2·454	2·197	1·959	1·741	1·546	1·373	1·220	1·086	74
76	3·174	2·903	2·637	2·380	2·136	1·908	1·700	1·512	1·345	1·197	1·067	76
78	3·031	2·782	2·535	2·294	2·065	1·849	1·651	1·472	1·311	1·169	1·043	78
80	2·873	2·646	2·419	2·197	1·983	1·782	1·595	1·425	1·272	1·137	1·016	80
82	2·701	2·497	2·292	2·089	1·892	1·705	1·531	1·372	1·227	1·099	0·984	82
84	2·519	2·338	2·154	1·971	1·792	1·621	1·460	1·311	1·177	1·056	0·948	84
86	2·330	2·171	2·009	1·845	1·684	1·529	1·382	1·245	1·121	1·008	0·908	86
88	2·137	1·999	1·857	1·713	1·570	1·431	1·298	1·174	1·060	0·956	0·863	88
90	1·945	1·827	1·704	1·579	1·453	1·329	1·210	1·098	0·994	0·900	0·815	90
92	1·758	1·658	1·553	1·444	1·334	1·226	1·120	1·020	0·927	0·842	0·764	92
94	1·580	1·496	1·406	1·313	1·218	1·123	1·030	0·942	0·858	0·782	0·711	94
96	1·415	1·344	1·268	1·188	1·106	1·024	0·942	0·864	0·791	0·722	0·659	96
98	1·263	1·204	1·139	1·071	1·001	0·930	0·859	0·790	0·725	0·664	0·608	98
100	1·126	1·076	1·022	0·964	0·903	0·842	0·780	0·720	0·663	0·609	0·559	100

SECTION V

MANCHESTER UNITY SICKNESS EXPERIENCE 1893–97

OCCUPATION GROUP A,H,J.

COMBINED WITH THE
MORTALITY RATES OF THE

ENGLISH LIFE TABLE NO. 12—MALES

MANCHESTER UNITY SICKNESS EXPERIENCE 1893–97

OCCUPATION GROUP A,H,J.

RATES OF SICKNESS (IN WEEKS PER ANNUM)

Age	First 3 months	Second 3 months	Second 6 months	Second 12 months	After 2 years	All periods	Age
16	·816	·048	·017	·000	·000	·881	16
17	·796	·050	·020	·000	·000	·866	17
18	·766	·054	·024	·004	·000	·848	18
19	·732	·059	·029	·009	·000	·829	19
20	·698	·065	·035	·013	·004	·815	20
21	·670	·071	·041	·019	·009	·810	21
22	·651	·075	·046	·026	·016	·814	22
23	·640	·078	·050	·031	·024	·823	23
24	·635	·080	·053	·034	·032	·834	24
25	·633	·082	·056	·035	·039	·845	25
26	·633	·084	·058	·036	·045	·856	26
27	·635	·085	·060	·038	·049	·867	27
28	·638	·086	·062	·041	·054	·881	28
29	·643	·088	·064	·044	·059	·898	29
30	·649	·090	·066	·048	·065	·918	30
31	·656	·093	·068	·052	·072	·941	31
32	·663	·096	·070	·055	·082	·966	32
33	·670	·100	·073	·055	·093	·991	33
34	·677	·105	·077	·056	·105	1·020	34
35	·685	·110	·081	·058	·118	1·052	35
36	·696	·115	·086	·062	·132	1·091	36
37	·709	·121	·091	·068	·147	1·136	37
38	·726	·128	·096	·074	·166	1·190	38
39	·744	·136	·102	·080	·187	1·249	39
40	·764	·143	·109	·087	·210	1·313	40
41	·784	·151	·116	·092	·235	1·378	41
42	·803	·159	·124	·098	·259	1·443	42
43	·821	·166	·133	·105	·283	1·508	43
44	·839	·174	·141	·112	·308	1·574	44
45	·858	·182	·148	·120	·335	1·643	45
46	·879	·190	·156	·129	·363	1·717	46
47	·904	·201	·165	·138	·396	1·804	47
48	·932	·215	·176	·148	·436	1·907	48
49	·962	·232	·189	·161	·486	2·030	49
50	·994	·249	·206	·177	·551	2·177	50
51	1·027	·268	·225	·196	·631	2·347	51
52	1·061	·288	·247	·219	·724	2·539	52
53	1·096	·309	·272	·244	·829	2·750	53
54	1·134	·330	·300	·275	·939	2·978	54
55	1·175	·353	·332	·310	1·051	3·221	55
56	1·218	·378	·368	·352	1·165	3·481	56
57	1·262	·405	·407	·400	1·285	3·759	57
58	1·308	·435	·449	·455	1·418	4·065	58
59	1·356	·471	·495	·516	1·575	4·413	59
60	1·409	·510	·547	·585	1·770	4·821	60

MANCHESTER UNITY SICKNESS EXPERIENCE 1893–97

OCCUPATION GROUP A,H,J.

RATES OF SICKNESS (IN WEEKS PER ANNUM)

Age	First 3 months	Second 3 months	Second 6 months	Second 12 months	After 2 years	All periods	Age
61	1·466	·555	·607	·665	2·017	5·310	61
62	1·526	·602	·674	·759	2·332	5·893	62
63	1·587	·653	·747	·865	2·718	6·570	63
64	1·650	·707	·824	·980	3·174	7·335	64
65	1·715	·761	·906	1·106	3·695	8·183	65
66	1·779	·820	·997	1·244	4·277	9·117	66
67	1·841	·882	1·100	1·406	4·924	10·153	67
68	1·893	·945	1·213	1·596	5·655	11·302	68
69	1·929	1·008	1·332	1·803	6·487	12·559	69
70	1·948	1·064	1·449	2·017	7·435	13·913	70
71	1·952	1·110	1·554	2·224	8·506	15·346	71
72	1·947	1·147	1·646	2·427	9·679	16·846	72
73	1·940	1·178	1·725	2·592	10·974	18·409	73
74	1·932	1·205	1·793	2·756	12·350	20·036	74
75	1·921	1·228	1·856	2·906	13·802	21·713	75
76	1·901	1·247	1·913	3·031	15·305	23·397	76
77	1·871	1·260	1·956	3·118	16·856	25·061	77
78	1·824	1·266	1·990	3·180	18·428	26·688	78
79	1·764	1·259	1·973	3·216	20·053	28·265	79
80	1·696	1·238	1·932	3·219	21·692	29·777	80
81	1·625	1·206	1·864	3·193	23·313	31·201	81
82	1·559	1·161	1·784	3·133	24·819	32·456	82
83	1·497	1·107	1·707	3·042	26·134	33·487	83
84	1·436	1·055	1·648	2·926	27·246	34·311	84
85	1·365	1·006	1·607	2·811	28·183	34·972	85
86	1·278	·965	1·580	2·701	29·027	35·551	86
87	1·177	·935	1·560	2·601	29·846	36·119	87
88	1·078	·910	1·544	2·522	30·645	36·699	88
89	1·078	·910	1·544	2·522	31·177	37·231	89
90	1·078	·910	1·544	2·522	31·610	37·664	90
91	1·078	·910	1·544	2·522	31·891	37·945	91
92	1·078	·910	1·544	2·522	31·891	37·945	92
93	1·078	·910	1·544	2·522	31·891	37·945	93
94	1·078	·910	1·544	2·522	31·891	37·945	94
95	1·078	·910	1·544	2·522	31·891	37·945	95
96	1·078	·910	1·544	2·522	31·891	37·945	96
97	1·078	·910	1·544	2·522	31·891	37·945	97
98	1·078	·910	1·544	2·522	31·891	37·945	98
99	1·078	·910	1·544	2·522	31·891	37·945	99
100	1·078	·910	1·544	2·522	31·891	37·945	100

4 per cent OCCUPATION GROUP A,H,J.

MORTALITY RATES OF ENGLISH LIFE TABLE NO. 12—MALES

VALUE OF SICKNESS BENEFITS OF 1 PER WEEK FOR THE WHOLE OF LIFE IN PERIODS

Age	First 3 months	Second 3 months	Second 6 months	Second 12 months	After 2 years	All periods	Age
16	18·096	3·776	3·611	3·844	14·306	43·633	16
17	18·002	3·881	3·741	4·002	14·890	44·516	17
18	17·929	3·989	3·874	4·165	15·501	45·458	18
19	17·885	4·099	4·010	4·333	16·139	46·466	19
20	17·875	4·207	4·145	4·502	16·804	47·533	20
21	17·900	4·314	4·280	4·675	17·493	48·662	21
22	17·954	4·420	4·415	4·848	18·205	49·842	22
23	18·029	4·525	4·550	5·021	18·939	51·064	23
24	18·117	4·632	4·686	5·196	19·693	52·324	24
25	18·213	4·740	4·824	5·375	20·469	53·621	25
26	18·315	4·851	4·965	5·559	21·269	54·959	26
27	18·420	4·965	5·110	5·751	22·096	56·342	27
28	18·528	5·082	5·258	5·948	22·953	57·769	28
29	18·638	5·203	5·411	6·151	23·840	59·243	29
30	18·749	5·327	5·568	6·359	24·761	60·764	30
31	18·858	5·454	5·730	6·572	25·714	62·328	31
32	18·967	5·584	5·897	6·790	26·702	63·940	32
33	19·075	5·717	6·070	7·014	27·723	65·599	33
34	19·181	5·852	6·246	7·248	28·775	67·302	34
35	19·286	5·988	6·427	7·492	29·863	69·056	35
36	19·389	6·125	6·612	7·745	30·985	70·856	36
37	19·488	6·263	6·800	8·005	32·144	72·700	37
38	19·581	6·402	6·992	8·271	33·341	74·587	38
39	19·663	6·540	7·188	8·543	34·573	76·507	39
40	19·733	6·678	7·388	8·822	35·842	78·463	40
41	19·790	6·815	7·590	9·108	37·148	80·451	41
42	19·834	6·952	7·795	9·402	38·493	82·476	42
43	19·867	7·088	8·004	9·706	39·884	84·549	43
44	19·889	7·226	8·215	10·020	41·324	86·674	44
45	19·901	7·364	8·430	10·344	42·816	88·855	45
46	19·903	7·503	8·651	10·678	44·364	91·099	46
47	19·893	7·644	8·878	11·023	45·974	93·412	47
48	19·871	7·785	9·111	11·381	47·653	95·801	48
49	19·829	7·922	9·349	11·752	49·394	98·246	49
50	19·772	8·055	9·593	12·137	51·208	100·765	50
51	19·696	8·184	9·839	12·534	53·081	103·334	51
52	19·601	8·307	10·087	12·942	55·016	105·953	52
53	19·489	8·425	10·336	13·362	57·011	108·623	53
54	19·361	8·539	10·584	13·744	59·072	111·300	54
55	19·213	8·648	10·832	14·235	61·208	114·136	55
56	19·044	8·753	11·076	14·686	63·436	116·995	56
57	18·854	8·852	11·316	15·143	65·775	119·940	57
58	18·642	8·946	11·549	15·605	68·245	122·987	58
59	18·408	9·032	11·776	16·068	70·858	126·142	59
60	18·150	9·106	11·995	16·531	73·623	129·405	60

MANCHESTER UNITY SICKNESS EXPERIENCE 1893–97

OCCUPATION GROUP A,H,J. **4** per cent

MORTALITY RATES OF ENGLISH LIFE TABLE NO. 12—MALES

VALUE OF SICKNESS BENEFITS OF 1 PER WEEK FOR THE WHOLE OF LIFE IN PERIODS

Age	First 3 months	Second 3 months	Second 6 months	Second 12 months	After 2 years	All periods	Age
61	17·863	9·165	12·202	16·990	76·532	132·772	61
62	17·544	9·209	12·391	17·440	79·570	136·154	62
63	17·188	9·224	12·558	17·871	82·704	139·545	63
64	16·793	9·217	12·697	18·274	85·900	142·881	64
65	16·355	9·183	12·805	18·644	89·127	146·114	65
66	15·870	9·121	12·880	18·974	92·362	149·207	66
67	15·336	9·025	12·912	19·255	95·581	152·109	67
68	14·750	8·891	12·888	19·464	98·766	154·759	68
69	14·119	8·715	12·798	19·575	101·882	157·089	69
70	13·455	8·497	12·633	19·567	104·879	159·031	70
71	12·772	8·240	12·390	19·431	107·693	160·526	71
72	12·081	7·951	12·078	19·165	110·247	161·522	72
73	11·390	7·639	11·705	18·770	112·496	162·000	73
74	10·700	7·306	11·280	18·273	114·353	161·912	74
75	10·009	6·956	10·811	17·671	115·797	161·244	75
76	9·317	6·590	10·298	16·967	116·783	159·955	76
77	8·628	6·207	9·738	16·175	117·292	158·040	77
78	7·950	5·812	9·141	15·325	117·322	155·550	78
79	7·296	5·407	8·505	14·427	116·864	152·499	79
80	6·677	5·001	7·882	13·499	115·878	148·937	80
81	6·100	4·603	7·268	12·562	114·343	144·876	81
82	5·567	4·224	6·713	11·635	112·245	140·384	82
83	5·074	3·874	6·224	10·743	109·650	135·565	83
84	4·614	3·564	5·805	9·913	106·684	130·580	84
85	4·186	3·294	5·446	9·172	103·500	125·598	85
86	3·797	3·065	5·132	8·524	100·222	120·740	86
87	3·466	2·874	4·854	7·975	96·903	116·072	87
88	3·217	2·716	4·608	7·527	93·508	111·576	88
89	3·068	2·540	4·394	7·177	89·957	107·136	89
90	2·929	2·473	4·196	6·853	86·417	102·868	90
91	2·802	2·365	4·013	6·555	82·892	98·627	91
92	2·685	2·266	3·846	6·282	79·432	94·511	92
93	2·578	2·176	3·692	6·031	76·266	90·743	93
94	2·480	2·094	3·552	5·802	73·369	87·297	94
95	2·391	2·018	3·424	5·593	70·724	84·150	95
96	2·309	1·949	3·307	5·403	68·315	81·283	96
97	2·234	1·886	3·201	5·228	66·107	78·656	97
98	2·165	1·828	3·102	5·067	64·074	76·236	98
99	2·100	1·775	3·013	4·918	62·179	73·985	99
100	2·043	1·722	2·922	4·771	60·370	71·828	100

4 per cent

OCCUPATION GROUP A.H.J.

MORTALITY RATES OF ENGLISH LIFE TABLE NO. 12—MALES

COMMUTATION COLUMNS FOR SICKNESS BENEFIT VALUES

Age x	D_x	K_x^{13}	$K_x^{13\ 13}$	$K_x^{26\ 26}$	$K_x^{52\ 52}$	$K_x^{104\ all}$	Age x
16	51 621	934 156	194 925	186 421	198 447	738 483	16
17	49 597	892 859	192 496	185 561	198 447	738 483	17
18	47 642	854 158	190 065	184 588	198 447	738 483	18
19	45 758	818 386	187 543	183 467	198 260	738 483	19
20	43 947	785 554	184 896	182 167	197 857	738 483	20
21	42 206	755 486	182 096	180 659	197 297	738 311	21
22	40 535	727 768	179 159	178 963	196 511	737 939	22
23	38 931	701 901	176 179	177 135	195 477	737 303	23
24	37 394	677 477	173 202	175 227	194 294	736 387	24
25	35 919	654 200	170 270	173 284	193 048	735 214	25
26	34 503	631 912	167 383	171 312	191 816	733 841	26
27	33 143	610 502	164 541	169 351	190 598	732 319	27
28	31 836	589 870	161 780	167 401	189 363	730 727	28
29	30 580	569 959	159 096	165 466	188 084	729 041	29
30	29 372	550 684	156 458	163 548	186 765	727 273	30
31	28 210	531 998	153 867	161 647	185 383	725 401	31
32	27 092	513 859	151 295	159 767	183 945	723 410	32
33	26 016	496 253	148 746	157 908	182 485	721 233	33
34	24 982	479 168	146 196	156 047	181 082	718 861	34
35	23 986	462 592	143 625	154 161	179 711	716 291	35
36	23 028	446 490	141 039	152 257	178 347	713 517	36
37	22 105	430 783	138 444	150 317	176 948	710 538	37
38	21 216	415 425	135 823	148 345	175 475	707 354	38
39	20 360	400 332	133 162	146 350	173 937	703 903	39
40	19 535	385 490	130 449	144 315	172 341	700 172	40
41	18 740	370 869	127 712	142 229	170 676	696 153	41
42	17 973	356 477	124 940	140 099	168 987	691 839	42
43	17 232	342 342	122 141	137 917	167 262	687 280	43
44	16 516	328 488	119 340	135 672	165 490	682 505	44
45	15 824	314 921	116 527	133 392	163 679	677 524	45
46	15 155	301 631	113 707	131 100	161 820	672 335	46
47	14 507	288 594	110 889	128 786	159 907	666 951	47
48	13 878	275 764	108 037	126 444	157 949	661 331	48
49	13 269	263 113	105 118	124 055	155 940	655 413	49
50	12 676	250 633	102 109	121 604	153 851	649 108	50
51	12 100	238 319	99 023·9	119 052	151 658	642 282	51
52	11 539	226 180	95 856·3	116 392	149 342	634 824	52
53	10 992	214 228	92 611·9	113 610	146 875	626 668	53
54	10 458	202 473	89 297·8	110 692	144 258	617 777	54
55	9 936·7	190 909	85 932·6	107 633	141 453	608 201	55
56	9 427·3	179 533	82 514·8	104 419	138 452	598 025	56
57	8 929·4	168 353	79 045·3	101 041	135 221	587 332	57
58	8 442·7	157 391	75 527·4	97 505·6	131 746	576 170	58
59	7 967·2	146 659	71 958·2	93 821·5	128 013	564 536	59
60	7 502·5	136 170	68 315·0	89 992·7	124 022	552 353	60

MANCHESTER UNITY SICKNESS EXPERIENCE 1893–97

OCCUPATION GROUP A,H,J. **4** per cent

MORTALITY RATES OF ENGLISH LIFE TABLE NO. 12—MALES

COMMUTATION COLUMNS FOR SICKNESS BENEFIT VALUES

Age x	D_x	K_x^{13}	$K_x^{13\ 13}$	$K_x^{26\ 26}$	$K_x^{52\ 52}$	$K_x^{104\ all}$	Age x
61	7 049·0	125 918	64 604·3	86 012·7	119 765	539 475	61
62	6 606·8	115 908	60 814·7	81 868·1	115 225	525 702	62
63	6 176·2	106 155	56 967·0	77 560·2	110 374	510 797	63
64	5 757·6	96 685·4	53 070·6	73 102·9	105 212	494 579	64
65	5 351·3	87 520·4	49 143·5	68 526·0	99 768·8	476 949	65
66	4 957·7	78 680·3	45 220·9	63 855·9	94 067·8	457 903	66
67	4 577·4	70 198·6	41 311·4	59 102·6	88 136·8	437 512	67
68	4 210·7	62 109·0	37 435·8	54 269·0	81 958·7	415 875	68
69	3 858·0	54 471·9	33 623·2	49 375·3	75 519·8	393 060	69
70	3 519·6	47 356·1	29 904·9	44 461·7	68 868·8	369 131	70
71	3 195·8	40 815·2	26 332·2	39 596·3	62 096·1	344 166	71
72	2 887·1	34 878·1	22 956·1	34 869·8	55 331·8	318 294	72
73	2 593·6	29 542·4	19 812·8	30 359·0	48 680·7	291 770	73
74	2 315·9	24 780·1	16 921·0	26 124·4	42 317·8	264 830	74
75	2 054·0	20 558·6	14 288·1	22 206·7	36 296·0	237 846	75
76	1 808·4	16 848·7	11 916·5	18 622·3	30 683·7	211 190	76
77	1 579·5	13 628·4	9 804·08	15 381·6	25 549·1	185 263	77
78	1 367·4	10 871·5	7 947·48	12 499·5	20 954·8	160 426	78
79	1 172·5	8 554·97	6 339·66	9 972·18	16 916·2	137 023	79
80	994·93	6 643·24	4 975·23	7 833·95	13 430·8	115 290	80
81	834·73	5 091·68	3 842·65	6 066·48	10 486·0	95 445·5	81
82	691·80	3 851·37	2 922·15	4 643·75	8 048·87	77 651·5	82
83	565·84	2 871·03	2 192·09	3 521·92	6 078·75	62 044·7	83
84	456·37	2 105·89	1 626·29	2 649·45	4 523·95	48 687·3	84
85	362·61	1 517·86	1 194·27	1 974·61	3 325·78	37 530·2	85
86	283·61	1 076·82	869·22	1 455·37	2 417·51	28 424·0	86
87	218·17	756·18	627·11	1 058·97	1 739·86	21 141·4	87
88	164·95	530·71	448·01	760·13	1 241·61	15 424·2	88
89	122·50	375·78	317·22	538·22	879·14	11 019·7	89
90	89·310	261·61	220·84	374·70	612·05	7 717·90	90
91	63·896	179·03	151·13	256·43	418·85	5 296·46	91
92	44·849	120·42	101·65	172·48	281·72	3 562·44	92
93	30·878	79·60	67·20	114·01	186·23	2 354·93	93
94	20·854	51·72	43·66	74·08	121·00	1 530·03	94
95	13·817	33·03	27·88	47·31	77·28	977·20	95
96	8·982 7	20·74	17·51	29·71	48·53	613·65	96
97	5·733 1	12·81	10·81	18·35	29·97	379·00	97
98	3·594 0	7·78	6·57	11·15	18·21	230·28	98
99	2·214 1	4·65	3·93	6·67	10·89	137·67	99
100	1·341 4	2·74	2·31	3·92	6·40	80·98	100

SECTION VI

PENSION FUND TABLES

The following tables are intended only for the use of students working examples in connection with Pension Funds. The rates of decrement, the relative salary scale and the annuity values at retirement have been arbitrarily determined for this purpose only, and the tables cannot, therefore, be regarded as suitable for practical use in connexion with the valuation of or the calculation of rates of contribution for any actual fund.

These tables are reproduced from the text book *Life Contingencies* by A. Neill, published by Heinemann.

PENSION FUND TABLES

SERVICE TABLE AND RELATIVE SALARY SCALE

Age x	l_x	w_x	d_x	i_x	r_x	s_x	Age x
18	100 000	10 000	80			1·00	18
19	89 920	8 992	72			1·10	19
20	80 856	8 085	65			1·21	20
21	72 706	6 907	58			1·33	21
22	65 741	5 917	59			1·46	22
23	59 765	5 080	54			1·59	23
24	54 631	4 371	49			1·73	24
25	50 211	3 766	50			1·87	25
26	46 395	3 248	46			2·02	26
27	43 101	2 802	47			2·16	27
28	40 252	2 415	44			2·29	28
29	37 793	2 079	45			2·42	29
30	35 669	1 784	46			2·55	30
31	33 839	1 557	47	3		2·67	31
32	32 232	1 354	49	3		2·78	32
33	30 826	1 171	49	3		2·88	33
34	29 603	1 007	50	6		2·98	34
35	28 540	856	51	6		3·08	35
36	27 627	746	52	6		3·18	36
37	26 823	644	54	8		3·28	37
38	26 117	548	55	8		3·38	38
39	25 506	459	56	8		3·48	39
40	24 983	375	57	10		3·58	40
41	24 541	295	61	10		3·68	41
42	24 175	218	65	12		3·78	42
43	23 880	143	69	12		3·88	43
44	23 656	71	76	14		3·98	44
45	23 495		82	14		4·08	45
46	23 399		92	16		4·18	46
47	23 291		100	19		4·28	47
48	23 172		108	21		4·38	48
49	23 043		120	23		4·47	49
50	22 900		130	28		4·56	50
51	22 742		143	32		4·65	51
52	22 567		156	39		4·73	52
53	22 372		170	44		4·81	53
54	22 158		184	53		4·88	54
55	21 921		200	61		4·95	55
56	21 660		217	71		5·01	56
57	21 372		236	83		5·07	57
58	21 053		254	99		5·13	58
59	20 700		276	118		5·19	59
60	20 306		297	146	4 061	5·24	60
61	15 802		253	153	2 370	5·29	61
62	13 026		228	178	1 303	5·33	62
63	11 317		216	217	1 132	5·37	63
64	9 752		203	265	975	5·40	64
65	8 309				8 309		65

CONTRIBUTION FUNCTIONS **4 per cent**

Age x	D_x	$\bar{D}_x = \frac{1}{2}(D_x + D_{x+1})$	$\bar{N}_x = \Sigma \bar{D}_x$	${}^{s}\bar{D}_x = s_x \bar{D}_x$	${}^{s}\bar{N}_x = \Sigma {}^{s}\bar{D}_x$	${}^{s}D_x = s_x D_x$	Age x
18	49 363	46 021	438 252	46 021	973 119	49 363	18
19	42 680	39 791	392 231	43 770	927 098	46 948	19
20	36 902	34 404	352 440	41 629	883 328	44 651	20
21	31 906	29 823	318 037	39 665	841 699	42 435	21
22	27 740	25 994	288 214	37 951	802 034	40 500	22
23	24 248	22 780	262 220	36 220	764 083	38 554	23
24	21 313	20 074	239 440	34 728	727 863	36 871	24
25	18 835	17 785	219 366	33 258	693 135	35 222	25
26	16 734	15 841	201 581	31 999	659 877	33 803	26
27	14 948	14 186	185 740	30 642	627 878	32 288	27
28	13 423	12 771	171 555	29 246	597 236	30 739	28
29	12 118	11 558	158 784	27 970	567 990	29 326	29
30	10 997	10 515	147 226	26 813	540 020	28 043	30
31	10 032	9 610	136 711	25 659	513 207	26 785	31
32	9 188	8 819	127 102	24 517	487 548	25 542	32
33	8 449	8 126	118 283	23 403	463 031	24 334	33
34	7 802	7 518	110 157	22 404	439 628	23 249	34
35	7 232	6 982	102 640	21 505	417 224	22 276	35
36	6 732	6 508	95 658	20 695	395 719	21 407	36
37	6 284	6 084	89 150	19 956	375 024	20 613	37
38	5 884	5 704	83 066	19 280	355 068	19 887	38
39	5 525	5 364	77 362	18 667	335 788	19 227	39
40	5 204	5 059	71 997	18 111	317 121	18 629	40
41	4 915	4 785	66 938	17 609	299 010	18 087	41
42	4 656	4 539	62 153	17 157	281 401	17 598	42
43	4 422	4 317	57 614	16 750	264 244	17 157	43
44	4 212	4 117	53 297	16 386	247 494	16 763	44
45	4 022	3 937	49 180	16 063	231 108	16 411	45
46	3 852	3 769	45 243	15 754	215 045	16 100	46
47	3 687	3 607	41 474	15 438	199 291	15 778	47
48	3 527	3 449	37 867	15 107	183 853	15 447	48
49	3 372	3 297	34 418	14 738	168 746	15 073	49
50	3 222	3 150	31 121	14 364	154 008	14 693	50
51	3 077	3 006	27 971	13 978	139 644	14 308	51
52	2 936	2 867	24 965	13 561	125 666	13 886	52
53	2 799	2 732	22 098	13 141	112 105	13 461	53
54	2 665	2 600	19 366	12 688	98 964	13 006	54
55	2 535	2 472	16 765	12 236	86 276	12 549	55
56	2 409	2 347	14 294	11 758	74 040	12 068	56
57	2 285	2 225	11 947	11 281	62 282	11 586	57
58	2 165	2 106	9 722	10 804	51 001	11 105	58
59	2 046	1 988	7 616	10 318	40 197	10 621	59
60	1 930	1 687	5 628	8 840	29 879	10 115	60
61	1 444	1 295	3 940	6 851	21 039	7 641	61
62	1 145	1 051	2 646	5 602	14 188	6 102	62
63	956	874	1 595	4 693	8 586	5 136	63
64	792	721	721	3 893	3 893	4 279	64
65	649						

Each summation is of values for ages ranging from the age shown in the margin at annual intervals to age 64.

4 per cent ILL-HEALTH RETIREMENT FUNCTIONS

Age x	$\bar{a}^{i}_{x+\frac{1}{2}}$	$C^{i}_{x}=v^{x+\frac{1}{2}}\times i_x$	$M^{i}_{x}=\Sigma C^{i}_{x}$	$\bar{R}^{i}_{x}=\Sigma(M^{i}_{x}-\frac{1}{2}C^{i}_{x})$	$C^{ia}_{x}=v^{x+\frac{1}{2}}\times i_x\bar{a}^{i}_{x+\frac{1}{2}}$	$M^{ia}_{x}=\Sigma C^{ia}_{x}$	$\bar{R}^{ia}_{x}=\Sigma(M^{ia}_{x}-\frac{1}{2}C^{ia}_{x})$	Age x
20			189	6 841		1 821	64 923	20
25			189	5 897		1 821	55 820	25
30			189	4 952		1 821	46 718	30
35	10·864	1	185	4 016	15	1 774	37 699	35
40	10·764	2	177	3 111	22	1 688	29 034	40
45	10·606	2	166	2 254	25	1 572	20 873	45
50	10·357	4	151	1 459	39	1 421	13 367	50
55	9·966	7	127	757	69	1 170	6 831	55
56	9·864	8	120	634	77	1 100	5 696	56
57	9·753	9	112	518	85	1 023	4 634	57
58	9·631	10	103	410	96	938	3 653	58
59	9·498	11	93	312	109	842	2 763	59
60	9·351	14	82	224	127	733	1 975	60
61	9·191	14	68	149	126	606	1 306	61
62	9·016	15	54	88	139	480	763	62
63	8·825	18	39	41	159	341	353	63
64	8·615	21	21	11	182	182	91	64

Age x	${}^{s}\bar{M}^{ia}_{x}=s_x(M^{ia}_{x}-\frac{1}{2}C^{ia}_{x})$	${}^{s}\bar{R}^{ia}_{x}=\Sigma{}^{s}\bar{M}^{ia}_{x}$	${}^{z}C^{ia}_{x}=z_{x+\frac{1}{2}}C^{ia}_{x}$	${}^{z}M^{ia}_{x}=\Sigma{}^{z}C^{ia}_{x}$	${}^{z}\bar{R}^{ia}_{x}=\Sigma({}^{z}M^{ia}_{x}-\frac{1}{2}{}^{z}C^{ia}_{x})$	Age x
20	2 203	215 088		8 636	318 302	20
25	3 404	201 761		8 636	275 122	25
30	4 642	182 173		8 636	231 941	30
35	5 441	157 184	45	8 513	188 977	35
40	6 004	128 781	75	8 243	147 045	40
45	6 361	97 957	98	7 819	106 825	45
50	6 391	65 879	173	7 197	69 159	50
55	5 618	35 026	335	6 036	35 759	55
56	5 320	29 408	377	5 700	29 891	56
57	4 972	24 089	424	5 323	24 379	57
58	4 566	19 117	484	4 899	19 268	58
59	4 088	14 550	554	4 415	14 611	59
60	3 509	10 462	657	3 861	10 472	60
61	2 871	6 953	658	3 204	6 940	61
62	2 187	4 082	729	2 546	4 064	62
63	1 404	1 895	844	1 817	1 882	63
64	491	491	974	974	487	64

Each summation is of values for ages ranging from the age shown in the margin at annual intervals to age 64 although only quinquennial values are shown up to age 55.

$$z_x=\tfrac{1}{3}(s_{x-3}+s_{x-2}+s_{x-1})$$

$$z_{x+\frac{1}{2}}=\tfrac{1}{2}(z_x+z_{x+1})$$

AGE RETIREMENT FUNCTIONS **4 per cent**

Age x	$\bar{a}^{r}_{x+\frac{1}{2}}$ ($\bar{a}^{r}_{x}$ at 65)	$C^{r}_{x}=v^{x+\frac{1}{2}}r_{x}$ $\cdot(v^{x}r_{x}$ at 65)	$M^{r}_{x}=\Sigma C^{r}_{x}$	$\bar{R}^{r}_{x}=\Sigma(M^{r}_{x}-\frac{1}{2}C^{r}_{x})$	$C^{ra}_{x}=v^{x+\frac{1}{2}}\times r_{x}\bar{a}^{r}_{x+\frac{1}{2}}$ ($v^{x}r_{x}\bar{a}^{r}_{x}$ at 65)	$M^{ra}_{x}=\Sigma C^{ra}_{x}$	$\bar{R}^{ra}_{x}=\Sigma(M^{ra}_{x}-\frac{1}{2}C^{ra}_{x})$	Age x
20			1 524	65 669		16 742	719 370	20
25			1 524	58 049		16 742	635 660	25
30			1 524	50 430		16 742	551 950	30
35			1 524	42 810		16 742	468 240	35
40			1 524	35 191		16 742	384 530	40
45			1 524	27 571		16 742	300 820	45
50			1 524	19 951		16 742	217 110	50
55			1 524	12 332		16 742	133 399	55
56			1 524	10 808		16 742	116 657	56
57			1 524	9 284		16 742	99 915	57
58			1 524	7 760		16 742	83 173	58
59			1 524	6 236		16 742	66 431	59
60	11·939	379	1 524	4 712	4 520	16 742	49 689	60
61	11·574	212	1 145	3 378	2 459	12 222	35 207	61
62	11·207	112	933	2 339	1 258	9 764	24 214	62
63	10·839	94	821	1 462	1 016	8 505	15 079	63
64	10·470	78	727	688	814	7 489	7 082	64
65	10·238	649	649		6 675	6 675		65

Age x	${}^{s}\bar{M}^{ra}_{x}=s_{x}(M^{ra}_{x}-\frac{1}{2}C^{ra}_{x})$	${}^{s}\bar{R}^{ra}_{x}=\Sigma{}^{s}\bar{M}^{ra}_{x}$	${}^{z}C^{ra}_{x}=z_{x+\frac{1}{2}}C^{ra}_{x}$ ($z_{x}C^{ra}_{x}$ at 65)	${}^{z}M^{ra}_{x}=\Sigma{}^{z}C^{ra}_{x}$	${}^{z}\bar{R}^{ra}_{x}=\Sigma({}^{z}M^{ra}_{x}-\frac{1}{2}{}^{z}C^{ra}_{x})$	Age x
20	20 258	2 567 780		88 345	3 798 939	20
25	31 308	2 445 228		88 345	3 357 212	25
30	42 692	2 265 084		88 345	2 915 486	30
35	51 565	2 033 040		88 345	2 473 760	35
40	59 936	1 758 471		88 345	2 032 033	40
45	68 307	1 442 047		88 345	1 590 307	45
50	76 344	1 083 936		88 345	1 148 580	50
55	82 873	688 322		88 345	706 854	55
56	83 877	605 450		88 345	618 509	56
57	84 882	521 572		88 345	530 163	57
58	85 886	436 690		88 345	441 818	58
59	86 891	350 804		88 345	353 473	59
60	75 887	263 913	23 321	88 345	265 127	60
61	58 152	188 026	12 811	65 024	188 443	61
62	48 686	129 874	6 618	52 213	129 824	62
63	42 944	81 187	5 397	45 596	80 920	63
64	38 243	38 243	4 352	40 199	38 022	64
65			35 846	35 846		65

Each summation is of values for ages ranging from the age shown in the margin at annual intervals to age 64 (or 65 as appropriate) although only quinquennial values are shown up to age 55.

$$z_{x}=\tfrac{1}{3}(s_{x-3}+s_{x-2}+s_{x-1})$$

$$z_{x+\frac{1}{2}}=\tfrac{1}{2}(z_{x}+z_{x+1})$$

4 per cent

FUNCTIONS FOR PAYMENTS ON DEATH WITH INTEREST ACCUMULATED AT **3** PER CENT PER ANNUM

Age x	${}^{j}C_x^d = v^{x+\frac{1}{2}}(1+j)^{x+\frac{1}{2}}d_x$	${}^{j}M_x^d = \Sigma {}^{j}C_x^d$	${}^{j}\bar{R}_x^d = \Sigma_t \frac{{}^{j}M_x^d - \frac{1}{2}{}^{j}C_x^d}{(1+j)^{x+\frac{1}{2}}}$	${}^{sj}\bar{R}_x^d = \Sigma_t \frac{s_x({}^{j}M_x^d - \frac{1}{2}{}^{j}C_x^d)}{(1+j)^{x+\frac{1}{2}}}$	Age x
20	53	3 110	31 397	87 726	20
25	39	2 881	23 699	76 546	25
30	35	2 701	17 504	63 288	30
35	36	2 525	12 495	49 451	35
40	39	2 338	8 474	36 298	40
45	53	2 120	5 288	24 285	45
50	80	1 803	2 859	13 927	50
55	117	1 332	1 177	5 999	55
56	125	1 215	930	4 776	56
57	135	1 090	713	3 690	57
58	145	955	526	2 743	58
59	155	810	369	1 940	59
60	165	655	243	1 285	60
61	140	490	147	783	61
62	124	350	79	423	62
63	117	226	34	181	63
64	109	109	8	43	64

Each summation is of values for ages ranging from the age shown in the margin at annual intervals to age 64 although only quinquennial values are shown up to age 55.

FUNCTIONS FOR PAYMENTS ON WITHDRAWAL WITH INTEREST ACCUMULATED AT **3** PER CENT PER ANNUM

Age x	${}^{j}C_x^w = v^{x+\frac{1}{2}}(1+j)^{x+\frac{1}{2}}w_x$	${}^{j}M_x^w = \Sigma {}^{j}C_x^w$	${}^{j}\bar{R}_x^w = \Sigma_t \frac{{}^{j}M_x^w - \frac{1}{2}{}^{j}C_x^w}{(1+j)^{x+\frac{1}{2}}}$	${}^{sj}\bar{R}_x^w = \Sigma_t \frac{s_x({}^{j}M_x^w - \frac{1}{2}{}^{j}C_x^w)}{(1+j)^{x+\frac{1}{2}}}$	Age x
20	6 633	43 550	119 400	207 911	20
25	2 944	19 045	42 211	98 740	25
30	1 328	8 041	13 391	38 289	30
35	608	3 007	3 281	10 741	35
36	524	2 399	2 334	7 826	36
37	448	1 875	1 608	5 516	37
38	378	1 427	1 063	3 729	38
39	313	1 049	666	2 389	39
40	253	735	389	1 424	40
41	197	482	205	766	41
42	144	285	93	352	42
43	94	140	32	124	43
44	46	46	6	24	44

Each summation is of values for ages ranging from the age shown in the margin at annual intervals to age 44, the highest age at which withdrawals are assumed to take place although only quinquennial values are shown up to age 35.

SECTION VII

INTERNATIONAL ACTUARIAL NOTATION

Reproduced from *Bulletin of the Permanent Committee of the International Congress of Actuaries*, **46,** 207 (1949), *Journal of the Institute of Actuaries*, **75,** 121 (1949) and *Transactions of the Faculty of Actuaries*, **19,** 89 (1949–50).

INTERNATIONAL ACTUARIAL NOTATION

The existing international actuarial notation was founded on the "Key to the Notation" given in the *Institute of Actuaries Text Book, Part II, Life Contingencies* by George King (1887), and was adopted by the Second International Actuarial Congress, London, 1898 (*Transactions*, pp. 618–640) with minor revisions approved by the Third International Congress, Paris, 1900 (*Transactions*, pp. 622–651). Further revisions were discussed during 1937–1939, and were introduced by the Institute and the Faculty in 1949 (*J.I.A.*, **75,** 121 and *T.F.A.*, **19,** 89). These revisions were finally adopted internationally at the Fourteenth International Actuarial Congress, Madrid, 1954 (*Bulletin of the Permanent Committee of the International Congress of Actuaries* (1949), **46,** pp. 207–217).

The general principles on which the system is based are as follows:

To each fundamental symbolic letter are attached signs and letters each having its own signification.

The lower space to the left is reserved for signs indicating the conditions relative to the duration of the operations and to their position with regard to time.

The lower space to the right is reserved for signs indicating the conditions relative to ages and the order of succession of the events.

The upper space to the right is reserved for signs indicating the periodicity of the events.

The upper space to the left is free, and in it can be placed signs corresponding to other notions.

In what follows these two conventions are used:

A letter enclosed in brackets, thus (x), denotes 'a person aged x'.

A letter or number enclosed in a right angle, thus $\overline{n|}$ or $\overline{15|}$, denotes a term-certain of years.

FUNDAMENTAL SYMBOLIC LETTERS

Interest

i = the effective rate of interest, namely, the total interest earned on 1 in a year on the assumption that the actual interest (if receivable otherwise than yearly) is invested forthwith as it becomes due on the same terms as the original principal.

$v = (1+i)^{-1}$ = the present value of 1 due a year hence.

$d = 1 - v$ = the discount on 1 due a year hence.

$\delta = \log_e(1+i) = -\log_e(1-d)$ = the force of interest or the force of discount.

Mortality Tables

l = number living.

d = number dying.

p = probability of living.

q = probability of dying.
μ = force of mortality.
m = central death rate.
a = present value of an annuity.
s = amount of an annuity.
e = expectation of life.
A = present value of an assurance.
E = present value of an endowment.
P = premium per annum. P generally refers to net premiums, π to special premiums.
π = premium per annum.
V = policy value.
W = paid-up policy.

The methods of using the foregoing principal letters and their precise meaning when added to by suffixes, etc., follow.

Interest

$i^{(m)} = m\{(1+i)^{1/m} - 1\}$ = the nominal rate of interest, convertible m times a year.

$a_{\overline{n}|} = v + v^2 + \ldots + v^n$ = the value of an annuity-certain of 1 per annum for n years, the payments being made at the end of each year.

$\ddot{a}_{\overline{n}|} = 1 + v + v^2 + \ldots + v^{n-1}$ = the value of a similar annuity, the payments being made at the beginning of each year.

$s_{\overline{n}|} = 1 + (1+i) + (1+i)^2 + \ldots + (1+i)^{n-1}$ = the amount of an annuity-certain of 1 per annum for n years, the payments being made at the end of each year.

$\ddot{s}_{\overline{n}|} = (1+i) + (1+i)^2 + \ldots + (1+i)^n$ = the amount of a similar annuity, the payments being made at the beginning of each year.

The diaeresis or trema above the letters a and s is used as a symbol of acceleration of payments.

Mortality Tables

The ages of the lives involved are denoted by letters placed as suffixes in the lower space to the right. Thus:

l_x = the number of persons who attain age x according to the mortality table.

$d_x = l_x - l_{x+1}$ = the number of persons who die between ages x and $x+1$ according to the mortality table.

p_x = the probability that (x) will live 1 year.

q_x = the probability that (x) will die within 1 year.

$\mu_x = -\frac{1}{l_x}\frac{dl_x}{dx}$ = the force of mortality at age x.

m_x = the central death-rate for the year of age x to $x+1$ $= d_x \Big/ \int_0^1 l_{x+t}\,dt$.

e_x = the curtate 'expectation of life' (or average after-lifetime) of (x).

In the following it is always to be understood (unless otherwise expressed) that the annual payment of an annuity is 1, that the sum assured in any case is 1, and that the symbols indicate the present values:

a_x = an annuity, first payment at the end of a year, to continue during the life of (x).

$\ddot{a}_x = 1 + a_x$ = an 'annuity-due' to continue during the life of (x), the first payment to be made at once.

A_x = an assurance payable at the end of the year of death of (x).

Note. $e_x = a_x$ at rate of interest $i = 0$.

A letter or number at the lower left corner of the principal symbol denotes the number of years involved in the probablity or benefit in question. Thus:

${}_np_x$ = the probability that (x) will live n years.

${}_nq_x$ = the probability that (x) will die within n years.

Note. When $n = 1$ it is customary to omit it, as shown on page 98, provided no ambiguity is introduced.

${}_nE_x = v^n {}_np_x$ = the value of an endowment on (x) payable at the end of n years if (x) be then alive.

If the letter or number comes before a perpendicular bar it shows that a period of deferment is meant. Thus:

${}_{n|}q_x$ = the probability that (x) will die in a year, deferred n years; that is, that he will die in the $(n+1)$th year.

${}_{n|}a_x$ = an annuity on (x) deferred n years; that is, that the first payment is to be made at the end of $(n+1)$ years.

${}_{n|t}a_x$ = an intercepted or deferred temporary annuity on (x) deferred n years and, after that, to run for t years.

A letter or number in brackets at the upper right corner of the principal symbol shows the number of intervals into which the year is to be divided. Thus:

$a_x^{(m)}$ = an annuity on (x) payable by m instalments of $1/m$ each throughout the year, the first payment being one of $1/m$ at the end of the first $1/m$th of a year.

$\ddot{a}_x^{(m)}$ = a similar annuity but the first payment of $1/m$ is to be made at once, so that

$\ddot{a}_x^{(m)} = 1/m + a_x^{(m)}$.

$A_x^{(m)}$ = an assurance payable at the end of that fraction $1/m$ of a year in which (x) dies.

If $m \to \infty$, then instead of writing (∞) a bar is placed over the principal symbol. Thus:

$\bar{a}$ = a continuous or momently annuity.
$\bar{A}$ = an assurance payable at the moment of death.

A small circle placed over the principal symbol shows that the benefit is to be complete. Thus:

$\mathring{a}$ = a complete annuity.
$\mathring{e}$ = the complete expectation of life.

Note. Some consider that $\bar{e}$ would be as appropriate as $\mathring{e}$. As $e_x = a_x$ at rate of interest $i=0$, so also the complete expectation of life $= \bar{a}_x$ at rate of interest $i=0$.

When more than one life is involved the following rules are observed:

If there are two or more letters or numbers in a suffix without any distinguishing mark, joint lives are intended. Thus:

$$l_{xy} = l_x \times l_y, \quad d_{xy} = l_{xy} - l_{x+1:y+1}.$$

Note. When, for the sake of distinctness, it is desired to separate letters or numbers in a suffix, a colon is placed between them. A colon is used instead of a point or comma to avoid confusion with decimals when numbers are involved.

a_{xyz} = an annuity, first payment at the end of a year, to continue during the joint lives of (x), (y) and (z).
A_{xyz} = an assurance payable at the end of the year of the failure of the joint lives (x), (y) and (z).

In place of a life a term-certain may be involved. Thus:

$a_{x:\overline{n}|}$ = an annuity to continue during the joint duration of the life of (x) and a term of n years certain; that is, a temporary annuity for n years on the life of (x).
$A_{x:\overline{n}|}$ = an assurance payable at the end of the year of death of (x) if he die within n years, or at the end of n years if (x) be then alive; that is, an endowment assurance for n years.

If a perpendicular bar separates the letters in the suffix, then the status after the bar is to follow the status before the bar. Thus:

$a_{y\,x}$ = a reversionary annuity, that is, an annuity on the life of (x) after the death of (y).
$A_{z\,xy}$ = an assurance payable on the failure of the joint lives (x) and (y) provided both these lives survive (z).

If a horizontal bar appears above the suffix then survivors of the lives, and not joint lives, are intended. The number of survivors can be denoted by a letter or number over the right end of the bar. If that letter, say r, is not distinguished by any mark, then the meaning is *at least r* survivors; but if it is enclosed in square brackets, $[r]$, then the meaning is *exactly r* survivors. If

no letter or number appears over the bar, then unity is supposed and the meaning is *at least one* survivor. Thus:

$a_{\overline{xyz}}$ = an annuity payable so long as at least one of the three lives (x), (y) and (z) is alive.

$a^{2}_{\overline{xyz}}$ = an annuity payable so long as at least two of the three lives (x), (y) and (z) are alive.

$p^{[2]}_{\overline{xyz}}$ = probability that exactly two of the three lives (x), (y) and (z) will survive a year.

${}_{n}q_{\overline{xy}}$ = probability that the survivor of the two lives (x) and (y) will die within n years $= {}_{n}q_{x} \times {}_{n}q_{y}$.

${}_{n}A_{\overline{xy}}$ = an assurance payable at the end of the year of death of the survivor of the lives (x) and (y) provided the death occurs within n years.

When numerals are placed above or below the letters of the suffix, they designate the order in which the lives are to fail. The numeral placed *over* the suffix points out the life whose failure will finally determine the event; and the numerals placed *under* the suffix indicate the order in which the other lives involved are to fail. Thus:

A^{1}_{xy} = an assurance payable at the end of the year of death of (x) if he dies first of the two lives (x) and (y).

A^{2}_{xyz} = an assurance payable at the end of the year of death of (x) if he dies second of the three lives (x), (y) and (z).

$A^{2}_{\underset{1}{xyz}}$ = an assurance payable at the end of the year of death of (x) if he dies second of the three lives, (y) having died first.

$A_{\underset{3}{xy:z}}$ = an assurance payable at the end of the year of death of the survivor of (x) and (y) if he dies before (z).

$A^{1}_{x:\overline{n}|}$ = an assurance payable at the end of the year of death of (x) if he dies within a term of n years.

$a^{\underset{1}{}}_{\overline{yz}|x}$ or $a^{2}_{\overline{yz}|x}$ = an annuity to (x) after the failure of the survivor of (y) and (z), provided (z) fails before (y).

Note. Sometimes to make quite clear that a joint-life status is involved a symbol $\neg$ is placed above the lives included. Thus $A^{\underset{\neg}{1}}_{xy:\overline{n}|}$ = a joint-life temporary assurance on (x) and (y).

In the case of reversionary annuities, distinction has sometimes to be made between those where the times of year at which payments are to take place are determined at the outset and those where the times depend on the failure of the preceding status. Thus:

$a_{y|x}$ = annuity to (x), first payment at the end of the year of the death of (y) or, on the average, about 6 months after his death.

$\hat{a}_{y|x}$ = annuity to (x), first payment 1 year after the death of (y).

$\overset{5}{\hat{a}}_{y|x}$ = complete annuity to (x), first payment 1 year after the death of (y).

ANNUAL PREMIUMS

The symbol P with the appropriate suffix or suffixes is used in simple cases, where no misunderstanding can occur, to denote the annual premium for a benefit. Thus:

P_x = the annual premium for an assurance payable at the end of the year of death of (x).

$P_{x:\overline{n}|}$ = the annual premium for an endowment assurance on (x) payable after n years or at the end of the year of death of (x) if he die within n years.

P^{1}_{xy} = the annual premium for a contingent assurance payable at the end of the year of death of (x) if he die before (y).

In all these cases it is optional to use the symbol P in conjunction with the principal symbol denoting the benefit. Thus instead of $P_{x:\overline{n}|}$ we may write $P(A_{x:\overline{n}|})$. In the more complicated cases it is necessary to use the two symbols in this way. Suffixes, etc., showing the conditions of the benefit are to be attached to the principal letter, and those showing the condition of payment of the premium are to be attached to the subsidiary symbol P. Thus:

${}_nP(\bar{A}_x)$ = the annual premium payable for n years only for an assurance payable at the moment of the death of (x).

$P_{xy}(A_x)$ = the annual premium payable during the joint lives of (x) and (y) for an assurance payable at the end of the year of death of (x).

${}_nP({}_{n|}a_x)$ = the annual premium payable for n years only for an annuity on (x) deferred n years.

${}_tP^{(m)}(A_{x:\overline{n}|})$ = the annual premium payable for t years only, by m instalments throughout the year, for an endowment assurance for n years on (x) (see below as to $P^{(m)}$).

Notes. (1) As a general rule the symbol P could be used without the principal symbol in the case of assurances where the sum assured is payable at the end of the year of death, but if it is payable at other times, or if the benefit is an annuity, then the principal symbol should be used.

(2) $P^{(m)}_x$. A point which was not brought out when the international system was adopted is that there are two kinds of premiums payable m times a year, viz. those which cease on payment of the instalment immediately preceding death and those which continue to be payable to the end of the year of death. To distinguish the latter the m is sometimes enclosed in square brackets, thus $P^{[m]}$.

POLICY VALUES AND PAID-UP POLICIES

${}_tV_x$ = the value of an ordinary whole-life assurance on (x) which has been t years in force, the premium then just due being unpaid.

${}_tW_x$ = the paid-up policy the present value of which is ${}_tV_x$.

The symbols V and W may, in simple cases, be used alone, but in the more complicated cases it is necessary to insert the full symbol for the benefit thus:

$${}_tV^{(m)}(\bar{A}_{x:\overline{n}|}) \text{ (corresponding to } P^{(m)}(\bar{A}_{x:\overline{n}|})), \quad {}_tV({}_n|a_x).$$

Note. As a general rule V or W can be used as the main symbol if the sum assured is payable at the end of the year of death and the premium is payable periodically throughout the duration of the assurance. If the premium is payable for a limited number of years, say n, the policy value after t years could be written ${}_tV[{}_nP(A)]$, or, if desired, ${}^n_tV(A)$.

In investigations where modified premiums and policy values are in question such modification may be denoted by adding accents to the symbols. Thus, when a premium other than the net premium (a valuation premium) is used in a valuation it may be denoted by P' and the corresponding policy value by V'. Similarly, the office (or commercial) premium may be denoted by P'' and the corresponding paid-up policy by W''.

COMPOUND SYMBOLS

(Ia) = an annuity
(IA) = an assurance
} commencing at 1 and increasing 1 per annum.

If the whole benefit is to be temporary the symbol of limitation is placed outside the brackets. Thus:

$(Ia)_{x:\overline{n}|}$ = a temporary increasing annuity.
$(IA)^1_{x:\overline{n}|}$ = a temporary increasing assurance.

If only the increase is to be temporary but the benefit is to continue thereafter, then the symbol of limitation is placed immediately after the symbol I. Thus:

$(I_{\overline{n}|}a)_x$ = a whole-life annuity
$(I_{\overline{n}|}A)_x$ = a whole-life assurance
} increasing for n years and thereafter stationary.

If the benefit is a decreasing one, the corresponding symbol is D. From the nature of the case this decrease must have a limit, as otherwise negative values might be implied. Thus:

$(D_{\overline{n}|}A)^1_{x:\overline{n}|}$ = a temporary assurance commencing at n and decreasing by 1 in each successive year.

If the benefit is a varying one the corresponding symbol is v. Thus:

(va) = a varying annuity.

COMMUTATION COLUMNS

Single lives

$$D_x = v^x l_x,$$
$$N_x = D_x + D_{x+1} + D_{x+2} + \text{etc.},$$
$$S_x = N_x + N_{x+1} + N_{x+2} + \text{etc.},$$
$$C_x = v^{x+1} d_x,$$
$$M_x = C_x + C_{x+1} + C_{x+2} + \text{etc.},$$
$$R_x = M_x + M_{x+1} + M_{x+2} + \text{etc.}$$

When it is desired to construct the assurance columns so as to give directly assurances payable at the moment of death the symbols are distinguished by a bar placed over them. Thus:

$$\bar{C}_x = v^{x+\frac{1}{2}} d_x \text{ which is an approximation to } \int_0^1 v^{x+t} \mu_{x+t} l_{x+t} dt,$$
$$\bar{M}_x = C_x + C_{x+1} + C_{x+2} + \text{etc.},$$
$$\bar{R}_x = \bar{M}_x + \bar{M}_{x+1} + \bar{M}_{x+2} + \text{etc.}$$

Joint lives

$$D_{xy} = v^{\frac{1}{2}(x+y)} l_{xy},$$
$$N_{xy} = D_{xy} + D_{x+1:y+1} + D_{x+2:y+2} + \text{etc.},$$
$$C_{xy} = v^{\frac{1}{2}(x+y)+1} d_{xy},$$
$$M_{xy} = C_{xy} + C_{x+1:y+1} + C_{x+2:y+2} + \text{etc.},$$
$$C^1_{xy} = v^{\frac{1}{2}(x+y)+1} d_x l_{y+\frac{1}{2}},$$
$$M^1_{xy} = C^1_{xy} + C^1_{x+1:y+1} + C^1_{x+2:y+2} + \text{etc.}$$

SELECTION

If the suffix to a symbol which denotes the age is enclosed in a square bracket it indicates the age at which the life was selected. To this may be added, outside the bracket, the number of years which have elapsed since selection, so that the total suffix denotes the present age. Thus:

$l_{[x]+t}$ = the number in the select life table who were selected at age x and have attained age $x+t$.

$d_{[x]+t} = l_{[x]+t} - l_{[x]+t+1}$.

$a_{[x]}$ = value of an annuity on a life now aged x and now select.

$a_{[x-n]+n}$ = value of an annuity on a life now aged x and select n years ago at age $x-n$.

$$N_{[x]} = D_{[x]} + D_{[x]+1} + D_{[x]+2} + \ldots$$
$$\ddot{a}_{[x]} = N_{[x]} \div D_{[x]} = 1 + a_{[x]},$$

and similarly for other functions.

When Dr Sprague presented his statement [in 1900] he mentioned that an objection had been raised that the notation in some cases offers the choice of two symbols for the same benefit. For instance, a temporary annuity may be denoted either by ${}_n a_x$ or by $a_{x:\overline{n}|}$. This is, he says, a necessary consequence of the principles underlying the system, and neither of the alternative forms could have been suppressed without injury to the symmetry of the system.

SECTION VIII

STATISTICAL TABLES

STATISTICAL TABLES

STANDARD NORMAL DISTRIBUTION

VALUES OF THE DENSITY FUNCTION AND OF THE DISTRIBUTION FUNCTION

$$f(x)=\frac{1}{\sqrt{2\pi}}e^{-\frac{1}{2}x^2} \qquad F(x)=\int_{-\infty}^{x} f(t)\,dt$$

x	$f(x)$	$F(x)$									
		·00	·01	·02	·03	·04	·05	·06	·07	·08	·09
·0	·398 94	·500 00	·503 99	·507 98	·511 97	·515 95	·519 94	·523 92	·527 90	·531 88	·535 86
·1	·396 95	·539 83	·543 80	·547 76	·551 72	·555 67	·559 62	·563 56	·567 49	·571 42	·575 35
·2	·391 04	·579 26	·583 17	·587 06	·590 95	·594 83	·598 71	·602 57	·606 42	·610 26	·614 09
·3	·381 39	·617 91	·621 72	·625 52	·629 30	·633 07	·636 83	·640 58	·644 31	·648 03	·651 73
·4	·368 27	·655 42	·659 10	·662 76	·666 40	·670 03	·673 64	·677 24	·680 82	·684 39	·687 93
·5	·352 07	·691 46	·694 97	·698 47	·701 94	·705 40	·708 84	·712 26	·715 66	·719 04	·722 40
·6	·333 22	·725 75	·729 07	·732 37	·735 65	·738 91	·742 15	·745 37	·748 57	·751 75	·754 90
·7	·312 25	·758 04	·761 15	·764 24	·767 30	·770 35	·773 37	·776 37	·779 35	·782 30	·785 24
·8	·289 69	·788 14	·791 03	·793 89	·796 73	·799 55	·802 34	·805 11	·807 85	·810 57	·813 27
·9	·266 09	·815 94	·818 59	·821 21	·823 81	·826 39	·828 94	·831 47	·833 98	·836 46	·838 91
1·0	·241 97	·841 34	·843 75	·846 14	·848 50	·850 83	·853 14	·855 43	·857 69	·859 93	·862 14
1·1	·217 85	·864 33	·866 50	·868 64	·870 76	·872 86	·874 93	·876 98	·879 00	·881 00	·882 98
1·2	·194 19	·884 93	·886 86	·888 77	·890 65	·892 51	·894 35	·896 17	·897 96	·899 73	·901 47
1·3	·171 37	·903 20	·904 90	·906 58	·908 24	·909 88	·911 49	·913 08	·914 66	·916 21	·917 74
1·4	·149 73	·919 24	·920 73	·922 20	·923 64	·925 07	·926 47	·927 85	·929 22	·930 56	·931 89
1·5	·129 52	·933 19	·934 48	·935 74	·936 99	·938 22	·939 43	·940 62	·941 79	·942 95	·944 08
1·6	·110 92	·945 20	·946 30	·947 38	·948 45	·949 50	·950 53	·951 54	·952 54	·953 52	·954 49
1·7	·094 05	·955 43	·956 37	·957 28	·958 18	·959 07	·959 94	·960 80	·961 64	·962 46	·963 27
1·8	·078 95	·964 07	·964 85	·965 62	·966 38	·967 12	·967 84	·968 56	·969 26	·969 95	·970 62
1·9	·065 62	·971 28	·971 93	·972 57	·973 20	·973 81	·974 41	·975 00	·975 58	·976 15	·976 70
2·0	·053 99	·977 25	·977 78	·978 31	·978 82	·979 32	·979 82	·980 30	·980 77	·981 24	·981 69
2·1	·043 98	·982 14	·982 57	·983 00	·983 41	·983 82	·984 22	·984 61	·985 00	·985 37	·985 74
2·2	·035 47	·986 10	·986 45	·986 79	·987 13	·987 45	·987 78	·988 09	·988 40	·988 70	·988 99
2·3	·028 33	·989 28	·989 56	·989 83	·990 10	·990 36	·990 61	·990 86	·991 11	·991 34	·991 58
2·4	·022 39	·991 80	·992 02	·992 24	·992 45	·992 66	·992 86	·993 05	·993 24	·993 43	·993 61
2·5	·017 53	·993 79	·993 96	·994 13	·994 30	·994 46	·994 61	·994 77	·994 92	·995 06	·995 20
2·6	·013 58	·995 34	·995 47	·995 60	·995 73	·995 85	·995 98	·996 09	·996 21	·996 32	·996 43
2·7	·010 42	·996 53	·996 64	·996 74	·996 83	·996 93	·997 02	·997 11	·997 20	·997 28	·997 36
2·8	·007 92	·997 44	·997 52	·997 60	·997 67	·997 74	·997 81	·997 88	·997 95	·998 01	·998 07
2·9	·005 95	·998 13	·998 19	·998 25	·998 31	·998 36	·998 41	·998 46	·998 51	·998 56	·998 61
3·0	·004 43	·998 65	·998 69	·998 74	·998 78	·998 82	·998 86	·998 89	·998 93	·998 96	·999 00
3·1	·003 27	·999 03	·999 06	·999 10	·999 13	·999 16	·999 18	·999 21	·999 24	·999 26	·999 29
3·2	·002 38	·999 31	·999 34	·999 36	·999 38	·999 40	·999 42	·999 44	·999 46	·999 48	·999 50
3·3	·001 72	·999 52	·999 53	·999 55	·999 57	·999 58	·999 60	·999 61	·999 62	·999 64	·999 65
3·4	·001 23	·999 66	·999 68	·999 69	·999 70	·999 71	·999 72	·999 73	·999 74	·999 75	·999 76
3·5	·000 87	·999 78	·999 78	·999 78	·999 79	·999 80	·999 81	·999 81	·999 82	·999 83	·999 83
3·6	·000 61	·999 84	·999 85	·999 85	·999 86	·999 86	·999 87	·999 87	·999 88	·999 88	·999 89
3·7	·000 42	·999 89	·999 90	·999 90	·999 90	·999 91	·999 91	·999 92	·999 92	·999 92	·999 92
3·8	·000 29	·999 93	·999 93	·999 93	·999 94	·999 94	·999 94	·999 94	·999 95	·999 95	·999 95
3·9	·000 20	·999 95	·999 95	·999 96	·999 96	·999 96	·999 96	·999 96	·999 96	·999 97	·999 97
4·0	·000 13	·999 97									
4·1	·000 09	·999 99									
4·2	·000 06	·999 99									
4·3	·000 04	·999 99									
4·4	·000 02	·999 99									
4·5	·000 02										
4·6	·000 01										
4·7	·000 01										
4·8	·000 00										

From the above table the following values may be obtained:

$F(x)$	x	$F(x)$	x
·001	−3·090	·999	3·090
·005	−2·576	·995	2·576
·010	−2·326	·990	2·326
·025	−1·960	·975	1·960
·050	−1·645	·950	1·645
·25	−0·674	·75	0·674

CRITICAL POINTS OF THE χ^2 DISTRIBUTION

The table gives the value of $\chi^2_{\alpha,n}$ for selected values of α and n, where the probability that a random variable χ^2, having the χ^2 distribution with n degrees of freedom, is not less than $\chi^2_{\alpha,n}$ is equal to α, i.e.

$$P(\chi^2 \geqslant \chi^2_{\alpha,n}) = \frac{1}{2^{\frac{1}{2}n}\,\Gamma(\frac{1}{2}n)} \int_{\chi^2_{\alpha,n}}^{\infty} e^{-\frac{1}{2}z} z^{\frac{1}{2}n-1}\,dz = \alpha$$

Degrees of freedom, n	Probability, α							
	·995	·99	·975	·95	·05	·025	·01	·005
1	$3\,927 \times 10^{-8}$	$1\,571 \times 10^{-7}$	$9\,821 \times 10^{-7}$	$3\,932 \times 10^{-6}$	3·841	5·024	6·635	7·879
2	·010 03	·020 10	·050 64	·102 6	5·991	7·378	9·210	10·60
3	·071 72	·114 8	·215 8	·351 8	7·815	9·348	11·34	12·84
4	·207 0	·297 1	·484 4	·710 7	9·488	11·14	13·28	14·86
5	·411 7	·554 3	·831 2	1·145	11·07	12·83	15·09	16·75
6	·675 7	·872 1	1·237	1·635	12·59	14·45	16·81	18·55
7	·989 3	1·239	1·690	2·167	14·07	16·01	18·48	20·28
8	1·344	1·646	2·180	2·733	15·51	17·53	20·09	21·96
9	1·735	2·088	2·700	3·325	16·92	19·02	21·67	23·59
10	2·156	2·558	3·247	3·940	18·31	20·48	23·21	25·19
11	2·603	3·053	3·816	4·575	19·68	21·92	24·73	26·76
12	3·074	3·571	4·404	5·226	21·03	23·34	26·22	28·30
13	3·565	4·107	5·009	5·892	22·36	24·74	27·69	29·82
14	4·075	4·660	5·629	6·571	23·68	26·12	29·14	31·32
15	4·601	5·229	6·262	7·261	25·00	27·49	30·58	32·80
16	5·142	5·812	6·908	7·962	26·30	28·85	32·00	34·27
17	5·697	6·408	7·564	8·672	27·59	30·19	33·41	35·72
18	6·265	7·015	8·231	9·390	28·87	31·53	34·81	37·16
19	6·844	7·633	8·907	10·12	30·14	32·85	36·19	38·58
20	7·434	8·260	9·591	10·85	31·41	34·17	37·57	40·00
21	8·034	8·897	10·28	11·59	32·67	35·48	38·93	41·40
22	8·643	9·542	10·98	12·34	33·92	36·78	40·29	42·80
23	9·260	10·20	11·69	13·09	35·17	38·08	41·64	44·18
24	9·886	10·86	12·40	13·85	36·42	39·36	42·98	45·56
25	10·52	11·52	13·12	14·61	37·65	40·65	44·31	46·93
26	11·16	12·20	13·84	15·38	38·89	41·92	45·64	48·29
27	11·81	12·88	14·57	16·15	40·11	43·19	46·96	49·64
28	12·46	13·56	15·31	16·93	41·34	44·46	48·28	50·99
29	13·12	14·26	16·05	17·71	42·56	45·72	49·59	52·34
30	13·79	14·95	16·79	18·49	43·77	46·98	50·89	53·67
40	20·71	22·16	24·43	26·51	55·76	59·34	63·69	66·77
50	27·99	29·71	32·36	34·76	67·50	71·42	76·15	79·49
60	35·53	37·48	40·48	43·19	79·08	83·30	88·38	91·95
70	43·28	45·44	48·76	51·74	90·53	95·02	100·4	104·2
80	51·17	53·54	57·15	60·39	101·9	106·6	112·3	116·3
90	59·20	61·75	65·65	69·13	113·1	118·1	124·1	128·3
100	67·33	70·06	74·22	77·93	124·3	129·6	135·8	140·2

The above is based on a more extensive table which appears in *Biometrika*, Vol. 32, pp. 188, 189. It is included by kind permission of Catherine M. Thompson and the Editor of *Biometrika*.

F DISTRIBUTION: 5 PER CENT CRITICAL POINTS

The table gives the value of F_{n_1,n_2} for selected values of n_1 and n_2, where the probability that a random variable F, having the F distribution with n_1 and n_2 degrees of freedom, is not less than F_{n_1,n_2} is equal to 0·05, i.e.

$$P(F \geq F_{n_1,n_2}) = \frac{n_1^{\frac{1}{2}n_1}\, n_2^{\frac{1}{2}n_2}\, \Gamma\frac{1}{2}(n_1+n_2)}{\Gamma\frac{1}{2}n_1\, \Gamma\frac{1}{2}n_2} \int_{F_{n_1,n_2}}^{\infty} \frac{z^{\frac{1}{2}n_1-1}}{(n_2+n_1 z)^{\frac{1}{2}(n_1+n_2)}}\, dz = 0{\cdot}05$$

Degrees of freedom, n_2, for denominator	Degrees of freedom, n_1, for numerator								
	1	2	3	4	5	6	7	8	9
1	161·4	199·5	215·7	224·6	230·2	234·0	236·8	238·9	240·5
2	18·51	19·00	19·16	19·25	19·30	19·33	19·35	19·37	19·38
3	10·13	9·552	9·277	9·117	9·013	8·941	8·887	8·845	8·812
4	7·709	6·944	6·591	6·388	6·256	6·163	6·094	6·041	5·999
5	6·608	5·786	5·409	5·192	5·050	4·950	4·876	4·818	4·772
6	5·987	5·143	4·757	4·534	4·387	4·284	4·207	4·147	4·099
7	5·591	4·737	4·347	4·120	3·971	3·866	3·787	3·726	3·677
8	5·318	4·459	4·066	3·838	3·687	3·581	3·500	3·438	3·388
9	5·117	4·256	3·863	3·633	3·482	3·374	3·293	3·230	3·179
10	4·965	4·103	3·708	3·478	3·326	3·217	3·136	3·072	3·020
11	4·844	3·982	3·587	3·357	3·204	3·095	3·012	2·948	2·896
12	4·747	3·885	3·490	3·259	3·106	2·996	2·913	2·849	2·796
13	4·667	3·806	3·410	3·179	3·025	2·915	2·832	2·767	2·714
14	4·600	3·739	3·344	3·112	2·958	2·848	2·764	2·699	2·646
15	4·543	3·682	3·287	3·056	2·901	2·790	2·707	2·641	2·588
16	4·494	3·634	3·239	3·007	2·852	2·741	2·657	2·591	2·538
17	4·451	3·592	3·197	2·965	2·810	2·699	2·614	2·548	2·494
18	4·414	3·555	3·160	2·928	2·773	2·661	2·577	2·510	2·456
19	4·381	3·522	3·127	2·895	2·740	2·628	2·543	2·477	2·423
20	4·351	3·493	3·098	2·866	2·711	2·599	2·514	2·447	2·393
21	4·325	3·467	3·072	2·840	2·685	2·573	2·488	2·420	2·366
22	4·301	3·443	3·049	2·817	2·661	2·549	2·464	2·396	2·342
23	4·279	3·422	3·028	2·795	2·640	2·528	2·442	2·375	2·320
24	4·260	3·403	3·009	2·776	2·621	2·508	2·423	2·355	2·300
25	4·242	3·385	2·991	2·759	2·603	2·490	2·405	2·337	2·282
26	4·225	3·369	2·975	2·743	2·587	2·474	2·388	2·320	2·265
27	4·210	3·354	2·960	2·728	2·572	2·459	2·373	2·305	2·250
28	4·196	3·340	2·947	2·714	2·558	2·445	2·359	2·291	2·236
29	4·183	3·328	2·934	2·701	2·545	2·432	2·346	2·278	2·223
30	4·171	3·316	2·922	2·690	2·534	2·420	2·334	2·266	2·211
40	4·085	3·232	2·839	2·606	2·450	2·336	2·249	2·180	2·124
60	4·001	3·150	2·758	2·525	2·368	2·254	2·166	2·097	2·040
120	3·920	3·072	2·680	2·447	2·290	2·175	2·087	2·016	1·959
∞	3·842	2·996	2·605	2·372	2·214	2·099	2·010	1·938	1·880

These tables of the F Distribution are based on more extensive tables which appear in *Biometrika*, Vol. 33, pp. 80, 81. They are included by kind permission of Catherine M. Thompson and Maxine Merrington, and the Editor of *Biometrika*.

F DISTRIBUTION: 5 PER CENT CRITICAL POINTS *(cont.)*

The table gives the value of F_{n_1,n_2} for selected values of n_1 and n_2, where the probability that a random variable F, having the F distribution with n_1 and n_2 degrees of freedom, is not less than F_{n_1,n_2} is equal to 0·05, i.e.

$$P(F \geqslant F_{n_1,n_2}) = \frac{n_1^{\frac{1}{2}n_1}\, n_2^{\frac{1}{2}n_2}\, \Gamma\frac{1}{2}(n_1+n_2)}{\Gamma\frac{1}{2}n_1\, \Gamma\frac{1}{2}n_2} \int_{F_{n_1,n_2}}^{\infty} \frac{z^{\frac{1}{2}n_1-1}}{(n_2+n_1 z)^{\frac{1}{2}(n_1+n_2)}}\, dz = 0{\cdot}05$$

Degrees of freedom, n_2, for denominator	Degrees of freedom, n_1, for numerator									
	10	12	15	20	24	30	40	60	120	∞
1	241·9	243·9	245·9	248·0	249·0	250·1	251·1	252·2	253·2	254·3
2	19·40	19·41	19·43	19·45	19·45	19·46	19·47	19·48	19·49	19·50
3	8·785	8·745	8·703	8·660	8·638	8·617	8·594	8·572	8·549	8·526
4	5·964	5·912	5·858	5·802	5·774	5·746	5·717	5·688	5·658	5·628
5	4·735	4·678	4·619	4·558	4·527	4·496	4·464	4·431	4·398	4·365
6	4·060	4·000	3·938	3·874	3·841	3·808	3·774	3·740	3·705	3·669
7	3·636	3·575	3·511	3·444	3·410	3·376	3·340	3·304	3·267	3·230
8	3·347	3·284	3·218	3·150	3·115	3·079	3·043	3·005	2·967	2·928
9	3·137	3·073	3·006	2·936	2·900	2·864	2·826	2·787	2·747	2·707
10	2·978	2·913	2·845	2·774	2·737	2·700	2·661	2·621	2·580	2·538
11	2·854	2·788	2·719	2·646	2·609	2·570	2·531	2·490	2·448	2·404
12	2·753	2·687	2·617	2·544	2·505	2·466	2·426	2·384	2·341	2·296
13	2·671	2·604	2·533	2·459	2·420	2·380	2·339	2·297	2·252	2·206
14	2·602	2·534	2·463	2·388	2·349	2·308	2·266	2·223	2·178	2·131
15	2·544	2·475	2·403	2·327	2·288	2·247	2·204	2·160	2·114	2·066
16	2·493	2·425	2·352	2·276	2·235	2·194	2·151	2·106	2·059	2·010
17	2·450	2·381	2·308	2·230	2·190	2·148	2·104	2·058	2·011	1·960
18	2·412	2·342	2·269	2·191	2·150	2·107	2·063	2·017	1·968	1·917
19	2·378	2·308	2·234	2·155	2·114	2·071	2·026	1·980	1·930	1·878
20	2·348	2·278	2·203	2·124	2·082	2·039	1·994	1·946	1·896	1·843
21	2·321	2·250	2·176	2·096	2·054	2·010	1·964	1·916	1·860	1·812
22	2·297	2·226	2·151	2·071	2·028	1·984	1·938	1·889	1·838	1·783
23	2·275	2·204	2·128	2·048	2·005	1·960	1·914	1·865	1·813	1·757
24	2·255	2·183	2·108	2·027	1·984	1·939	1·892	1·842	1·790	1·733
25	2·236	2·165	2·089	2·007	1·964	1·919	1·872	1·822	1·768	1·711
26	2·220	2·148	2·072	1·990	1·946	1·901	1·853	1·803	1·749	1·691
27	2·204	2·132	2·056	1·974	1·930	1·884	1·836	1·785	1·731	1·672
28	2·190	2·118	2·041	1·959	1·915	1·869	1·820	1·769	1·714	1·654
29	2·177	2·104	2·027	1·945	1·900	1·854	1·805	1·754	1·698	1·638
30	2·165	2·092	2·015	1·932	1·887	1·841	1·792	1·740	1·683	1·622
40	2·077	2·003	1·924	1·839	1·793	1·744	1·693	1·637	1·577	1·509
60	1·993	1·917	1·836	1·748	1·700	1·649	1·594	1·534	1·467	1·389
120	1·910	1·834	1·750	1·659	1·608	1·554	1·495	1·429	1·352	1·254
∞	1·831	1·752	1·666	1·570	1·517	1·459	1·394	1·318	1·221	1·000

F DISTRIBUTION: 1 PER CENT CRITICAL POINTS

The table gives the value of F_{n_1,n_2} for selected values of n_1 and n_2, where the probability that a random variable F, having the F distribution with n_1 and n_2 degrees of freedom, is not less than F_{n_1,n_2} is equal to 0·01, i.e.

$$P(F \geqslant F_{n_1,n_2}) = \frac{n_1^{\frac{1}{2}n_1}\, n_2^{\frac{1}{2}n_2}\, \Gamma\frac{1}{2}(n_1+n_2)}{\Gamma\frac{1}{2}n_1\, \Gamma\frac{1}{2}n_2} \int_{F_{n_1,n_2}}^{\infty} \frac{z^{\frac{1}{2}n_1 - 1}}{(n_2 + n_1 z)^{\frac{1}{2}(n_1+n_2)}}\, dz = 0{\cdot}01$$

Degrees of freedom, n_2, for denominator	Degrees of freedom, n_1, for numerator								
	1	2	3	4	5	6	7	8	9
1	4 052	4 999	5 403	5 625	5 764	5 859	5 928	5 982	6 023
2	98·50	99·00	99·17	99·25	99·30	99·33	99·36	99·37	99·39
3	34·12	30·82	29·46	28·71	28·24	27·91	27·67	27·49	27·35
4	21·20	18·00	16·69	15·98	15·52	15·21	14·98	14·80	14·66
5	16·26	13·27	12·06	11·39	10·97	10·67	10·46	10·29	10·16
6	13·74	10·92	9·779	9·148	8·746	8·466	8·260	8·102	7·976
7	12·25	9·547	8·451	7·847	7·460	7·191	6·993	6·840	6·719
8	11·26	8·649	7·591	7·006	6·632	6·371	6·178	6·029	5·912
9	10·56	8·021	6·992	6·422	6·057	5·802	5·613	5·467	5·351
10	10·04	7·559	6·552	5·994	5·636	5·386	5·200	5·057	4·942
11	9·646	7·206	6·217	5·668	5·316	5·069	4·886	4·745	4·632
12	9·330	6·927	5·953	5·412	5·064	4·821	4·639	4·499	4·388
13	9·074	6·701	5·739	5·205	4·862	4·620	4·441	4·302	4·191
14	8·862	6·515	5·564	5·035	4·695	4·456	4·278	4·140	4·030
15	8·683	6·359	5·417	4·893	4·556	4·318	4·141	4·005	3·895
16	8·531	6·226	5·292	4·773	4·437	4·202	4·026	3·890	3·780
17	8·400	6·112	5·185	4·669	4·336	4·101	3·927	3·791	3·682
18	8·285	6·013	5·092	4·579	4·248	4·015	3·841	3·705	3·597
19	8·185	5·926	5·010	4·500	4·171	3·939	3·765	3·631	3·523
20	8·096	5·849	4·938	4·431	4·103	3·871	3·699	3·564	3·457
21	8·017	5·780	4·874	4·369	4·042	3·812	3·640	3·506	3·398
22	7·945	5·719	4·817	4·313	3·988	3·758	3·587	3·453	3·346
23	7·881	5·664	4·765	4·263	3·939	3·710	3·539	3·406	3·299
24	7·823	5·614	4·718	4·218	3·895	3·667	3·496	3·363	3·256
25	7·770	5·568	4·675	4·177	3·855	3·627	3·457	3·324	3·217
26	7·721	5·526	4·637	4·140	3·818	3·591	3·421	3·288	3·182
27	7·677	5·488	4·601	4·106	3·785	3·558	3·388	3·256	3·149
28	7·636	5·453	4·568	4·074	3·754	3·528	3·358	3·226	3·119
29	7·598	5·420	4·538	4·045	3·725	3·499	3·330	3·198	3·092
30	7·562	5·390	4·510	4·018	3·699	3·473	3·304	3·173	3·067
40	7·314	5·178	4·313	3·828	3·514	3·291	3·124	2·993	2·888
60	7·077	4·977	4·126	3·649	3·339	3·119	2·953	2·823	2·718
120	6·851	4·786	3·949	3·480	3·173	2·956	2·792	2·663	2·559
∞	6·635	4·605	3·782	3·319	3·017	2·802	2·639	2·511	2·407

These tables of the F Distribution are based on more extensive tables which appear in *Biometrika*, Vol. 33, pp. 84, 85. They are included by kind permission of Catherine M. Thompson and Maxine Merrington, and the Editor of *Biometrika*.

F DISTRIBUTION: 1 PER CENT CRITICAL POINTS *(cont.)*

The table gives the value of F_{n_1,n_2} for the selected values of n_1 and n_2, where the probability that a random variable F, having the F distribution with n_1 and n_2 degrees of freedom, is not less than F_{n_1,n_2} is equal to 0·01, i.e.

$$P(F \geqslant F_{n_1,n_2}) = \frac{n_1^{\frac{1}{2}n_1}\, n_2^{\frac{1}{2}n_2}\, \Gamma\frac{1}{2}(n_1+n_2)}{\Gamma\frac{1}{2}n_1\, \Gamma\frac{1}{2}n_2} \int_{F_{n_1,n_2}}^{\infty} \frac{z^{\frac{1}{2}n_1-1}}{(n_2+n_1 z)^{\frac{1}{2}(n_1+n_2)}}\, dz = 0{\cdot}01$$

Degrees of freedom, n_2, for denominator	Degrees of freedom, n_1, for numerator									
	10	12	15	20	24	30	40	60	120	∞
1	6 056	6 106	6 157	6 209	6 235	6 261	6 287	6 313	6 339	6 366
2	99·40	99·42	99·43	99·45	99·46	99·47	99·47	99·48	99·49	99·50
3	27·23	27·05	26·87	26·69	26·60	26·51	26·41	26·32	26·22	26·13
4	14·55	14·37	14·20	14·02	13·93	13·84	13·74	13·65	13·56	13·46
5	10·05	9·888	9·722	9·553	9·466	9·379	9·291	9·202	9·112	9·020
6	7·874	7·718	7·559	7·396	7·313	7·228	7·143	7·057	6·969	6·880
7	6·620	6·469	6·314	6·155	6·074	5·992	5·908	5·824	5·737	5·649
8	5·814	5·667	5·515	5·359	5·279	5·198	5·116	5·032	4·946	4·859
9	5·257	5·111	4·962	4·808	4·729	4·649	4·567	4·483	4·398	4·311
10	4·849	4·706	4·558	4·405	4·327	4·247	4·165	4·082	3·997	3·909
11	4·539	4·397	4·251	4·099	4·021	3·941	3·860	3·776	3·690	3·602
12	4·296	4·155	4·010	3·858	3·780	3·701	3·619	3·535	3·449	3·361
13	4·100	3·960	3·815	3·665	3·587	3·507	3·425	3·341	3·255	3·165
14	3·939	3·800	3·656	3·505	3·427	3·348	3·266	3·181	3·094	3·004
15	3·805	3·666	3·522	3·372	3·294	3·214	3·132	3·047	2·959	2·868
16	3·691	3·553	3·409	3·259	3·181	3·101	3·018	2·933	2·845	2·753
17	3·593	3·455	3·312	3·162	3·084	3·003	2·921	2·835	2·746	2·653
18	3·508	3·371	3·227	3·077	2·999	2·919	2·835	2·749	2·660	2·566
19	3·434	3·297	3·153	3·003	2·925	2·844	2·761	2·674	2·584	2·489
20	3·368	3·231	3·088	2·938	2·859	2·778	2·695	2·608	2·517	2·421
21	3·310	3·173	3·030	2·880	2·801	2·720	2·636	2·548	2·457	2·360
22	3·258	3·121	2·978	2·827	2·749	2·668	2·583	2·495	2·403	2·306
23	3·211	3·074	2·931	2·781	2·702	2·620	2·535	2·447	2·354	2·256
24	3·168	3·032	2·889	2·738	2·659	2·577	2·492	2·404	2·310	2·211
25	3·129	2·993	2·850	2·699	2·620	2·538	2·453	2·364	2·270	2·169
26	3·094	2·958	2·815	2·664	2·585	2·503	2·417	2·327	2·232	2·131
27	3·062	2·926	2·783	2·632	2·552	2·470	2·384	2·294	2·198	2·097
28	3·032	2·896	2·753	2·602	2·522	2·440	2·354	2·263	2·167	2·064
29	3·004	2·868	2·726	2·574	2·495	2·412	2·325	2·234	2·138	2·034
30	2·979	2·843	2·700	2·549	2·469	2·386	2·299	2·208	2·111	2·006
40	2·801	2·665	2·522	2·369	2·288	2·203	2·114	2·019	1·917	1·805
60	2·632	2·496	2·352	2·198	2·115	2·029	1·936	1·836	1·726	1·601
120	2·472	2·336	2·192	2·035	1·950	1·860	1·763	1·656	1·533	1·380
∞	2·321	2·185	2·038	1·878	1·791	1·696	1·592	1·473	1·325	1·000

CRITICAL POINTS OF STUDENT'S t DISTRIBUTION

The table gives the value of $t_{\alpha,n}$ for selected values of α and n, where the probability that a random variable t, having the t distribution with n degrees of freedom, is not less than $t_{\alpha,n}$ is equal to α, i.e.

$$P(t \geqslant t_{\alpha,n}) = \frac{\Gamma\frac{1}{2}(n+1)}{(\pi n)^{\frac{1}{2}}\,\Gamma(\frac{1}{2}n)} \int_{t_{\alpha,n}}^{\infty} \left(1+\frac{z^2}{n}\right)^{-\frac{1}{2}(n+1)} dz = \alpha$$

Degrees of freedom n	Probability, α					
	·25	·1	·05	·025	·01	·005
1	1·000	3·078	6·314	12·706	31·821	63·657
2	·816	1·886	2·920	4·303	6·965	9·925
3	·765	1·638	2·353	3·182	4·541	5·841
4	·741	1·533	2·132	2·776	3·747	4·604
5	·727	1·476	2·015	2·571	3·365	4·032
6	·718	1·440	1·943	2·447	3·143	3·707
7	·711	1·415	1·895	2·365	2·998	3·499
8	·706	1·397	1·860	2·306	2·896	3·355
9	·703	1·383	1·833	2·262	2·821	3·250
10	·700	1·372	1·812	2·228	2·764	3·169
11	·697	1·363	1·796	2·201	2·718	3·106
12	·695	1·356	1·782	2·179	2·681	3·055
13	·694	1·350	1·771	2·160	2·650	3·012
14	·692	1·345	1·761	2·145	2·624	2·977
15	·691	1·341	1·753	2·131	2·602	2·947
16	·690	1·337	1·746	2·120	2·583	2·921
17	·689	1·333	1·740	2·110	2·567	2·898
18	·688	1·330	1·734	2·101	2·552	2·878
19	·688	1·328	1·729	2·093	2·539	2·861
20	·687	1·325	1·725	2·086	2·528	2·845
21	·686	1·323	1·721	2·080	2·518	2·831
22	·686	1·321	1·717	2·074	2·508	2·819
23	·685	1·319	1·714	2·069	2·500	2·807
24	·685	1·318	1·711	2·064	2·492	2·797
25	·684	1·316	1·708	2·060	2·485	2·787
26	·684	1·315	1·706	2·056	2·479	2·779
27	·684	1·314	1·703	2·052	2·473	2·771
28	·683	1·313	1·701	2·048	2·467	2·763
29	·683	1·311	1·699	2·045	2·462	2·756
30	·683	1·310	1·697	2·042	2·457	2·750
40	·681	1·303	1·684	2·021	2·423	2·704
60	·679	1·296	1·671	2·000	2·390	2·660
120	·677	1·289	1·658	1·980	2·358	2·617
∞	·674	1·282	1·645	1·960	2·326	2·576

The probability of a deviation *numerically* greater than $t_{\alpha,n}$ is twice the probability shown at the head of the column.

The above table is abridged from the table on p. 26 of Fisher and Yates, *Statistical Tables for Biological, Agricultural and Medical Research* (Oliver and Boyd Ltd., Edinburgh) by permission of the authors and publishers.

CUMULATIVE POISSON DISTRIBUTION

Probability that a random variable N, having the Poisson distribution with parameter m does not exceed n, i.e.

$$P(N \leqslant n) = \sum_{t=0}^{n} \frac{e^{-m} m^t}{t!}$$

	m																
n	0·1	0·2	0·4	0·6	0·8	1·0	1·2	1·4	1·6	1·8	2·0	2·2	2·4	2·6	2·8	3·0	n
0	·904 84	·818 73	·670 32	·548 81	·449 33	·367 88	·301 19	·246 60	·201 90	·165 30	·135 34	·110 80	·090 72	·074 27	·060 81	·049 79	0
1	·995 32	·982 48	·938 45	·878 10	·808 79	·735 76	·662 63	·591 83	·524 93	·462 84	·406 01	·354 57	·308 44	·267 39	·231 08	·199 15	1
2	·999 85	·998 85	·992 07	·976 88	·952 58	·919 70	·879 49	·833 50	·783 36	·730 62	·676 68	·622 71	·569 71	·518 43	·469 45	·423 19	2
3		·999 94	·999 22	·996 64	·990 92	·981 01	·966 23	·946 28	·921 19	·891 29	·857 12	·819 35	·778 72	·736 00	·691 94	·647 23	3
4			·999 94	·999 61	·998 59	·996 34	·992 25	·985 75	·976 32	·963 59	·947 35	·927 50	·904 13	·877 42	·847 68	·815 26	4
5				·999 96	·999 82	·999 41	·998 50	·996 80	·993 96	·989 62	·983 44	·975 09	·964 33	·950 96	·934 89	·916 08	5
6					·999 98	·999 92	·999 75	·999 38	·998 66	·997 43	·995 47	·992 54	·988 41	·982 83	·975 59	·966 49	6
7						·999 99	·999 96	·999 89	·999 74	·999 44	·998 90	·998 02	·996 66	·994 67	·991 87	·988 10	7
8								·999 98	·999 95	·999 89	·999 76	·999 53	·999 14	·998 51	·997 57	·996 20	8
9									·999 99	·999 98	·999 95	·999 90	·999 80	·999 62	·999 34	·998 90	9
10											·999 99	·999 98	·999 96	·999 91	·999 84	·999 71	10

CUMULATIVE POISSON DISTRIBUTION *(cont.)*

Probability that a random variable N, having the Poisson distribution with parameter m does not exceed n, i.e.

$$P(N \leqslant n) = \sum_{t=0}^{n} \frac{e^{-m} m^t}{t!}$$

	m																
n	3·2	3·4	3·6	3·8	4·0	4·2	4·4	4·6	4·8	5·0	5·2	5·4	5·6	5·8	6·0	6·2	n
0	·040 76	·033 37	·027 32	·022 37	·018 32	·015 00	·012 28	·010 05	·008 23	·006 74	·005 52	·004 52	·003 70	·003 03	·002 48	·002 03	0
1	·171 20	·146 84	·125 69	·107 38	·091 58	·077 98	·066 30	·056 29	·047 73	·040 43	·034 20	·028 91	·024 41	·020 59	·017 35	·014 61	1
2	·379 90	·339 74	·302 75	·268 90	·238 10	·210 24	·185 14	·162 64	·142 54	·124 65	·108 79	·094 76	·082 39	·071 51	·061 97	·053 62	2
3	·602 52	·558 36	·515 22	·473 49	·433 47	·395 40	·359 45	·325 71	·294 23	·265 03	·238 07	·213 29	·190 62	·169 96	·151 20	·134 23	3
4	·780 61	·744 18	·706 44	·667 84	·628 84	·589 83	·551 18	·513 23	·476 26	·440 49	·406 13	·373 31	·342 15	·312 72	·285 06	·259 18	4
5	·894 59	·870 54	·844 12	·815 56	·785 13	·753 14	·719 91	·685 76	·651 01	·615 96	·580 91	·546 13	·511 86	·478 31	·445 68	·414 11	5
6	·955 38	·942 15	·926 73	·909 11	·889 33	·867 46	·843 65	·818 03	·790 81	·762 18	·732 39	·701 67	·670 26	·638 39	·606 30	·574 21	6
7	·983 17	·976 93	·969 21	·959 89	·948 87	·936 06	·921 42	·904 95	·886 67	·866 63	·844 92	·821 66	·796 98	·771 02	·743 98	·716 02	7
8	·994 29	·991 71	·988 33	·984 02	·978 64	·972 07	·964 20	·954 93	·944 18	·931 91	·918 06	·902 65	·885 68	·867 18	·847 24	·825 91	8
9	·998 24	·997 29	·995 98	·994 20	·991 87	·988 87	·985 11	·980 47	·974 86	·968 17	·960 33	·951 24	·940 87	·929 16	·916 08	·901 62	9
10	·999 50	·999 19	·998 73	·998 07	·997 16	·995 93	·994 31	·992 22	·989 58	·986 30	·982 30	·977 49	·971 78	·965 10	·957 38	·948 56	10
11	·999 87	·999 78	·999 63	·999 41	·999 08	·998 63	·997 99	·997 14	·996 01	·994 55	·992 69	·990 37	·987 51	·984 05	·979 91	·975 01	11
12	·999 97	·999 94	·999 90	·999 83	·999 73	·999 57	·999 34	·999 02	·998 58	·997 98	·997 19	·996 16	·994 86	·993 21	·991 17	·988 68	12
13	·999 99	·999 99	·999 98	·999 96	·999 92	·999 87	·999 80	·999 69	·999 53	·999 30	·998 99	·998 57	·998 02	·997 30	·996 37	·995 20	13
14			·999 99	·999 99	·999 98	·999 97	·999 94	·999 91	·999 85	·999 77	·999 66	·999 50	·999 28	·998 99	·998 60	·998 09	14
15						·999 99	·999 98	·999 97	·999 96	·999 93	·999 89	·999 84	·999 76	·999 64	·999 49	·999 28	15

CUMULATIVE POISSON DISTRIBUTION *(cont.)*

Probability that a random variable N, having the Poisson distribution with parameter m does not exceed n, i.e.

$$P(N \leqslant n) = \sum_{t=0}^{n} \frac{e^{-m} m^t}{t!}$$

	m														
n	6·4	6·6	6·8	7·0	7·5	8·0	8·5	9·0	9·5	10·0	10·5	11·0	11·5	12·0	n
0	·001 66	·001 36	·001 11	·000 91	·000 55	·000 34	·000 20	·000 12	·000 08	·000 05	·000 03	·000 02	·000 01	·000 01	0
1	·012 30	·010 34	·008 69	·007 30	·004 70	·003 02	·001 93	·001 23	·000 79	·000 50	·000 32	·000 20	·000 13	·000 08	1
2	·046 32	·039 97	·034 44	·029 64	·020 26	·013 75	·009 28	·006 23	·004 16	·002 77	·001 84	·001 21	·000 80	·000 52	2
3	·118 92	·105 15	·092 81	·081 77	·059 15	·042 38	·030 11	·021 23	·014 86	·010 34	·007 15	·004 92	·003 36	·002 29	3
4	·235 07	·212 70	·192 03	·172 99	·132 06	·099 63	·074 36	·054 96	·040 26	·029 25	·021 09	·015 11	·010 75	·007 60	4
5	·383 74	·354 67	·326 98	·300 71	·241 44	·191 24	·149 60	·115 69	·088 53	·067 09	·050 38	·037 52	·027 73	·020 34	5
6	·542 33	·510 84	·479 92	·449 71	·378 15	·313 37	·256 18	·206 78	·164 95	·130 14	·101 63	·078 61	·060 27	·045 82	6
7	·687 32	·658 08	·628 49	·598 71	·524 64	·452 96	·385 60	·323 90	·268 66	·220 22	·178 51	·143 19	·113 74	·089 50	7
8	·803 32	·779 56	·754 77	·729 09	·661 97	·592 55	·523 11	·455 65	·391 82	·332 82	·279 41	·231 99	·190 59	·155 03	8
9	·885 80	·868 64	·850 18	·830 50	·776 41	·716 62	·652 97	·587 41	·521 83	·457 93	·397 13	·340 51	·288 80	·242 39	9
10	·938 59	·927 43	·915 07	·901 48	·862 24	·815 89	·763 36	·705 99	·645 33	·583 04	·520 74	·459 89	·401 73	·347 23	10
11	·969 30	·962 71	·955 18	·946 65	·920 76	·888 08	·848 66	·803 01	·751 99	·696 78	·638 73	·579 27	·519 80	·461 60	11
12	·985 68	·982 11	·977 90	·973 00	·957 33	·936 20	·909 08	·875 77	·836 43	·791 56	·741 96	·688 70	·632 95	·575 97	12
13	·993 75	·991 96	·989 79	·987 19	·978 44	·965 82	·948 59	·926 15	·898 14	·864 46	·825 35	·781 29	·733 04	·681 54	13
14	·997 44	·996 60	·995 57	·994 28	·989 74	·982 74	·972 58	·958 53	·940 01	·916 54	·887 89	·854 04	·815 26	·772 03	14
15	·999 01	·998 65	·998 18	·997 59	·995 39	·991 77	·986 17	·977 96	·966 53	·951 26	·931 67	·907 40	·878 30	·844 42	15
16				·999 04	·998 04	·996 28	·993 39	·988 89	·982 27	·972 96	·960 39	·944 08	·923 60	·898 71	16
17				·999 64	·999 21	·998 41	·997 00	·994 68	·991 07	·985 72	·978 14	·967 81	·954 25	·937 03	17
18				·999 87	·999 70	·999 35	·998 70	·997 57	·995 72	·992 81	·988 49	·982 31	·973 83	·962 58	18
19				·999 96	·999 89	·999 75	·999 47	·998 94	·998 04	·996 55	·994 21	·990 71	·985 68	·978 72	19
20				·999 99	·999 96	·999 91	·999 79	·999 56	·999 14	·998 41	·997 21	·995 33	·992 50	·988 40	20

CUMULATIVE POISSON DISTRIBUTION *(cont.)*

Probability that a random variable N, having the Poisson distribution with parameter m does not exceed n, i.e.

$$P(N \leqslant n) = \sum_{t=0}^{n} \frac{e^{-m} m^t}{t!}$$

	m																
n	12·5	13·0	13·5	14·0	14·5	15·0	16·0	17·0	18·0	19·0	20·0	21·0	22·0	23·0	24·0	25·0	n
0	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	0
1	·000 05	·000 03	·000 02	·000 01	·000 01	·000 01	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	⋮
2	·000 34	·000 22	·000 15	·000 09	·000 06	·000 04	·000 02	·000 01	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	2
3	·001 55	·001 05	·000 71	·000 47	·000 32	·000 21	·000 09	·000 04	·000 02	·000 01	·000 00	·000 00	·000 00	·000 00	·000 00	·000 00	3
4	·005 35	·003 74	·002 60	·001 81	·001 25	·000 86	·000 40	·000 19	·000 08	·000 04	·000 02	·000 01	·000 00	·000 00	·000 00	·000 00	4
5	·014 82	·010 73	·007 73	·005 53	·003 94	·002 79	·001 38	·000 68	·000 32	·000 15	·000 07	·000 03	·000 02	·000 01	·000 00	·000 00	5
6	·034 57	·025 89	·019 25	·014 23	·010 45	·007 63	·004 01	·002 06	·001 04	·000 52	·000 26	·000 12	·000 06	·000 03	·000 01	·000 01	6
7	·069 82	·054 03	·041 48	·031 62	·023 94	·018 00	·010 00	·005 43	·002 89	·001 51	·000 78	·000 40	·000 20	·000 10	·000 05	·000 02	7
8	·124 92	·099 76	·079 00	·062 06	·048 38	·037 45	·021 99	·012 60	·007 06	·003 87	·002 09	·001 11	·000 58	·000 30	·000 15	·000 08	8
9	·201 43	·165 81	·135 26	·109 40	·087 76	·069 85	·043 30	·026 13	·015 38	·008 86	·005 00	·002 77	·001 51	·000 81	·000 43	·000 22	9
10	·297 07	·251 68	·211 23	·175 68	·144 86	·118 46	·077 40	·049 12	·030 37	·018 32	·010 81	·006 25	·003 55	·001 98	·001 09	·000 59	10
11	·405 76	·353 17	·304 45	·260 04	·220 13	·184 75	·126 99	·084 67	·054 89	·034 67	·021 39	·012 91	·007 63	·004 43	·002 52	·001 42	11
12	·518 98	·463 11	·409 33	·358 46	·311 08	·267 61	·193 12	·135 02	·091 67	·060 56	·039 01	·024 55	·015 12	·009 12	·005 40	·003 14	12
13	·627 84	·573 05	·518 25	·464 45	·412 53	·363 22	·274 51	·200 87	·142 60	·098 40	·066 13	·043 36	·027 79	·017 43	·010 72	·006 47	13
14	·725 03	·675 13	·623 27	·570 44	·517 60	·465 65	·367 53	·280 83	·208 08	·149 75	·104 86	·071 57	·047 69	·031 07	·019 83	·012 40	14
15	·806 03	·763 61	·717 79	·669 36	·619 16	·568 09	·466 75	·371 45	·286 65	·214 79	·156 51	·111 08	·076 89	·052 00	·034 40	·022 29	15
16	·869 31	·835 49	·797 55	·755 92	·711 21	·664 12	·565 96	·467 74	·375 05	·292 03	·221 07	·162 92	·117 04	·082 08	·056 27	·037 75	16
17	·915 84	·890 47	·860 88	·827 20	·789 72	·748 86	·659 34	·564 02	·468 65	·378 36	·297 03	·226 96	·169 00	·122 77	·087 13	·060 48	17
18	·948 15	·930 17	·908 38	·882 64	·852 96	·819 47	·742 35	·654 96	·562 25	·469 48	·381 42	·301 68	·232 50	·174 77	·128 28	·092 04	18
19	·969 41	·957 33	·942 13	·923 50	·901 22	·875 22	·812 25	·736 32	·650 92	·560 61	·470 26	·384 26	·306 03	·237 71	·180 26	·133 58	19
20	·982 69	·974 99	·964 91	·952 09	·936 22	·917 03	·868 17	·805 48	·730 72	·647 17	·559 09	·470 97	·386 91	·310 10	·242 64	·185 49	20
21	·990 60	·985 92	·979 55	·971 16	·960 38	·946 89	·910 77	·861 47	·799 12	·725 50	·643 70	·557 69	·471 64	·389 38	·313 93	·247 30	21
22	·995 09	·992 38	·988 54	·983 29	·976 30	·967 26	·941 76	·904 73	·855 09	·793 14	·720 61	·640 46	·556 37	·472 27	·391 70	·317 53	22
23	·997 54	·996 03	·993 82	·990 67	·986 34	·980 54	·963 31	·936 70	·898 89	·849 02	·787 49	·716 03	·637 42	·555 15	·472 85	·393 88	23
24	·998 81	·998 01	·996 78	·994 98	·992 41	·988 84	·977 69	·959 35	·931 74	·893 25	·843 23	·782 16	·711 72	·634 58	·554 00	·473 40	24
25	·999 44	·999 03	·998 39	·997 39	·995 92	·993 82	·986 88	·974 76	·955 39	·926 87	·887 82	·837 70	·777 10	·707 66	·631 91	·552 92	25

STATISTICAL TABLES

VALUES OF THE NEGATIVE EXPONENTIAL

x	e^{-x}	x	e^{-x}	x	e^{-x}
·00	1·000 00				
·01	·990 05	·52	·594 52	2·20	·110 80
·02	·980 20	·54	·582 75	2·30	·100 26
·03	·970 45	·56	·571 21	2·40	·090 72
·04	·960 79	·58	·559 90	2·50	·082 08
·05	·951 23	·60	·548 81	2·60	·074 27
·06	·941 76	·62	·537 94	2·70	·067 21
·07	·932 39	·64	·527 29	2·80	·060 81
·08	·923 12	·66	·516 85	2·90	·055 02
·09	·913 93	·68	·506 62	3·00	·049 79
·10	·904 84	·70	·496 59	3·10	·045 05
·11	·895 83	·72	·486 75	3·20	·040 76
·12	·886 92	·74	·477 11	3·30	·036 88
·13	·878 10	·76	·467 67	3·40	·033 37
·14	·869 36	·78	·458 41	3·50	·030 20
·15	·860 71	·80	·449 33	3·60	·027 32
·16	·852 14	·82	·440 43	3·70	·024 72
·17	·843 66	·84	·431 71	3·80	·022 37
·18	·835 27	·86	·423 16	3·90	·020 24
·19	·826 96	·88	·414 78	4·00	·018 32
·20	·818 73	·90	·406 57	4·10	·016 57
·21	·810 58	·92	·398 52	4·20	·015 00
·22	·802 52	·94	·390 63	4·30	·013 57
·23	·794 53	·96	·382 89	4·40	·012 28
·24	·786 63	·98	·375 31	4·50	·011 11
·25	·778 80	1·00	·367 88	4·60	·010 05
·26	·771 05	1·02	·360 59	4·70	·009 10
·27	·763 38	1·04	·353 45	4·80	·008 23
·28	·755 78	1·06	·346 46	4·90	·007 45
·29	·748 26	1·08	·339 60	5·00	·006 74
·30	·740 82	1·10	·332 87	5·10	·006 10
·31	·733 45	1·15	·316 64	5·20	·005 52
·32	·726 15	1·20	·301 19	5·30	·004 99
·33	·718 92	1·25	·286 50	5·40	·004 52
·34	·711 77	1·30	·272 53	5·50	·004 09
·35	·704 69	1·35	·259 24	5·60	·003 70
·36	·697 68	1·40	·246 60	5·70	·003 35
·37	·690 73	1·45	·234 57	5·80	·003 03
·38	·683 86	1·50	·223 13	5·90	·002 74
·39	·677 06	1·55	·212 25	6·00	·002 48
·40	·670 32	1·60	·201 90		
·41	·663 65	1·65	·192 05		
·42	·657 05	1·70	·182 68		
·43	·650 51	1·75	·173 77		
·44	·644 04	1·80	·165 30		
·45	·637 63	1·85	·157 24		
·46	·631 28	1·90	·149 57		
·47	·625 00	1·95	·142 27		
·48	·618 78	2·00	·135 34		
·49	·612 63	2·05	·128 73		
·50	·606 53	2·10	·122 46		

RANDOM NUMBERS

88 56 53 27 59	33 35 72 67 47	77 34 55 45 70	08 18 27 38 90	16 95 86 70 75
09 72 95 84 29	49 41 31 06 70	42 38 06 45 18	64 84 73 31 65	52 53 37 97 15
12 96 88 17 31	65 19 69 02 83	60 75 86 90 68	24 64 19 35 51	56 61 87 39 12
85 94 57 24 16	92 09 84 38 76	22 00 27 69 85	29 81 94 78 70	21 94 47 90 12
38 64 43 59 98	98 77 87 68 07	91 51 67 62 44	40 98 05 93 78	23 32 65 41 18
53 44 09 42 72	00 41 86 79 79	68 47 22 00 20	35 55 31 51 51	00 83 63 22 55
40 76 66 26 84	57 99 99 90 37	36 63 32 08 58	37 40 13 68 97	87 64 81 07 83
02 17 79 18 05	12 59 52 57 02	22 07 90 47 03	28 14 11 30 79	20 69 22 40 98
95 17 82 06 53	31 51 10 96 46	92 06 88 07 77	56 11 50 81 69	40 23 72 51 39
35 76 22 42 92	96 11 83 44 80	34 68 35 48 77	33 42 40 90 60	73 96 53 97 86
26 29 13 56 41	85 47 04 66 08	34 72 57 59 13	82 43 80 46 15	38 26 61 70 04
77 80 20 75 82	72 82 32 99 90	63 95 73 76 63	89 73 44 99 05	48 67 26 43 18
46 40 66 44 52	91 36 74 43 53	30 82 13 54 00	78 45 63 98 35	55 03 36 67 68
37 56 08 18 09	77 53 84 46 47	31 91 18 95 58	24 16 74 11 53	44 10 13 85 57
61 65 61 68 66	37 27 47 39 19	84 83 70 07 48	53 21 40 06 71	95 06 79 88 54
08 03 27 07 52	89 29 36 28 45	45 32 52 27 07	14 52 66 76 24	00 69 42 06 78
61 88 13 19 86	77 91 32 91 28	13 30 10 15 41	52 68 68 76 04	14 24 62 02 22
72 28 45 57 74	16 11 41 91 80	87 22 92 18 38	35 85 06 21 08	42 04 55 79 63
05 43 13 36 84	66 69 57 36 36	87 61 54 42 75	16 23 63 55 43	99 85 93 21 41
00 23 21 62 18	94 35 74 81 54	59 89 95 85 71	48 78 21 79 51	41 49 84 42 99
33 13 41 17 60	92 67 14 39 91	43 05 73 24 30	10 05 43 80 23	89 84 62 59 65
33 35 64 95 49	33 26 49 18 44	58 79 86 29 91	87 26 72 60 18	00 15 01 83 67
56 65 45 00 68	46 71 61 25 45	88 97 84 58 40	01 02 12 86 19	62 39 38 28 66
08 76 62 65 11	45 41 05 16 60	51 49 90 33 33	37 99 46 43 77	91 86 40 02 66
60 42 97 49 08	31 35 56 37 43	07 74 94 09 14	53 86 03 82 22	89 47 78 25 32
37 87 01 11 42	26 88 25 35 59	93 57 01 86 92	36 06 66 07 74	43 60 34 18 52
40 53 20 35 50	01 50 56 86 44	83 48 50 27 46	09 66 22 89 36	16 85 49 46 58
08 77 49 16 00	95 24 86 77 52	61 49 86 52 11	36 61 12 26 41	12 36 07 30 72
51 63 17 85 00	89 92 57 34 62	46 70 00 80 81	69 54 17 62 22	31 44 93 70 55
78 63 55 49 05	55 58 35 42 76	25 54 92 74 14	25 50 11 47 57	08 75 84 41 23
75 32 24 27 10	73 10 38 72 49	82 07 42 75 75	63 73 17 18 43	00 22 68 11 64
14 39 31 16 61	67 52 62 17 11	63 31 53 20 70	18 67 78 50 84	02 50 48 81 55
47 62 63 02 29	75 52 35 58 99	43 16 34 75 95	64 18 89 95 73	71 68 45 66 22
02 67 98 82 51	68 15 37 99 47	61 16 02 15 57	72 97 90 50 86	16 38 39 13 71
32 78 95 60 91	80 44 63 73 03	38 56 94 54 28	37 32 82 81 86	88 05 82 41 85
44 11 26 49 38	09 05 70 95 64	04 87 28 16 62	75 39 28 79 15	08 05 88 91 33
21 49 00 89 34	75 49 60 41 86	79 41 61 23 29	30 96 88 58 08	57 63 42 08 04
66 79 99 95 99	89 63 74 46 73	99 16 77 96 41	51 07 75 07 70	83 20 74 53 33
23 01 26 57 35	95 66 95 28 25	70 43 88 99 24	64 21 04 61 56	36 12 61 35 74
77 78 76 53 94	40 90 95 68 29	69 10 65 53 77	99 70 45 29 42	54 98 19 56 56
45 53 72 79 34	44 11 23 73 27	27 44 06 43 80	52 12 55 17 64	50 52 21 95 80
95 97 19 67 60	79 90 89 37 98	29 76 40 11 00	86 88 37 54 44	05 78 76 69 00
99 19 87 91 17	44 78 11 97 67	45 67 89 19 55	11 06 31 38 61	96 42 91 45 72
40 91 22 84 47	35 25 92 41 36	99 06 44 84 76	75 52 92 51 75	39 52 10 80 33
15 76 80 64 08	14 14 96 26 70	85 49 89 76 27	20 13 08 99 01	90 24 62 10 09
53 23 27 32 97	95 68 44 84 70	65 99 44 39 98	73 57 61 51 54	36 28 26 77 86
99 03 29 17 80	57 41 48 10 42	88 70 25 47 07	18 68 23 69 12	16 03 00 23 89
01 98 16 14 13	33 29 06 19 79	51 45 93 79 40	09 23 59 55 33	63 30 39 69 98
68 30 09 51 20	38 38 30 31 58	97 15 27 64 12	00 63 50 68 95	56 65 85 91 30
11 79 92 82 42	64 30 90 38 75	61 86 03 69 49	07 38 81 47 52	53 04 77 45 73
53 26 48 91 98	47 25 28 14 88	75 51 34 42 72	10 66 35 97 52	40 51 26 60 67
05 42 84 60 63	34 07 97 26 78	16 01 76 14 27	86 90 68 22 57	38 94 48 25 55
98 47 00 10 28	62 48 68 75 81	55 52 84 72 93	19 08 69 42 41	13 61 35 16 60
45 03 02 83 90	91 84 73 86 94	80 99 11 10 94	74 96 55 21 91	18 25 09 49 12
61 88 77 13 93	65 96 36 37 01	06 00 97 68 54	93 59 98 70 07	34 23 06 13 23

SECTION IX

TABLES OF LOGARITHMS, ANTILOGARITHMS AND RECIPROCALS

	0	1	2	3	4	5	6	7	8	9	Mean differences 1	2	3	4	5	6	7	8	9
10	00000	00432	00860	01284	01703						42	85	127	170	212	254	297	339	381
						02119	02531	02938	03342	03743	40	81	121	162	202	242	283	323	364
11	04139	04532	04922	05308	05690						39	77	116	154	193	232	270	309	348
						06070	06446	06819	07188	07555	37	74	111	148	185	222	259	296	333
12	07918	08279	08636	08991	09342						36	71	106	142	177	213	248	284	319
						09691	10037	10380	10721	11059	34	68	102	136	170	204	238	272	307
13	11394	11727	12057	12385	12710						33	66	98	131	164	197	229	262	295
						13033	13354	13672	13988	14301	32	63	95	126	158	190	221	253	284
14	14613	14922	15229	15534	15836						30	61	91	122	152	183	213	244	274
						16137	16435	16732	17026	17319	29	59	88	118	147	177	206	236	265
15	17609	17898	18184	18469	18752						28	57	85	114	142	171	199	228	256
						19033	19312	19590	19866	20140	28	55	83	110	138	165	193	221	248
16	20412	20683	20951	21219	21484						27	53	80	107	134	160	187	214	240
						21748	22011	22272	22531	22789	26	52	78	104	130	156	182	208	233
17	23045	23300	23553	23805	24055						26	50	76	101	126	151	176	201	227
						24304	24551	24797	25042	25285	25	49	73	98	122	147	171	196	220
18	25527	25768	26007	26245	26482						24	48	71	95	119	143	167	190	214
						26717	26951	27184	27416	27646	23	46	69	93	116	139	162	185	208
19	27875	28103	28330	28556	28780						23	45	68	90	113	135	158	180	203
						29003	29226	29447	29667	29885	22	44	66	88	110	132	154	176	198
20	30103	30320	30535	30750	30963	31175	31387	31597	31806	32015	21	43	64	85	106	127	148	170	190
21	32222	32428	32634	32838	33041	33244	33445	33646	33846	34044	20	41	61	81	101	121	141	162	182
22	34242	34439	34635	34830	35025	35218	35411	35603	35793	35984	20	39	58	77	97	116	135	154	174
23	36173	36361	36549	36736	36922	37107	37291	37475	37658	37840	19	37	56	74	93	111	130	148	167
24	38021	38202	38382	38561	38739	38917	39094	39270	39445	39620	18	35	53	71	89	106	124	142	159
25	39794	39967	40140	40312	40483	40654	40824	40993	41162	41330	17	34	51	68	85	102	119	136	153
26	41497	41664	41830	41996	42160	42325	42488	42651	42813	42975	16	33	49	66	82	98	115	131	148
27	43136	43297	43457	43616	43775	43933	44091	44248	44404	44560	16	32	47	63	79	95	111	126	142
28	44716	44871	45025	45179	45332	45484	45637	45788	45939	46090	15	30	46	61	76	91	107	122	137
29	46240	46389	46538	46687	46835	46982	47129	47276	47422	47567	15	29	44	59	74	88	103	118	132
30	47712	47857	48001	48144	48287	48430	48572	48714	48855	48996	14	29	43	57	72	86	100	114	129
31	49136	49276	49415	49554	49693	49831	49969	50106	50243	50379	14	28	41	55	69	83	97	110	124
32	50515	50650	50786	50920	51054	51188	51322	51455	51587	51720	13	27	40	54	67	80	94	107	121
33	51851	51983	52114	52244	52375	52504	52634	52763	52892	53020	13	26	39	52	65	78	91	104	117
34	53148	53275	53403	53529	53656	53782	53908	54033	54158	54283	13	25	38	50	63	76	88	101	113
35	54407	54531	54654	54777	54900	55023	55145	55267	55388	55509	12	24	37	49	61	73	85	98	110
36	55630	55751	55871	55991	56110	56229	56348	56467	56585	56703	12	24	36	48	60	71	83	95	107
37	56820	56937	57054	57171	57287	57403	57519	57634	57749	57864	12	23	35	46	58	70	81	93	104
38	57978	58092	58206	58320	58433	58546	58659	58771	58883	58995	11	23	34	45	57	68	79	90	102
39	59106	59218	59329	59439	59550	59660	59770	59879	59988	60097	11	22	33	44	55	66	77	88	99
40	60206	60314	60423	60531	60638	60746	60853	60959	61066	61172	11	21	32	43	54	64	75	86	97
41	61278	61384	61490	61595	61700	61805	61909	62014	62118	62221	10	21	31	42	53	63	74	84	95
42	62325	62428	62531	62634	62737	62839	62941	63043	63144	63246	10	20	31	41	51	61	71	82	92
43	63347	63448	63548	63649	63749	63849	63949	64048	64147	64246	10	20	30	40	50	60	70	80	90
44	64345	64444	64542	64640	64738	64836	64933	65031	65128	65225	10	20	29	39	49	59	68	78	88
45	65321	65418	65514	65610	65706	65801	65896	65992	66087	66181	10	19	29	38	48	57	67	76	86
46	66276	66370	66464	66558	66652	66745	66839	66932	67025	67117	9	19	28	37	47	56	65	74	84
47	67210	67302	67394	67486	67578	67669	67761	67852	67943	68034	9	18	27	36	46	55	64	73	82
48	68124	68215	68305	68395	68485	68574	68664	68753	68842	68931	9	18	27	36	45	53	63	72	81
49	69020	69108	69197	69285	69373	69461	69548	69636	69723	69810	9	18	26	35	44	53	62	70	79

	0	1	2	3	4	5	6	7	8	9	Mean differences 1	2	3	4	5	6	7	8	9
50	69897	69984	70070	70157	70243	70329	70415	70501	70586	70672	9	17	26	34	43	52	60	69	77
51	70757	70842	70927	71012	71096	71181	71265	71349	71433	71517	8	17	25	34	42	50	59	67	76
52	71600	71684	71767	71850	71933	72016	72099	72181	72263	72346	8	17	25	33	42	50	58	66	75
53	72428	72509	72591	72673	72754	72835	72916	72997	73078	73159	8	16	24	32	41	49	57	65	73
54	73239	73320	73400	73480	73560	73640	73719	73799	73878	73957	8	16	24	32	40	48	56	64	72
55	74036	74115	74194	74273	74351	74429	74507	74586	74663	74741	8	16	23	31	39	47	55	63	70
56	74819	74896	74974	75051	75128	75205	75282	75358	75435	75511	8	15	23	31	39	46	54	62	69
57	75587	75664	75740	75815	75891	75967	76042	76118	76193	76268	8	15	23	30	38	45	53	60	68
58	76343	76418	76492	76567	76641	76716	76790	76864	76938	77012	7	15	22	30	37	44	52	59	67
59	77085	77159	77232	77305	77379	77452	77525	77597	77670	77743	7	15	22	29	37	44	51	58	66
60	77815	77887	77960	78032	78104	78176	78247	78319	78390	78462	7	14	22	29	36	43	50	58	65
61	78533	78604	78675	78746	78817	78888	78958	79029	79099	79169	7	14	21	28	36	43	50	57	64
62	79239	79309	79379	79449	79518	79588	79657	79727	79796	79865	7	14	21	28	35	41	48	55	62
63	79934	80003	80072	80140	80209	80277	80346	80414	80482	80550	7	14	20	27	34	41	48	54	61
64	80618	80686	80754	80821	80889	80956	81023	81090	81158	81224	7	13	20	27	34	40	47	54	60
65	81291	81358	81425	81491	81558	81624	81690	81757	81823	81889	7	13	20	26	33	40	46	53	59
66	81954	82020	82086	82151	82217	82282	82347	82413	82478	82543	7	13	20	26	33	39	46	52	59
67	82607	82672	82737	82802	82866	82930	82995	83059	83123	83187	6	13	19	26	32	38	45	51	58
68	83251	83315	83378	83442	83506	83569	83632	83696	83759	83822	6	13	19	25	32	38	44	50	57
69	83885	83948	84011	84073	84136	84198	84261	84323	84386	84448	6	12	19	25	31	37	43	50	56
70	84510	84572	84634	84696	84757	84819	84880	84942	85003	85065	6	12	19	25	31	37	43	50	56
71	85126	85187	85248	85309	85370	85431	85491	85552	85612	85673	6	12	18	24	31	37	43	49	55
72	85733	85794	85854	85914	85974	86034	86094	86153	86213	86273	6	12	18	24	30	36	42	48	54
73	86332	86392	86451	86510	86570	86629	86688	86747	86806	86864	6	12	18	24	30	35	41	47	53
74	86923	86982	87040	87099	87157	87216	87274	87332	87390	87448	6	12	17	23	29	35	41	46	52
75	87506	87564	87622	87679	87737	87795	87852	87910	87967	88024	6	12	17	23	29	35	41	46	52
76	88081	88138	88195	88252	88309	88366	88423	88480	88536	88593	6	11	17	23	29	34	40	46	51
77	88649	88705	88762	88818	88874	88930	88986	89042	89098	89154	6	11	17	22	28	34	39	45	50
78	89209	89265	89321	89376	89432	89487	89542	89597	89653	89708	6	11	17	22	28	33	39	44	50
79	89763	89818	89873	89927	89982	90037	90091	90146	90200	90255	6	11	17	22	28	33	39	44	50
80	90309	90363	90417	90472	90526	90580	90634	90687	90741	90795	5	11	16	22	27	32	38	43	49
81	90848	90902	90956	91009	91062	91116	91169	91222	91275	91328	5	11	16	21	27	32	37	42	48
82	91381	91434	91487	91540	91593	91645	91698	91751	91803	91855	5	11	16	21	27	32	37	42	48
83	91908	91960	92012	92064	92117	92169	92221	92273	92324	92376	5	10	16	21	26	31	36	42	47
84	92428	92480	92531	92583	92634	92686	92737	92788	92840	92891	5	10	15	20	26	31	36	41	46
85	92942	92993	93044	93095	93146	93197	93247	93298	93349	93399	5	10	15	20	26	31	36	41	46
86	93450	93500	93551	93601	93651	93702	93752	93802	93852	93902	5	10	15	20	25	30	35	40	45
87	93952	94002	94052	94101	94151	94201	94250	94300	94349	94399	5	10	15	20	25	30	35	40	45
88	94448	94498	94547	94596	94645	94694	94743	94792	94841	94890	5	10	15	20	25	29	34	39	44
89	94939	94988	95036	95085	95134	95182	95231	95279	95328	95376	5	10	15	19	24	29	34	39	44
90	95424	95472	95521	95569	95617	95665	95713	95761	95809	95856	5	10	14	19	24	29	34	38	43
91	95904	95952	95999	96047	96095	96142	96190	96237	96284	96332	5	9	14	19	24	28	33	38	42
92	96379	96426	96473	96520	96567	96614	96661	96708	96755	96802	5	9	14	19	24	28	33	38	42
93	96848	96895	96942	96988	97035	97081	97128	97174	97220	97267	5	9	14	18	23	28	32	38	42
94	97313	97359	97405	97451	97497	97543	97589	97635	97681	97727	5	9	14	18	23	28	32	37	42
95	97772	97818	97864	97909	97955	98000	98046	98091	98137	98182	5	9	14	18	23	27	32	36	41
96	98227	98272	98318	98363	98408	98453	98498	98543	98588	98632	5	9	14	18	23	27	32	36	41
97	98677	98722	98767	98811	98856	98900	98945	98989	99034	99078	4	9	13	18	22	27	31	36	40
98	99123	99167	99211	99255	99300	99344	99388	99432	99476	99520	4	9	13	18	22	26	31	35	40
99	99564	99607	99651	99695	99739	99782	99826	99870	99913	99957	4	9	13	17	22	26	31	35	39

ANTILOGARITHMS

	0	1	2	3	4	5	6	7	8	9	Mean differences 1	2	3	4	5	6	7	8	9
·00	10000	10023	10046	10069	10093	10116	10139	10162	10186	10209	2	5	7	9	12	14	16	19	21
·01	10233	10257	10280	10304	10328	10351	10375	10399	10423	10447	2	5	7	10	12	14	17	19	21
·02	10471	10495	10520	10544	10568	10593	10617	10641	10666	10691	2	5	7	10	12	15	17	20	22
·03	10715	10740	10765	10789	10814	10839	10864	10889	10914	10940	3	5	8	10	13	15	18	20	23
·04	10965	10990	11015	11041	11066	11092	11117	11143	11169	11194	3	5	8	10	13	15	18	20	23
·05	11220	11246	11272	11298	11324	11350	11376	11402	11429	11455	3	5	8	11	13	16	18	21	24
·06	11482	11508	11535	11561	11588	11614	11641	11668	11695	11722	3	5	8	11	13	16	19	21	24
·07	11749	11776	11803	11830	11858	11885	11912	11940	11967	11995	3	5	8	11	14	16	19	22	25
·08	12023	12050	12078	12106	12134	12162	12190	12218	12246	12274	3	6	8	11	14	17	20	22	25
·09	12303	12331	12359	12388	12417	12445	12474	12503	12531	12560	3	6	9	11	14	17	20	23	26
·10	12589	12618	12647	12677	12706	12735	12764	12794	12823	12853	3	6	9	12	15	18	21	24	26
·11	12882	12912	12942	12972	13002	13032	13062	13092	13122	13152	3	6	9	12	15	18	21	24	27
·12	13183	13213	13243	13274	13305	13335	13366	13397	13428	13459	3	6	9	12	15	18	21	25	28
·13	13490	13521	13552	13583	13614	13646	13677	13709	13740	13772	3	6	9	13	16	19	22	25	28
·14	13804	13836	13868	13900	13932	13964	13996	14028	14060	14093	3	6	10	13	16	19	22	26	29
·15	14125	14158	14191	14223	14256	14289	14322	14355	14388	14421	3	7	10	13	16	20	23	26	30
·16	14454	14488	14521	14555	14588	14622	14655	14689	14723	14757	3	7	10	13	17	20	24	27	30
·17	14791	14825	14859	14894	14928	14962	14997	15031	15066	15101	3	7	10	14	17	21	24	28	31
·18	15136	15171	15205	15241	15276	15311	15346	15382	15417	15453	4	7	11	14	18	21	25	28	32
·19	15488	15524	15560	15596	15631	15668	15704	15740	15776	15812	4	7	11	14	18	22	25	29	32
·20	15849	15885	15922	15959	15996	16032	16069	16106	16144	16181	4	7	11	15	18	22	26	30	33
·21	16218	16255	16293	16331	16368	16406	16444	16482	16520	16558	4	8	11	15	19	23	26	30	34
·22	16596	16634	16672	16711	16749	16788	16827	16866	16904	16943	4	8	12	15	19	23	27	31	35
·23	16982	17022	17061	17100	17140	17179	17219	17258	17298	17338	4	8	12	16	20	24	28	32	36
·24	17378	17418	17458	17498	17539	17579	17620	17660	17701	17742	4	8	12	16	20	24	28	32	36
·25	17783	17824	17865	17906	17947	17989	18030	18072	18113	18155	4	8	12	17	21	25	29	33	37
·26	18197	18239	18281	18323	18365	18408	18450	18493	18535	18578	4	8	13	17	21	25	30	34	38
·27	18621	18664	18707	18750	18793	18836	18880	18923	18967	19011	4	9	13	17	22	26	30	35	39
·28	19055	19099	19143	19187	19231	19275	19320	19364	19409	19454	4	9	13	18	22	26	31	35	40
·29	19498	19543	19588	19634	19679	19724	19770	19815	19861	19907	5	9	14	18	23	27	32	36	41
·30	19953	19999	20045	20091	20137	20184	20230	20277	20324	20370	5	9	14	19	23	28	32	37	42
·31	20417	20464	20512	20559	20606	20654	20701	20749	20797	20845	5	10	14	19	24	29	33	38	43
·32	20893	20941	20989	21038	21086	21135	21184	21232	21281	21330	5	10	15	19	24	29	34	39	44
·33	21380	21429	21478	21528	21577	21627	21677	21727	21777	21827	5	10	15	20	25	30	35	40	45
·34	21878	21928	21979	22029	22080	22131	22182	22233	22284	22336	5	10	15	20	25	31	36	41	46
·35	22387	22439	22491	22542	22594	22646	22699	22751	22803	22856	5	10	16	21	26	31	37	42	47
·36	22909	22961	23014	23067	23121	23174	23227	23281	23336	23388	5	11	16	21	27	32	37	43	48
·37	23442	23496	23550	23605	23659	23714	23768	23823	23878	23933	5	11	16	22	27	33	38	44	49
·38	23988	24044	24099	24155	24210	24266	24322	24378	24434	24491	6	11	17	22	28	34	39	45	50
·39	24547	24604	24660	24717	24774	24831	24889	24946	25003	25061	6	11	17	23	29	34	40	46	51
·40	25119	25177	25236	25293	25351	25410	25468	25527	25586	25645	6	12	18	23	29	35	41	47	53
·41	25704	25763	25823	25882	25942	26002	26062	26122	26182	26242	6	12	18	24	30	36	42	48	54
·42	26303	26363	26424	26485	26546	26607	26669	26730	26792	26853	6	12	18	24	31	37	43	49	55
·43	26915	26977	27040	27102	27164	27227	27290	27353	27416	27479	6	13	19	25	31	38	44	50	56
·44	27542	27606	27669	27733	27797	27861	27925	27990	28054	28119	6	13	19	26	32	39	45	51	58
·45	28184	28249	28314	28379	28445	28510	28576	28642	28708	28774	7	13	20	26	33	39	46	52	59
·46	28840	28907	28973	29040	29107	29174	29242	29309	29376	29444	7	13	20	27	34	40	47	54	60
·47	29512	29580	29648	29717	29785	29854	29923	29992	30061	30130	7	14	21	28	34	41	48	55	62
·48	30200	30269	30339	30409	30479	30549	30620	30690	30761	30832	7	14	21	28	35	42	49	56	63
·49	30903	30974	31046	31117	31189	31261	31333	31405	31477	31550	7	14	22	29	36	43	50	58	65

ANTILOGARITHMS

	0	1	2	3	4	5	6	7	8	9	Mean differences								
											1	2	3	4	5	6	7	8	9
·50	31623	31696	31769	31842	31916	31989	32063	32137	32211	32285	7	15	22	29	37	44	52	59	66
·51	32359	32434	32509	32584	32659	32735	32809	32885	32961	33037	8	15	23	30	38	45	53	60	68
·52	33113	33189	33266	33343	33420	33497	33574	33651	33729	33806	8	15	23	31	39	46	54	62	69
·53	33884	33963	34041	34119	34198	34277	34356	34435	34514	34594	8	16	24	32	40	47	55	63	71
·54	34674	34754	34834	34914	34995	35075	35156	35237	35318	35400	8	16	24	32	40	48	56	65	73
·55	35481	35563	35645	35727	35810	35892	35975	36058	36141	36224	8	16	25	33	41	50	58	66	74
·56	36308	36392	36475	36559	36644	36728	36813	36898	36983	37068	8	17	25	34	42	51	59	68	76
·57	37154	37239	37325	37411	37497	37584	37670	37757	37844	37931	9	17	26	35	43	52	61	69	78
·58	38019	38107	38194	38282	38371	38459	38548	38637	38726	38815	9	18	27	35	44	53	62	71	80
·59	38905	38994	39084	39174	39264	39355	39446	39537	39628	39719	9	18	27	36	45	54	63	72	82
·60	39811	39902	39994	40087	40179	40272	40365	40458	40551	40644	9	19	28	37	46	56	65	74	83
·61	40738	40832	40926	41020	41115	41210	41305	41400	41495	41591	9	19	28	38	47	57	66	76	85
·62	41687	41783	41879	41976	42073	42170	42267	42364	42462	42560	10	19	29	39	49	58	68	78	87
·63	42658	42756	42855	42954	43053	43152	43251	43351	43451	43551	10	20	30	40	50	60	70	80	89
·64	43652	43752	43853	43954	44055	44157	44259	44361	44463	44566	10	20	30	41	51	61	71	81	91
·65	44668	44771	44875	44978	45082	45186	45290	45394	45499	45604	10	21	31	42	52	62	73	83	94
·66	45709	45814	45920	46026	46132	46238	46345	46452	46559	46666	11	21	32	43	53	64	75	85	96
·67	46774	46881	46989	47098	47206	47315	47424	47534	47643	47753	11	22	33	44	54	65	76	87	98
·68	47863	47973	48084	48195	48306	48417	48529	48641	48753	48865	11	22	33	45	56	67	78	89	100
·69	48978	49091	49204	49317	49431	49545	49659	49774	49888	50003	11	23	34	46	57	68	80	91	103
·70	50119	50234	50350	50466	50582	50699	50816	50933	51050	51168	12	23	35	47	58	70	82	93	105
·71	51286	51404	51523	51642	51761	51880	52000	52119	52240	52360	12	24	36	48	60	72	84	96	108
·72	52481	52602	52723	52845	52966	53088	53211	53333	53456	53580	12	24	37	49	61	73	85	98	110
·73	53703	53827	53951	54075	54200	54325	54450	54576	54702	54828	13	25	38	50	63	75	88	100	113
·74	54954	55081	55208	55336	55463	55590	55719	55847	55976	56105	13	26	38	51	64	77	90	102	115
·75	56234	56364	56494	56624	56754	56885	57016	57148	57280	57412	13	26	39	52	66	79	92	105	118
·76	57544	57677	57810	57943	58076	58210	58345	58479	58614	58749	13	27	40	54	67	80	94	107	121
·77	58884	59020	59156	59293	59429	59566	59704	59841	59979	60117	14	27	41	55	69	82	96	110	123
·78	60256	60395	60534	60674	60814	60954	61094	61235	61376	61518	14	28	42	56	70	84	98	112	126
·79	61659	61802	61944	62087	62230	62373	62517	62661	62806	62951	14	29	43	58	72	86	101	115	130
·80	63096	63241	63387	63533	63680	63826	63973	64121	64269	64417	15	29	44	59	74	88	103	118	132
·81	64565	64714	64863	65013	65163	65313	65464	65615	65766	65917	15	30	45	60	75	90	105	120	135
·82	66069	66222	66374	66527	66681	66834	66988	67143	67298	67453	15	31	46	62	77	92	108	123	139
·83	67608	67764	67920	68077	68234	68391	68549	68707	68865	69024	16	32	47	63	79	95	110	126	142
·84	69183	69343	69503	69663	69823	69984	70146	70307	70469	70632	16	32	48	64	81	97	113	129	145
·85	70795	70958	71121	71285	71450	71614	71779	71945	72111	72277	17	33	50	66	83	99	116	132	149
·86	72444	72611	72778	72946	73114	73282	73451	73621	73790	73961	17	34	51	68	85	101	118	135	152
·87	74131	74302	74473	74645	74817	74989	75162	75336	75509	75683	17	35	52	69	87	104	121	138	156
·88	75858	76033	76208	76384	76560	76736	76913	77090	77268	77446	18	35	53	71	89	107	125	142	159
·89	77625	77804	77983	78163	78343	78524	78705	78886	79068	79250	18	36	54	72	91	109	127	145	163
·90	79433	79616	79799	79983	80168	80353	80538	80724	80910	81096	19	37	56	74	93	111	130	148	167
·91	81283	81470	81658	81846	82035	82224	82414	82604	82794	82985	19	38	57	76	95	113	132	151	170
·92	83176	83368	83560	83753	83946	84140	84333	84528	84723	84918	19	39	58	78	97	116	136	155	175
·93	85114	85310	85507	85704	85901	86099	86298	86497	86696	86896	20	40	60	79	99	119	139	158	178
·94	87096	87297	87498	87700	87902	88105	88308	88512	88716	88920	20	41	61	81	102	122	142	162	183
·95	89125	89331	89536	89743	89950	90157	90365	90573	90782	90991	21	42	62	83	104	125	146	166	187
·96	91201	91411	91622	91833	92045	92257	92470	92683	92897	93111	21	42	64	85	106	127	149	170	191
·97	93325	93541	93756	93972	94189	94406	94624	94842	95060	95280	22	43	65	87	109	130	152	174	195
·98	95499	95719	95940	96161	96383	96605	96828	97051	97275	97499	22	44	67	89	111	133	155	178	200
·99	97724	97949	98175	98401	98628	98855	99083	99312	99541	99770	23	46	68	91	114	137	160	182	205

RECIPROCALS OF NUMBERS. FROM 1 TO 10

Numbers in difference columns to be subtracted, not added

	0	1	2	3	4	5	6	7	8	9	Mean differences 1	2	3	4	5	6	7	8	9
1·0	1·0000	99010	98039	97087	96154	95238	94340	93458	92593	91743									
1·1	·90909	90090	89286	88496	87719	86957	86207	85470	84746	84034									
1·2	·83333	82645	81967	81301	80645	80000	79365	78740	78125	77519									
1·3	·76923	76336	75758	75188	74627	74074	73529	72993	72464	71942									
1·4	·71429	70922	70423	69930	69444	68966	68493	68027	67568	67114									
1·5	·66667	66225	65789	65359	64935	64516	64103	63694	63291	62893									
1·6	·62500	62112	61728	61350	60976	60606	60241	59880	59524	59172	37	74	110	147	184	221	258	294	331
1·7	·58824	58480	58140	57803	57471	57143	56818	56497	56180	55866	33	65	98	131	164	196	229	262	294
1·8	·55556	55249	54945	54645	54348	54054	53763	53476	53191	52910	29	58	88	117	146	175	204	234	263
1·9	·52632	52356	52083	51813	51546	51282	51020	50761	50505	50251	26	53	79	105	132	158	184	210	237
2·0	·50000	49751	49505	49261	49020	48780	48544	48309	48077	47847	24	48	71	95	119	143	167	190	214
2·1	·47619	47393	47170	46948	46729	46512	46296	46083	45872	45662	22	43	65	86	108	130	151	173	194
2·2	·45455	45249	45045	44843	44643	44444	44248	44053	43860	43668	20	40	59	79	99	119	139	158	178
2·3	·43478	43290	43103	42918	42735	42553	42373	42194	42017	41841	18	36	54	72	91	109	127	145	163
2·4	·41667	41494	41322	41152	40984	40816	40650	40486	40323	40161	17	33	50	67	84	100	117	134	150
2·5	·40000	39841	39683	39526	39370	39216	39063	38911	38760	38610	15	31	46	62	77	92	108	123	139
2·6	·38462	38314	38168	38023	37879	37736	37594	37453	37313	37175	14	29	43	57	72	86	100	114	129
2·7	·37037	36900	36765	36630	36496	36364	36232	36101	35971	35842	13	26	40	53	66	79	92	106	119
2·8	·35714	35587	35461	35336	35211	35088	34965	34843	34722	34602	12	25	37	49	62	74	86	98	111
2·9	·34483	34364	34247	34130	34014	33898	33784	33670	33557	33445	12	23	35	46	58	69	81	92	104
3·0	·33333	33223	33113	33003	32895	32787	32680	32573	32468	32362	11	22	32	43	54	65	76	86	97
3·1	·32258	32154	32051	31949	31847	31746	31646	31546	31447	31348	10	20	30	40	51	61	71	81	91
3·2	·31250	31153	31056	30960	30864	30769	30675	30581	30488	30395	10	19	29	38	48	57	67	76	86
3·3	·30303	30211	30120	30030	29940	29851	29762	29674	29586	29499	9	18	27	36	45	53	62	71	80
3·4	·29412	29326	29240	29155	29070	28986	28902	28818	28736	28653	8	17	25	34	42	50	59	67	76
3·5	·28571	28490	28409	28329	28249	28169	28090	28011	27933	27855	8	16	24	32	40	47	55	63	71
3·6	·27778	27701	27624	27548	27473	27397	27322	27248	27174	27100	8	15	23	30	38	45	53	60	68
3·7	·27027	26954	26882	26810	26738	26667	26596	26525	26455	26385	7	14	21	28	36	43	50	57	64
3·8	·26316	26247	26178	26110	26042	25974	25907	25840	25773	25707	7	14	20	27	34	41	48	54	61
3·9	·25641	25575	25510	25445	25381	25316	25253	25189	25126	25063	6	13	19	26	32	38	45	51	58
4·0	·25000	24938	24876	24814	24752	24691	24631	24570	24510	24450	6	12	18	24	31	37	43	49	55
4·1	·24390	24331	24272	24213	24155	24096	24038	23981	23923	23866	6	12	17	23	29	35	41	46	52
4·2	·23810	23753	23697	23641	23585	23529	23474	23419	23364	23310	6	11	17	22	28	33	39	44	50
4·3	·23256	23202	23148	23095	23041	22989	22936	22883	22831	22779	5	11	16	21	27	32	37	42	48
4·4	·22727	22676	22624	22573	22523	22472	22422	22371	22321	22272	5	10	15	20	26	31	36	41	46
4·5	·22222	22173	22124	22075	22026	21978	21930	21882	21834	21786	5	10	14	19	24	29	34	38	43
4·6	·21739	21692	21645	21598	21552	21505	21459	21413	21368	21322	5	9	14	18	23	28	32	37	41
4·7	·21277	21231	21186	21142	21097	21053	21008	20964	20921	20877	4	9	13	18	22	26	31	35	40
4·8	·20833	20790	20747	20704	20661	20619	20576	20534	20492	20450	4	9	13	17	22	26	30	34	39
4·9	·20408	20367	20325	20284	20243	20202	20161	20121	20080	20040	4	8	12	16	20	25	29	33	37
5·0	·20000	19960	19920	19881	19841	19802	19763	19724	19685	19646	4	8	12	16	20	24	27	31	35
5·1	·19608	19569	19531	19493	19455	19417	19380	19342	19305	19268	4	8	11	15	19	23	26	30	34
5·2	·19231	19194	19157	19120	19084	19048	19011	18975	18939	18904	4	7	11	15	18	22	25	29	33
5·3	·18868	18832	18797	18762	18727	18691	18657	18622	18587	18553	3	7	10	14	18	21	24	28	31
5·4	·18519	18484	18450	18416	18382	18349	18315	18282	18248	18215	3	7	10	14	17	20	24	27	30

RECIPROCALS OF NUMBERS. FROM 1 TO 10

Numbers in difference columns to be subtracted, not added

	0	1	2	3	4	5	6	7	8	9	Mean differences 1	2	3	4	5	6	7	8	9
5·5	·18182	18149	18116	18083	18051	18018	17986	17953	17921	17889	3	7	10	13	16	20	23	26	29
5·6	·17857	17825	17794	17762	17731	17699	17668	17637	17606	17575	3	6	9	13	16	19	22	25	28
5·7	·17544	17513	17483	17452	17422	17391	17361	17331	17301	17271	3	6	9	12	15	18	21	24	27
5·8	·17241	17212	17182	17153	17123	17094	17065	17036	17007	16978	3	6	9	12	15	18	20	23	26
5·9	·16949	16920	16892	16863	16835	16807	16779	16750	16722	16694	3	6	9	11	14	17	20	23	25
6·0	·16667	16639	16611	16584	16556	16529	16502	16474	16447	16420	3	6	8	11	14	16	19	22	25
6·1	·16393	16367	16340	16313	16287	16260	16234	16207	16181	16155	3	5	8	11	13	16	19	21	24
6·2	·16129	16103	16077	16051	16026	16000	15974	15949	15924	15898	3	5	8	10	13	15	18	21	23
6·3	·15873	15848	15823	15798	15773	15748	15723	15699	15674	15649	2	5	7	10	12	15	17	20	22
6·4	·15625	15601	15576	15552	15528	15504	15480	15456	15432	15408	2	5	7	10	12	14	17	19	22
6·5	·15385	15361	15337	15314	15291	15267	15244	15221	15198	15175	2	5	7	9	12	14	16	19	21
6·6	·15152	15129	15106	15083	15060	15038	15015	14993	14970	14948	2	5	7	9	11	14	16	18	20
6·7	·14925	14903	14881	14859	14837	14815	14793	14771	14749	14728	2	4	7	9	11	13	15	18	20
6·8	·14706	14684	14663	14641	14620	14599	14577	14556	14535	14514	2	4	6	9	11	13	15	17	19
6·9	·14493	14472	14451	14430	14409	14388	14368	14347	14327	14306	2	4	6	8	10	12	14	17	19
7·0	·14286	14265	14245	14225	14205	14184	14164	14144	14124	14104	2	4	6	8	10	12	14	16	18
7·1	·14085	14065	14045	14025	14006	13986	13966	13947	13928	13908	2	4	6	8	10	12	14	16	18
7·2	·13889	13870	13850	13831	13812	13793	13774	13755	13736	13717	2	4	6	8	10	11	13	15	17
7·3	·13699	13680	13661	13643	13624	13605	13587	13569	13550	13532	2	4	6	7	9	11	13	15	17
7·4	·13514	13495	13477	13459	13441	13423	13405	13387	13369	13351	2	4	5	7	9	11	13	15	16
7·5	·13333	13316	13298	13280	13263	13245	13228	13210	13193	13175	2	4	5	7	9	11	12	14	16
7·6	·13158	13141	13123	13106	13089	13072	13055	13038	13021	13004	2	3	5	7	9	10	12	14	15
7·7	·12987	12970	12953	12937	12920	12903	12887	12870	12853	12837	2	3	5	7	8	10	12	13	15
7·8	·12821	12804	12788	12771	12755	12739	12723	12706	12690	12674	2	3	5	7	8	10	11	13	15
7·9	·12658	12642	12626	12610	12594	12579	12563	12547	12531	12516	2	3	5	6	8	9	11	13	14
8·0	·12500	12484	12469	12453	12438	12422	12407	12392	12376	12361	2	3	5	6	8	9	11	12	14
8·1	·12346	12330	12315	12300	12285	12270	12255	12240	12225	12210	2	3	5	6	8	9	11	12	14
8·2	·12195	12180	12165	12151	12136	12121	12107	12092	12077	12063	1	3	4	6	7	9	10	12	13
8·3	·12048	12034	12019	12005	11990	11976	11962	11947	11933	11919	1	3	4	6	7	9	10	11	13
8·4	·11905	11891	11876	11862	11848	11834	11820	11806	11792	11779	1	3	4	6	7	8	10	11	13
8·5	·11765	11751	11737	11723	11710	11696	11682	11669	11655	11641	1	3	4	5	7	8	10	11	12
8·6	·11628	11614	11601	11587	11574	11561	11547	11534	11521	11507	1	3	4	5	7	8	9	11	12
8·7	·11494	11481	11468	11455	11442	11429	11416	11403	11390	11377	1	3	4	5	7	8	9	10	12
8·8	·11364	11351	11338	11325	11312	11299	11287	11274	11261	11249	1	3	4	5	6	8	9	10	12
8·9	·11236	11223	11211	11198	11186	11173	11161	11148	11136	11123	1	3	4	5	6	8	9	10	11
9·0	·11111	11099	11086	11074	11062	11050	11038	11025	11013	11001	1	2	4	5	6	7	9	10	11
9·1	·10989	10977	10965	10953	10941	10929	10917	10905	10893	10881	1	2	4	5	6	7	8	10	11
9·2	·10870	10858	10846	10834	10823	10811	10799	10787	10776	10764	1	2	4	5	6	7	8	9	11
9·3	·10753	10741	10730	10718	10707	10695	10684	10672	10661	10650	1	2	4	5	6	7	8	9	10
9·4	·10638	10627	10616	10604	10593	10582	10571	10560	10549	10537	1	2	3	4	6	7	8	9	10
9·5	·10526	10515	10504	10493	10482	10471	10460	10449	10438	10428	1	2	3	4	5	7	8	9	10
9·6	·10417	10406	10395	10384	10373	10363	10352	10341	10331	10320	1	2	3	4	5	6	8	9	10
9·7	·10309	10299	10288	10277	10267	10256	10246	10235	10225	10215	1	2	3	4	5	6	7	8	10
9·8	·10204	10194	10183	10173	10163	10152	10142	10132	10121	10111	1	2	3	4	5	6	7	8	9
9·9	·10101	10091	10081	10070	10060	10050	10040	10030	10020	10010	1	2	3	4	5	6	7	8	9