PEARSON EDEXCEL LEVEL 3
ADVANCED SUBSIDIARY AND
ADVANCED GCE IN STATISTICS

Statistical formulae and tables
For first certification from June 2018 for: Advanced Subsidiary GCE in Statistics (8ST0)

For first certification from June 2019 for: Advanced GCE in Statistics (9ST0)

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1. INTRODUCTION

The formulae in this booklet have been arranged by qualification. Students sitting AS Statistics papers should refer to Section 2, pages 5 – 8. Students sitting A Level Statistics papers should refer to Section 3, pages 9 – 18.

2. AS LEVEL IN STATISTICS

Population variance, σ^2, =

$$\left(\frac{\sum x^2}{N} - \mu^2\right) = \frac{1}{N}\sum (x - \mu)^2$$

Population standard deviation, σ, =

$$\sqrt{\left(\frac{\sum x^2}{N} - \mu^2\right)} = \sqrt{\frac{1}{N}\sum (x - \mu)^2}$$

Sample variance =

$$\frac{1}{n-1}\left(\sum x^2 - \frac{\left(\sum x\right)^2}{n}\right) = \frac{1}{n-1}\sum \left(x - \bar{x}\right)^2$$

Sample standard deviation =

$$\sqrt{\frac{1}{n-1}\left(\sum x^2 - \frac{\left(\sum x\right)^2}{n}\right)} = \sqrt{\frac{1}{n-1}\sum\left(x - \bar{x}\right)^2}$$

Binomial probability calculations:

$$P(X = x) = \binom{n}{x} p^x (1-p)^{n-x}$$

Mean = np

Variance = $np(1-p)$

For a random sample of n_x **observations from**

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

$$\frac{\bar{X} - \mu}{\frac{\sigma}{\sqrt{n}}} \sim N(0, 1)$$

Test statistic for a binomial proportion using normal distribution:

$$\frac{\hat{p} - p}{\sqrt{\frac{p(1-p)}{n}}} \sim N(0, 1)$$

Product moment correlation coefficient:

$$r = \frac{S_{xy}}{\sqrt{S_{xx} \times S_{yy}}} = \frac{\sum\left(x_i - \bar{x}\right)\left(y_i - \bar{y}\right)}{\sqrt{\left\{\sum\left(x_i - \bar{x}\right)^2\right\}\left\{\sum\left(y_i - \bar{y}\right)^2\right\}}}$$

$$= \frac{\sum x_i y_i - \frac{\left(\sum x_i\right)\left(\sum y_i\right)}{n}}{\sqrt{\left(\sum x_i^2 - \frac{\left(\sum x_i\right)^2}{n}\right)\left(\sum y_i^2 - \frac{\left(\sum y_i\right)^2}{n}\right)}}$$

Coefficients for least squares regression line:

least squares regression line of y on x is $y = a + bx$,

where $a = \bar{y} - b\bar{x}$

the regression coefficient of y on x is

$$b = \frac{S_{xy}}{S_{xx}} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sum (x_i - \bar{x})^2}$$

Test for association:

$$\sum \frac{(O_i - E_i)^2}{E_i}$$ **is approximately distributed as** χ^2

3. A LEVEL IN STATISTICS

Population variance, σ^2, =

$$\left(\frac{\sum x^2}{N} - \mu^2 \right) = \frac{1}{N} \sum (x - \mu)^2$$

Population standard deviation, σ, =

$$\sqrt{\left(\frac{\sum x^2}{N} - \mu^2 \right)} = \sqrt{\frac{1}{N} \sum (x - \mu)^2}$$

Sample variance, s^2, =

$$\frac{1}{n-1} \left(\sum x^2 - \frac{\left(\sum x \right)^2}{n} \right) = \frac{1}{n-1} \sum \left(x - \bar{x} \right)^2$$

Sample standard deviation, s, =

$$\sqrt{\frac{1}{n-1}\left(\sum x^2 - \frac{\left(\sum x\right)^2}{n}\right)} = \sqrt{\frac{1}{n-1}\sum\left(x - \bar{x}\right)^2}$$

Binomial probability calculations:

$$P(X = x) = \binom{n}{x} p^x (1-p)^{n-x}$$

Binomial mean $= np$

Binomial variance $= np(1-p)$

For a random sample of n_x **observations**

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

$$\frac{\bar{X} - \mu}{\frac{\sigma}{\sqrt{n}}} \sim N(0, 1)$$

Test statistic for a binomial proportion using normal distribution:

$$\frac{\hat{p} - p}{\sqrt{\frac{p(1-p)}{n}}} \sim N(0, 1)$$

Product moment correlation coefficient:

$$r = \frac{S_{xy}}{\sqrt{S_{xx} \times S_{yy}}} = \frac{\sum\left(x_i - \bar{x}\right)\left(y_i - \bar{y}\right)}{\sqrt{\left\{\sum\left(x_i - \bar{x}\right)^2\right\}\left\{\sum\left(y_i - \bar{y}\right)^2\right\}}}$$

$$= \frac{\sum x_i y_i - \frac{\left(\sum x_i\right)\left(\sum y_i\right)}{n}}{\sqrt{\left(\sum x_i^2 - \frac{\left(\sum x_i\right)^2}{n}\right)\left(\sum y_i^2 - \frac{\left(\sum y_i\right)^2}{n}\right)}}$$

Coefficients for least squares regression line:

least squares regression line of y on x is $y = a + bx$,

where $a = \bar{y} - b\bar{x}$

the regression coefficient of y on x is

$$b = \frac{S_{xy}}{S_{xx}} = \frac{\sum\left(x_i - \bar{x}\right)\left(y_i - \bar{y}\right)}{\sum\left(x_i - \bar{x}\right)^2}$$

Bayes' theorem for up to three events:

$$P(A_j \mid B) = \frac{P(A_j) \times P(B \mid A_j)}{\sum_{i=1}^{n} P(A_i) \times P(B \mid A_i)}$$

The Poisson probability formula:

$$P(X = x) = e^{-\lambda} \frac{\lambda^x}{x!}$$

Poisson mean = λ

Poisson variance = λ

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The exponential cumulative probability formula:

$$P(X \leq x) = 1 - e^{-\lambda x}$$

Exponential mean $= \frac{1}{\lambda}$

Exponential variance $= \frac{1}{\lambda^2}$

$$E(aX \pm bY) = aE(X) \pm bE(Y)$$

$$Var(aX \pm bY) = a^2\ Var(X) + b^2\ Var(Y)$$, **for independent variables** X **and** Y

For a random sample of n_x **observations from**

$$N\left(\mu, \sigma^2\right)$$

$$\frac{\bar{X} - \mu}{\frac{S}{\sqrt{n}}} \sim t_{n-1}$$

(also valid in matched-pairs situations)

For a random sample of n_x observations from $N\left(\mu_x, \sigma_x^2\right)$ and, independently, a random sample of n_y observations from $N\left(\mu_y, \sigma_y^2\right)$

$$\frac{\left(\bar{X} - \bar{Y}\right) - \left(\mu_x - \mu_y\right)}{\sqrt{\frac{\sigma_x^2}{n_x} + \frac{\sigma_y^2}{n_y}}} \sim N(0, 1)$$

For a random sample of n_x observations from $N(\mu_x, \sigma_x^2)$ and, independently, a random sample of n_y observations from $N(\mu_y, \sigma_y^2)$ where

$$\sigma_x^2 = \sigma_y^2 = \sigma^2 \text{ (unknown)}$$

$$\frac{(\bar{X} - \bar{Y}) - (\mu_x - \mu_y)}{\sqrt{S_p^2\left(\frac{1}{n_x} + \frac{1}{n_y}\right)}} \sim t_{n_x + n_y - 2} \text{ where}$$

$$S_p^2 = \frac{(n_x - 1)S_x^2 + (n_y - 1)S_y^2}{n_x + n_y - 2}$$

Test statistic for the difference in two binomial proportions:

$$\frac{p_1 - p_2}{\text{standard error}} \text{ where standard error}$$

$$= \sqrt{p \times (1 - p) \times \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}$$

$$\text{where } p = \frac{p_1 \times n_1 + p_2 \times n_2}{n_1 + n_2}$$

Test for association and goodness of fit test:

$$\sum \frac{(O_i - E_i)^2}{E_i} \text{ is approximately distributed as } \chi^2$$

Analysis of variance (one-way and two-way):

one-factor model $x_{ij} = \mu + \alpha_i + \varepsilon_{ij}$,

where $\varepsilon_{ij} \sim N\left(0, \sigma^2\right)$

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total sum of squares $SS_T = \sum_i \sum_j x_{ij}^2 - \frac{T^2}{n}$

between groups sum of squares

$$SS_B = \sum_i \frac{T_i^2}{n_i} - \frac{T^2}{n}$$

two-factor model (with m rows and n columns)

$$x_{ij} = \mu + \alpha_i + \beta_j + \varepsilon_{ij}, \text{ where } \varepsilon_{ij} \sim N\left(0, \sigma^2\right)$$

total sum of squares $SS_T = \sum_i \sum_j x_{ij}^2 - \frac{T^2}{mn}$

between rows sum of squares

$$SS_R = \sum_i \frac{R_i^2}{n} - \frac{T^2}{mn}$$

between columns sum of squares

$$SS_C = \sum_j \frac{C_j^2}{m} - \frac{T^2}{mn}$$

(Turn over)

Cohen's d formula:

$$d = \frac{\left(\bar{x}_1 - \bar{x}_2\right)}{s}$$

$$\text{where } s = \sqrt{\frac{\left(n_1 - 1\right)s_1^2 + \left(n_2 - 1\right)s_2^2}{n_1 + n_2 - 2}}$$

(Turn over)

4. STATISTICAL TABLES

TABLE 1: CUMULATIVE BINOMIAL DISTRIBUTION FUNCTION

The tabulated value is $P(X \leq x)$, where X has a binomial distribution with parameters n and parameters p.

CONTENTS

n = 2

p = ….. 0.01 ……. 0.02 …... 0.03 …... 0.04

---

x = 0 ... 0.9801 ... 0.9604 ... 0.9409 ... 0.9216

x = 1 ... 0.9999 ... 0.9996 ... 0.9991 ... 0.9984

x = 2 ... 1.0000 ... 1.0000 ... 1.0000 ... 1.0000

---

p = …... 0.05 ……. 0.06 …… 0.07 …… 0.08

---

x = 0 … 0.9025 … 0.8836 … 0.8649 … 0.8464

x = 1 … 0.9975 … 0.9964 … 0.9951 … 0.9936

x = 2 … 1.0000 … 1.0000 … 1.0000 … 1.0000

---

p = 0.09 – 0.20 on the next page

n = 2 continued

p = ….. 0.09 …… 0.10 …… 0.15 …… 0.20

x = 0	0.8281	0.8100	0.7225	0.6400
x = 1	0.9919	0.9900	0.9775	0.9600
x = 2	1.0000	1.0000	1.0000	1.0000

p = ….. 0.25 …… 0.30 …… 0.35 …… 0.40

x = 0	0.5625	0.4900	0.4225	0.3600
x = 1	0.9375	0.9100	0.8775	0.8400
x = 2	1.0000	1.0000	1.0000	1.0000

p = ….. 0.45 …… 0.50

x = 0	0.3025	0.2500
x = 1	0.7975	0.7500
x = 2	1.0000	1.0000

n = 3 is on the next page

n = 3

p = ….. 0.01 ……. 0.02 …... 0.03 …... 0.04

---

x = 0 ... 0.9703 ... 0.9412 ... 0.9127 ... 0.8847

x = 1 ... 0.9997 ... 0.9988 ... 0.9974 ... 0.9953

x = 2 ... 1.0000 ... 1.0000 ... 1.0000 ... 0.9999

x = 3 ……. 1.0000

---

p = ….. 0.05 …... 0.06 …... 0.07 …... 0.08

---

x = 0 ... 0.8574 ... 0.8306 ... 0.8044 ... 0.7787

x = 1 ... 0.9928 ... 0.9896 ... 0.9860 ... 0.9818

x = 2 ... 0.9999 ... 0.9998 ... 0.9997 ... 0.9995

x = 3 ... 1.0000 ... 1.0000 ... 1.0000 ... 1.0000

---

p = 0.09 – 0.20 is on the next page

n = 3 continued

p = ….. 0.09 …... 0.10 …... 0.15 …... 0.20

---

x = 0 ... 0.7536 ... 0.7290 ... 0.6141 ... 0.5120

x = 1 ... 0.9772 ... 0.9720 ... 0.9393 ... 0.8960

x = 2 ... 0.9993 ... 0.9990 ... 0.9966 ... 0.9920

x = 3 ... 1.0000 ... 1.0000 ... 1.0000 ... 1.0000

---

p = ….. 0.25 …... 0.30 …... 0.35 …... 0.40

---

x = 0 ... 0.4219 ... 0.3430 ... 0.2746 ... 0.2160

x = 1 ... 0.8438 ... 0.7840 ... 0.7183 ... 0.6480

x = 2 ... 0.9844 ... 0.9730 ... 0.9571 ... 0.9360

x = 3 ... 1.0000 ... 1.0000 ... 1.0000 ... 1.0000

---

p = 0.45 – 0.50 is on the next page

n = 3 continued

p = ….. 0.45 …... 0.50

---

x = 0 ... 0.1664 ... 0.1250

x = 1 ... 0.5748 ... 0.5000

x = 2 ... 0.9089 ... 0.8750

x = 3 ... 1.0000 ... 1.0000

---

n = 4 is on the next page

n = 4

p = ….. 0.01 …... 0.02 …... 0.03 …... 0.04

---

x = 0 ... 0.9606 ... 0.9224 ... 0.8853 ... 0.8493

x = 1 ... 0.9994 ... 0.9977 ... 0.9948 ... 0.9909

x = 2 ... 1.0000 ... 1.0000 ... 0.9999 ... 0.9998

x = 3 ……... 1.0000 ... 1.0000

---

p = ….. 0.05 …... 0.06 …... 0.07 …... 0.08

---

x = 0 ... 0.8145 ... 0.7807 ... 0.7481 ... 0.7164

x = 1 ... 0.9860 ... 0.9801 ... 0.9733 ... 0.9656

x = 2 ... 0.9995 ... 0.9992 ... 0.9987 ... 0.9981

x = 3 ... 1.0000 ... 1.0000 ... 1.0000 ... 1.0000

---

p = 0.09 – 0.20 is on the next page

n = 4 continued

p = ... 0.09 ..... 0.10 ..... 0.15 ..... 0.20

x = 0	0.6857	0.6561	0.5220	0.4096
x = 1	0.9570	0.9477	0.8905	0.8192
x = 2	0.9973	0.9963	0.9880	0.9728
x = 3	0.9999	0.9999	0.9995	0.9984
x = 4	1.0000	1.0000	1.0000	1.0000

p = ... 0.25 ..... 0.30 ..... 0.35 ..... 0.40

x = 0	0.3164	0.2401	0.1785	0.1296
x = 1	0.7383	0.6517	0.5630	0.4752
x = 2	0.9492	0.9163	0.8735	0.8208
x = 3	0.9961	0.9919	0.9850	0.9744
x = 4	1.0000	1.0000	1.0000	1.0000

p = 0.45 – 0.50 is on the next page

(Turn over)

n = 4 continued

p = ……. 0.45 ..... 0.50

---

x = 0 ... 0.0915 ... 0.0625

x = 1 ... 0.3910 ... 0.3125

x = 2 ... 0.7585 ... 0.6875

x = 3 ... 0.9590 ... 0.9375

x = 4 ... 1.0000 ... 1.0000

---

n = 5 is on the next page

n = 5

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.9510 ... 0.9039 ... 0.8587 ... 0.8154

x = 1 ... 0.9990 ... 0.9962 ... 0.9915 ... 0.9852

x = 2 ... 1.0000 ... 0.9999 ... 0.9997 ... 0.9994

x = 3 ..... 1.0000 ... 1.0000 ... 1.0000

---

p = ... 0.05 ..... 0.06 ..... 0.07 ..... 0.08

---

x = 0 ... 0.7738 ... 0.7339 ... 0.6957 ... 0.6591

x = 1 ... 0.9774 ... 0.9681 ... 0.9575 ... 0.9456

x = 2 ... 0.9988 ... 0.9980 ... 0.9969 ... 0.9955

x = 3 ... 1.0000 ... 0.9999 ... 0.9999 ... 0.9998

x = 4 ..... 1.0000 ... 1.0000 ... 1.0000

---

p = 0.09 – 0.20 is on the next page

n = 5 continued

p = ... 0.09 ..... 0.10 ..... 0.15 ..... 0.20

---

x = 0 ... 0.6240 ... 0.5905 ... 0.4437 ... 0.3277

x = 1 ... 0.9326 ... 0.9185 ... 0.8352 ... 0.7373

x = 2 ... 0.9937 ... 0.9914 ... 0.9734 ... 0.9421

x = 3 ... 0.9997 ... 0.9995 ... 0.9978 ... 0.9933

x = 4 ... 1.0000 ... 1.0000 ... 0.9999 ... 0.9997

x = 5 ..... 1.0000 ... 1.0000

---

p = ... 0.25 ..... 0.30 ..... 0.35 ..... 0.40

---

x = 0 ... 0.2373 ... 0.1681 ... 0.1160 ... 0.0778

x = 1 ... 0.6328 ... 0.5282 ... 0.4284 ... 0.3370

x = 2 ... 0.8965 ... 0.8369 ... 0.7648 ... 0.6826

x = 3 ... 0.9844 ... 0.9692 ... 0.9460 ... 0.9130

x = 4 ... 0.9990 ... 0.9976 ... 0.9947 ... 0.9898

x = 5 ... 1.0000 ... 1.0000 ... 1.0000 ... 1.0000

---

p = 0.45 – 0.50 is on the next page

(Turn over)

n = 5 continued

p = ... 0.45 ..... 0.50

---

x = 0 ... 0.0503 ... 0.0313

x = 1 ... 0.2562 ... 0.1875

x = 2 ... 0.5931 ... 0.5000

x = 3 ... 0.8688 ... 0.8125

x = 4 ... 0.9815 ... 0.9688

x = 5 ... 1.0000 ... 1.0000

---

n = 6 is on the next page

n = 6

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.9415 ... 0.8858 ... 0.8330 ... 0.7828

x = 1 ... 0.9985 ... 0.9943 ... 0.9875 ... 0.9784

x = 2 ... 1.0000 ... 0.9998 ... 0.9995 ... 0.9988

x = 3 ..... 1.0000 ... 1.0000 ... 1.0000

---

p = ... 0.05 ..... 0.06 ..... 0.07 ..... 0.08

---

x = 0 ... 0.7351 ... 0.6899 ... 0.6470 ... 0.6064

x = 1 ... 0.9672 ... 0.9541 ... 0.9392 ... 0.9227

x = 2 ... 0.9978 ... 0.9962 ... 0.9942 ... 0.9915

x = 3 ... 0.9999 ... 0.9998 ... 0.9997 ... 0.9995

x = 4 ... 1.0000 ... 1.0000 ... 1.0000 ... 1.0000

---

p = 0.09 – 0.20 is on the next page

(Turn over)

n = 6 continued

p = ….. 0.09 ..... 0.10 …... 0.15 ..... 0.20
x = 0 ... 0.5679 ... 0.5314 ... 0.3771 ... 0.2621
x = 1 ... 0.9048 ... 0.8857 ... 0.7765 ... 0.6554
x = 2 ... 0.9882 ... 0.9842 ... 0.9527 ... 0.9011
x = 3 ... 0.9992 ... 0.9987 ... 0.9941 ... 0.9830
x = 4 ... 1.0000 ... 0.9999 ... 0.9996 ... 0.9984
x = 5 ……. 1.0000 ... 1.0000 … 0.9999
x = 6 ……. 1.0000

p = 0.25 – 0.40 is on the next page

n = 6 continued

p = ... 0.25 ..... 0.30 …... 0.35 …... 0.40
x = 0 ... 0.1780 ... 0.1176 ... 0.0754 ... 0.0467
x = 1 ... 0.5339 ... 0.4202 ... 0.3191 ... 0.2333
x = 2 ... 0.8306 ... 0.7443 ... 0.6471 ... 0.5443
x = 3 ... 0.9624 ... 0.9295 ... 0.8826 ... 0.8208
x = 4 ... 0.9954 ... 0.9891 ... 0.9777 ... 0.9590
x = 5 ... 0.9998 ... 0.9993 ... 0.9982 ... 0.9959
x = 6 ... 1.0000 ... 1.0000 ... 1.0000 ... 1.0000

p = 0.45 – 0.50 is on the next page

n = 6 continued

p = ... 0.45 ..... 0.50

---

x = 0 ... 0.0277 ... 0.0156

x = 1 ... 0.1636 ... 0.1094

x = 2 ... 0.4415 ... 0.3438

x = 3 ... 0.7447 ... 0.6563

x = 4 ... 0.9308 ... 0.8906

x = 5 ... 0.9917 ... 0.9844

x = 6 ... 1.0000 ... 1.0000

---

n = 7 is on the next page

n = 7

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.9321 ... 0.8681 ... 0.8080 ... 0.7514

x = 1 ... 0.9980 ... 0.9921 ... 0.9829 ... 0.9706

x = 2 ... 1.0000 ... 0.9997 ... 0.9991 ... 0.9980

x = 3 ……. 1.0000 ... 1.0000 ... 0.9999

x = 4 ..... 1.0000

---

p = ... 0.05 ..... 0.06 ..... 0.07 ..... 0.08

---

x = 0 ... 0.6983 ... 0.6485 ... 0.6017 ... 0.5578

x = 1 ... 0.9556 ... 0.9382 ... 0.9187 ... 0.8974

x = 2 ... 0.9962 ... 0.9937 ... 0.9903 ... 0.9860

x = 3 ... 0.9998 ... 0.9996 ... 0.9993 ... 0.9988

x = 4 ... 1.0000 ... 1.0000 ... 1.0000 … 0.9999

x = 5 ..... 1.0000

---

p = 0.09 – 0.20 **is on the next page**

n = 7 continued

p =	0.09	0.10	0.15	0.20
x = 0	0.5168	0.4783	0.3206	0.2097
x = 1	0.8745	0.8503	0.7166	0.5767
x = 2	0.9807	0.9743	0.9262	0.8520
x = 3	0.9982	0.9973	0.9879	0.9667
x = 4	0.9999	0.9998	0.9988	0.9953
x = 5	1.0000	1.0000	0.9999	0.9996
x = 6	.....	.....	1.0000	1.0000

p = 0.25 – 0.40 is on the next page

n = 7 continued

p = ... 0.25 ..... 0.30 ..... 0.35 ..... 0.40
x = 0 ... 0.1335 ... 0.0824 ... 0.0490 ... 0.0280
x = 1 ... 0.4449 ... 0.3294 ... 0.2338 ... 0.1586
x = 2 ... 0.7564 ... 0.6471 ... 0.5323 ... 0.4199
x = 3 ... 0.9294 ... 0.8740 ... 0.8002 ... 0.7102
x = 4 ... 0.9871 ... 0.9712 ... 0.9444 ... 0.9037
x = 5 ... 0.9987 ... 0.9962 ... 0.9910 ... 0.9812
x = 6 ... 0.9999 ... 0.9998 ... 0.9994 ... 0.9984
x = 7 ... 1.0000 ... 1.0000 ... 1.0000 ... 1.0000

p = 0.45 – 0.50 is on the next page

n = 7 continued

p = ... 0.45 ..... 0.50

---

x = 0 ... 0.0152 ... 0.0078

x = 1 ... 0.1024 ... 0.0625

x = 2 ... 0.3164 ... 0.2266

x = 3 ... 0.6083 ... 0.5000

x = 4 ... 0.8471 ... 0.7734

x = 5 ... 0.9643 ... 0.9375

x = 6 ... 0.9963 ... 0.9922

x = 7 ... 1.0000 ... 1.0000

---

n = 8 is on the next page

n = 8

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.9227 ... 0.8508 ... 0.7837 ... 0.7214

x = 1 ... 0.9973 ... 0.9897 ... 0.9777 ... 0.9619

x = 2 ... 0.9999 ... 0.9996 ... 0.9987 ... 0.9969

x = 3 … 1.0000 ... 1.0000 ... 0.9999 ... 0.9998

x = 4 ..... 1.0000 ... 1.0000

---

p = ... 0.05 ..... 0.06 ..... 0.07 ..... 0.08

---

x = 0 ... 0.6634 ... 0.6096 ... 0.5596 ... 0.5132

x = 1 ... 0.9428 ... 0.9208 ... 0.8965 ... 0.8702

x = 2 ... 0.9942 ... 0.9904 ... 0.9853 ... 0.9789

x = 3 ... 0.9996 ... 0.9993 ... 0.9987 ... 0.9978

x = 4 ... 1.0000 ... 1.0000 ... 0.9999 ... 0.9999

x = 5 ..... 1.0000 ... 1.0000

---

p = 0.09 – 0.20 is on the next page

(Turn over)

n = 8 continued

p = ... 0.09 ..... 0.10 ..... 0.15 ..... 0.20
x = 0 ... 0.4703 ... 0.4305 ... 0.2725 ... 0.1678
x = 1 ... 0.8423 ... 0.8131 ... 0.6572 ... 0.5033
x = 2 ... 0.9711 ... 0.9619 ... 0.8948 ... 0.7969
x = 3 ... 0.9966 ... 0.9950 ... 0.9786 ... 0.9437
x = 4 ... 0.9997 ... 0.9996 ... 0.9971 ... 0.9896
x = 5 ... 1.0000 ... 1.0000 ... 0.9998 ... 0.9988
x = 6 ..... 1.0000 ... 0.9999
x = 7 ..... 1.0000

p = 0.25 – 0.40 is on the next page

n = 8 continued

p = ... 0.25 ..... 0.30 ..... 0.35 ..... 0.40
x = 0 ... 0.1001 ... 0.0576 ... 0.0319 ... 0.0168
x = 1 ... 0.3671 ... 0.2553 ... 0.1691 ... 0.1064
x = 2 ... 0.6785 ... 0.5518 ... 0.4278 ... 0.3154
x = 3 ... 0.8862 ... 0.8059 ... 0.7064 ... 0.5941
x = 4 ... 0.9727 ... 0.9420 ... 0.8939 ... 0.8263
x = 5 ... 0.9958 ... 0.9887 ... 0.9747 ... 0.9502
x = 6 ... 0.9996 ... 0.9987 ... 0.9964 ... 0.9915
x = 7 ... 1.0000 ... 0.9999 ... 0.9998 ... 0.9993
x = 8 ..... 1.0000 ... 1.0000 ... 1.0000

p = 0.45 – 0.50 is on the next page

n = 8 continued

p = ... 0.45 ..... 0.50

---

x = 0 ... 0.0084 ... 0.0039

x = 1 ... 0.0632 ... 0.0352

x = 2 ... 0.2201 ... 0.1445

x = 3 ... 0.4770 ... 0.3633

x = 4 ... 0.7396 ... 0.6367

x = 5 ... 0.9115 ... 0.8555

x = 6 ... 0.9819 ... 0.9648

x = 7 ... 0.9983 ... 0.9961

x = 8 ... 1.0000 ... 1.0000

---

n = 9 is on the next page

n = 9

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.9135 ... 0.8337 ... 0.7602 ... 0.6925

x = 1 ... 0.9966 ... 0.9869 ... 0.9718 ... 0.9522

x = 2 ... 0.9999 ... 0.9994 ... 0.9980 ... 0.9955

x = 3 ... 1.0000 ... 1.0000 ... 0.9999 ... 0.9997

x = 4 ..... 1.0000 ... 1.0000

---

p = ... 0.05 ..... 0.06 ..... 0.07 ..... 0.08

---

x = 0 ... 0.6302 ... 0.5730 ... 0.5204 ... 0.4722

x = 1 ... 0.9288 ... 0.9022 ... 0.8729 ... 0.8417

x = 2 ... 0.9916 ... 0.9862 ... 0.9791 ... 0.9702

x = 3 ... 0.9994 ... 0.9987 ... 0.9977 ... 0.9963

x = 4 ... 1.0000 ... 0.9999 ... 0.9998 ... 0.9997

x = 5 ..... 1.0000 ... 1.0000 ... 1.0000

---

p = 0.09 – 0.20 is on the next page

(Turn over)

n = 9 continued

p = ... 0.09 ..... 0.10 ..... 0.15 ..... 0.20
x = 0 ... 0.4279 ... 0.3874 ... 0.2316 ... 0.1342
x = 1 ... 0.8088 ... 0.7748 ... 0.5995 ... 0.4362
x = 2 ... 0.9595 ... 0.9470 ... 0.8591 ... 0.7382
x = 3 ... 0.9943 ... 0.9917 ... 0.9661 ... 0.9144
x = 4 ... 0.9995 ... 0.9991 ... 0.9944 ... 0.9804
x = 5 ... 1.0000 ... 0.9999 ... 0.9994 ... 0.9969
x = 6 ..... 1.0000 ... 1.0000 ... 0.9997
x = 7 ..... 1.0000

p = 0.25 – 0.40 is on the next page

n = 9 continued

p = ... 0.25 …... 0.30 ..... 0.35 ..... 0.40
x = 0 ... 0.0751 ... 0.0404 ... 0.0207 ... 0.0101
x = 1 ... 0.3003 ... 0.1960 ... 0.1211 ... 0.0705
x = 2 ... 0.6007 ... 0.4628 ... 0.3373 ... 0.2318
x = 3 ... 0.8343 ... 0.7297 ... 0.6089 ... 0.4826
x = 4 ... 0.9511 ... 0.9012 ... 0.8283 ... 0.7334
x = 5 ... 0.9900 ... 0.9747 ... 0.9464 ... 0.9006
x = 6 ... 0.9987 ... 0.9957 ... 0.9888 ... 0.9750
x = 7 ... 0.9999 ... 0.9996 ... 0.9986 ... 0.9962
x = 8 ... 1.0000 ... 1.0000 ... 0.9999 ... 0.9997
x = 9 ……... 1.0000 ... 1.0000

p = 0.45 – 0.50 is on the next page

n = 9 continued

p = ... 0.45 ..... 0.50

---

x = 0 ... 0.0046 ... 0.0020

x = 1 ... 0.0385 ... 0.0195

x = 2 ... 0.1495 ... 0.0898

x = 3 ... 0.3614 ... 0.2539

x = 4 ... 0.6214 ... 0.5000

x = 5 ... 0.8342 ... 0.7461

x = 6 ... 0.9502 ... 0.9102

x = 7 ... 0.9909 ... 0.9805

x = 8 ... 0.9992 ... 0.9980

x = 9 ... 1.0000 ... 1.0000

---

n = 10 is on the next page

n = 10

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

x = 0	0.9044	0.8171	0.7374	0.6648
x = 1	0.9957	0.9838	0.9655	0.9418
x = 2	0.9999	0.9991	0.9972	0.9938
x = 3	1.0000	1.0000	0.9999	0.9996
x = 4	.....	.....	1.0000	1.0000

p = ... 0.05 ..... 0.06 ..... 0.07 ..... 0.08

x = 0	0.5987	0.5386	0.4840	0.4344
x = 1	0.9139	0.8824	0.8483	0.8121
x = 2	0.9885	0.9812	0.9717	0.9599
x = 3	0.9990	0.9980	0.9964	0.9942
x = 4	0.9999	0.9998	0.9997	0.9994
x = 5	1.0000	1.0000	1.0000	1.0000

p = 0.09 – 0.20 is on the next page

(Turn over)

n = 10 continued

p = ... 0.09 ..... 0.10 ..... 0.15 ..... 0.20
x = 0 ... 0.3894 ... 0.3487 ... 0.1969 ... 0.1074
x = 1 ... 0.7746 ... 0.7361 ... 0.5443 ... 0.3758
x = 2 ... 0.9460 ... 0.9298 ... 0.8202 ... 0.6778
x = 3 ... 0.9912 ... 0.9872 ... 0.9500 ... 0.8791
x = 4 ... 0.9990 ... 0.9984 ... 0.9901 ... 0.9672
x = 5 ... 0.9999 ... 0.9999 ... 0.9986 ... 0.9936
x = 6 ... 1.0000 ... 1.0000 ... 0.9999 ... 0.9991
x = 7 ..... 1.0000 ... 0.9999
x = 8 ..... 1.0000

p = 0.25 – 0.35 is on the next page

n = 10 continued

p = ... 0.25 ..... 0.30 ..... 0.35

---

x = 0 ... 0.0563 ... 0.0282 ... 0.0135

x = 1 ... 0.2440 ... 0.1493 ... 0.0860

x = 2 ... 0.5256 ... 0.3828 ... 0.2616

x = 3 ... 0.7759 ... 0.6496 ... 0.5138

x = 4 ... 0.9219 ... 0.8497 ... 0.7515

x = 5 ... 0.9803 ... 0.9527 ... 0.9051

x = 6 ... 0.9965 ... 0.9894 ... 0.9740

x = 7 ... 0.9996 ... 0.9984 ... 0.9952

x = 8 ... 1.0000 ... 0.9999 ... 0.9995

x = 9 ..... 1.0000 ... 1.0000

---

p = 0.40 – 0.50 is on the next page

n = 10 continued

p = ... 0.40 ..... 0.45 ..... 0.50

---

x = 0 ..... 0.0060 ... 0.0025 ... 0.0010

x = 1 ..... 0.0464 ... 0.0233 ... 0.0107

x = 2 ..... 0.1673 ... 0.0996 ... 0.0547

x = 3 ..... 0.3823 ... 0.2660 ... 0.1719

x = 4 ..... 0.6331 ... 0.5044 ... 0.3770

x = 5 ..... 0.8338 ... 0.7384 ... 0.6230

x = 6 ..... 0.9452 ... 0.8980 ... 0.8281

x = 7 ..... 0.9877 ... 0.9726 ... 0.9453

x = 8 ..... 0.9983 ... 0.9955 ... 0.9893

x = 9 ..... 0.9999 ... 0.9997 ... 0.9990

x = 10 ... 1.0000 ... 1.0000 ... 1.0000

---

n = 11 is on the next page

n = 11

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.8953 ... 0.8007 ... 0.7153 ... 0.6382

x = 1 ... 0.9948 ... 0.9805 ... 0.9587 ... 0.9308

x = 2 ... 0.9998 ... 0.9988 ... 0.9963 ... 0.9917

x = 3 ... 1.0000 ... 1.0000 ... 0.9998 ... 0.9993

x = 4 ..... 1.0000 ... 1.0000

---

p = ... 0.05 ..... 0.06 ..... 0.07 ..... 0.08

---

x = 0 ... 0.5688 ... 0.5063 ... 0.4501 ... 0.3996

x = 1 ... 0.8981 ... 0.8618 ... 0.8228 ... 0.7819

x = 2 ... 0.9848 ... 0.9752 ... 0.9630 ... 0.9481

x = 3 ... 0.9984 ... 0.9970 ... 0.9947 ... 0.9915

x = 4 ... 0.9999 ... 0.9997 ... 0.9995 ... 0.9990

x = 5 ... 1.0000 ... 1.0000 ... 1.0000 ... 0.9999

x = 6 ..... 1.0000

---

p = 0.09 – 0.20 is on the next page

(Turn over)

n = 11 continued

p = ….. 0.09 ..... 0.10 ..... 0.15 ..... 0.20

---

x = 0 ... 0.3544 ... 0.3138 ... 0.1673 ... 0.0859

x = 1 ... 0.7399 ... 0.6974 ... 0.4922 ... 0.3221

x = 2 ... 0.9305 ... 0.9104 ... 0.7788 ... 0.6174

x = 3 ... 0.9871 ... 0.9815 ... 0.9306 ... 0.8389

x = 4 ... 0.9983 ... 0.9972 ... 0.9841 ... 0.9496

x = 5 ... 0.9998 ... 0.9997 ... 0.9973 ... 0.9883

x = 6 ... 1.0000 ... 1.0000 ... 0.9997 ... 0.9980

x = 7 ……..…… 1.0000 ... 0.9998

x = 8 …… 1.0000

---

p = 0.25 – 0.35 is on the next page

n = 11 continued

p = ... 0.25 ..... 0.30 ..... 0.35

---

x = 0 ..... 0.0422 ... 0.0198 ... 0.0088

x = 1 ..... 0.1971 ... 0.1130 ... 0.0606

x = 2 ..... 0.4552 ... 0.3127 ... 0.2001

x = 3 ..... 0.7133 ... 0.5696 ... 0.4256

x = 4 ..... 0.8854 ... 0.7897 ... 0.6683

x = 5 ..... 0.9657 ... 0.9218 ... 0.8513

x = 6 ..... 0.9924 ... 0.9784 ... 0.9499

x = 7 ..... 0.9988 ... 0.9957 ... 0.9878

x = 8 ..... 0.9999 ... 0.9994 ... 0.9980

x = 9 ..... 1.0000 ... 1.0000 ... 0.9998

x = 10 ..... 1.0000

---

p = 0.40 – 0.50 is on the next page

n = 11 continued

p = ……. 0.40 …... 0.45 …... 0.50

---

x = 0 ..... 0.0036 ... 0.0014 ... 0.0005

x = 1 ..... 0.0302 ... 0.0139 ... 0.0059

x = 2 ..... 0.1189 ... 0.0652 ... 0.0327

x = 3 ..... 0.2963 ... 0.1911 ... 0.1133

x = 4 ..... 0.5328 ... 0.3971 ... 0.2744

x = 5 ..... 0.7535 ... 0.6331 ... 0.5000

x = 6 ..... 0.9006 ... 0.8262 ... 0.7256

x = 7 ..... 0.9707 ... 0.9390 ... 0.8867

x = 8 ..... 0.9941 ... 0.9852 ... 0.9673

x = 9 ..... 0.9993 ... 0.9978 ... 0.9941

x = 10 ... 1.0000 ... 0.9998 ... 0.9995

x = 11 ……... 1.0000

---

n = 12 is on the next page

n = 12

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.8864 ... 0.7847 ... 0.6938 ... 0.6127

x = 1 ... 0.9938 ... 0.9769 ... 0.9514 ... 0.9191

x = 2 ... 0.9998 ... 0.9985 ... 0.9952 ... 0.9893

x = 3 ... 1.0000 ... 0.9999 ... 0.9997 ... 0.9990

x = 4 ..... 1.0000 ... 1.0000 ... 0.9999

x = 5 ..... 1.0000

---

p = ... 0.05 ..... 0.06 ..... 0.07 ..... 0.08

---

x = 0 ... 0.5404 ... 0.4759 ... 0.4186 ... 0.3677

x = 1 ... 0.8816 ... 0.8405 ... 0.7967 ... 0.7513

x = 2 ... 0.9804 ... 0.9684 ... 0.9532 ... 0.9348

x = 3 ... 0.9978 ... 0.9957 ... 0.9925 ... 0.9880

x = 4 ... 0.9998 ... 0.9996 ... 0.9991 ... 0.9984

x = 5 ... 1.0000 ... 1.0000 ... 0.9999 ... 0.9998

x = 6 ..... 1.0000 ... 1.0000

(Turn over)

n = 12 continued

p = ... 0.09 ..... 0.10 ..... 0.15 ..... 0.20

---

x = 0 ... 0.3225 ... 0.2824 ... 0.1422 ... 0.0687

x = 1 ... 0.7052 ... 0.6590 ... 0.4435 ... 0.2749

x = 2 ... 0.9134 ... 0.8891 ... 0.7358 ... 0.5583

x = 3 ... 0.9820 ... 0.9744 ... 0.9078 ... 0.7946

x = 4 ... 0.9973 ... 0.9957 ... 0.9761 ... 0.9274

x = 5 ... 0.9997 ... 0.9995 ... 0.9954 ... 0.9806

x = 6 ... 1.0000 ... 0.9999 ... 0.9993 ... 0.9961

x = 7 ..... 1.0000 ... 0.9999 ... 0.9994

x = 8 ..... 1.0000 ... 0.9999

x = 9 ..... 1.0000

---

p = 0.25 – 0.35 is on the next page

n = 12 continued

p = ... 0.25 ..... 0.30 ..... 0.35

---

x = 0 ..... 0.0317 ... 0.0138 ... 0.0057

x = 1 ..... 0.1584 ... 0.0850 ... 0.0424

x = 2 ..... 0.3907 ... 0.2528 ... 0.1513

x = 3 ..... 0.6488 ... 0.4925 ... 0.3467

x = 4 ..... 0.8424 ... 0.7237 ... 0.5833

x = 5 ..... 0.9456 ... 0.8822 ... 0.7873

x = 6 ..... 0.9857 ... 0.9614 ... 0.9154

x = 7 ..... 0.9972 ... 0.9905 ... 0.9745

x = 8 ..... 0.9996 ... 0.9983 ... 0.9944

x = 9 ..... 1.0000 ... 0.9998 ... 0.9992

x = 10 ..... 1.0000 ... 0.9999

x = 11 ..... 1.0000

---

p = 0.40 – 0.50 is on the next page

n = 12 continued

p = ... 0.40 ..... 0.45 ..... 0.50

---

x = 0 ..... 0.0022 ... 0.0008 ... 0.0002

x = 1 ..... 0.0196 ... 0.0083 ... 0.0032

x = 2 ..... 0.0834 ... 0.0421 ... 0.0193

x = 3 ..... 0.2253 ... 0.1345 ... 0.0730

x = 4 ..... 0.4382 ... 0.3044 ... 0.1938

x = 5 ..... 0.6652 ... 0.5269 ... 0.3872

x = 6 ..... 0.8418 ... 0.7393 ... 0.6128

x = 7 ..... 0.9427 ... 0.8883 ... 0.8062

x = 8 ..... 0.9847 ... 0.9644 ... 0.9270

x = 9 ..... 0.9972 ... 0.9921 ... 0.9807

x = 10 ... 0.9997 ... 0.9989 ... 0.9968

x = 11 ... 1.0000 ... 0.9999 ... 0.9998

x = 12 ..... 1.0000 ... 1.0000

---

n = 13 is on the next page

n = 13

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

x = 0	0.8775	0.7690	0.6730	0.5882
x = 1	0.9928	0.9730	0.9436	0.9068
x = 2	0.9997	0.9980	0.9938	0.9865
x = 3	1.0000	0.9999	0.9995	0.9986
x = 4	.....	1.0000	1.0000	0.9999
x = 5	.....	.....	.....	1.0000

p = ... 0.05 ..... 0.06 ..... 0.07 ..... 0.08

x = 0	0.5133	0.4474	0.3893	0.3383
x = 1	0.8646	0.8186	0.7702	0.7206
x = 2	0.9755	0.9608	0.9422	0.9201
x = 3	0.9969	0.9940	0.9897	0.9837
x = 4	0.9997	0.9993	0.9987	0.9976
x = 5	1.0000	0.9999	0.9999	0.9997
x = 6	.....	1.0000	1.0000	1.0000

(Turn over)

n = 13 continued

p = ... 0.09 ..... 0.10 ..... 0.15 ..... 0.20

---

x = 0 ... 0.2935 ... 0.2542 ... 0.1209 ... 0.0550

x = 1 ... 0.6707 ... 0.6213 ... 0.3983 ... 0.2336

x = 2 ... 0.8946 ... 0.8661 ... 0.6920 ... 0.5017

x = 3 ... 0.9758 ... 0.9658 ... 0.8820 ... 0.7473

x = 4 ... 0.9959 ... 0.9935 ... 0.9658 ... 0.9009

x = 5 ... 0.9995 ... 0.9991 ... 0.9925 ... 0.9700

x = 6 ... 0.9999 ... 0.9999 ... 0.9987 ... 0.9930

x = 7 ... 1.0000 ... 1.0000 ... 0.9998 ... 0.9988

x = 8 ..... 1.0000 ... 0.9998

x = 9 ..... 1.0000

---

p = 0.25 – 0.35 is on the next page

n = 13 continued

p = ... 0.25 …... 0.30 ..... 0.35

---

x = 0 ..... 0.0238 ... 0.0097 ... 0.0037

x = 1 ..... 0.1267 ... 0.0637 ... 0.0296

x = 2 ..... 0.3326 ... 0.2025 ... 0.1132

x = 3 ..... 0.5843 ... 0.4206 ... 0.2783

x = 4 ..... 0.7940 ... 0.6543 ... 0.5005

x = 5 ..... 0.9198 ... 0.8346 ... 0.7159

x = 6 ..... 0.9757 ... 0.9376 ... 0.8705

x = 7 ..... 0.9944 ... 0.9818 ... 0.9538

x = 8 ..... 0.9990 ... 0.9960 ... 0.9874

x = 9 ..... 0.9999 ... 0.9993 ... 0.9975

x = 10 ... 1.0000 ... 0.9999 ... 0.9997

x = 11 ..... 1.0000 ... 1.0000

---

p = 0.40 – 0.50 is on the next page

n = 13 continued

p = ... 0.40 ..... 0.45 ..... 0.50

---

x = 0 ..... 0.0013 ... 0.0004 ... 0.0001

x = 1 ..... 0.0126 ... 0.0049 ... 0.0017

x = 2 ..... 0.0579 ... 0.0269 ... 0.0112

x = 3 ..... 0.1686 ... 0.0929 ... 0.0461

x = 4 ..... 0.3530 ... 0.2279 ... 0.1334

x = 5 ..... 0.5744 ... 0.4268 ... 0.2905

x = 6 ..... 0.7712 ... 0.6437 ... 0.5000

x = 7 ..... 0.9023 ... 0.8212 ... 0.7095

x = 8 ..... 0.9679 ... 0.9302 ... 0.8666

x = 9 ..... 0.9922 ... 0.9797 ... 0.9539

x = 10 ... 0.9987 ... 0.9959 ... 0.9888

x = 11 ... 0.9999 ... 0.9995 ... 0.9983

x = 12 ... 1.0000 ... 1.0000 ... 0.9999

x = 13 ..... 1.0000

---

n = 14 is on the next page

n = 14

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.8687 ... 0.7536 ... 0.6528 ... 0.5647

x = 1 ... 0.9916 ... 0.9690 ... 0.9355 ... 0.8941

x = 2 ... 0.9997 ... 0.9975 ... 0.9923 ... 0.9833

x = 3 ... 1.0000 ... 0.9999 ... 0.9994 ... 0.9981

x = 4 ..... 1.0000 ... 1.0000 ... 0.9998

x = 5 ..... 1.0000

---

p = ... 0.05 ..... 0.06 ..... 0.07 ..... 0.08

---

x = 0 ... 0.4877 ... 0.4205 ... 0.3620 ... 0.3112

x = 1 ... 0.8470 ... 0.7963 ... 0.7436 ... 0.6900

x = 2 ... 0.9699 ... 0.9522 ... 0.9302 ... 0.9042

x = 3 ... 0.9958 ... 0.9920 ... 0.9864 ... 0.9786

x = 4 ... 0.9996 ... 0.9990 ... 0.9980 ... 0.9965

x = 5 ... 1.0000 ... 0.9999 ... 0.9998 ... 0.9996

x = 6 ..... 1.0000 ... 1.0000 ... 1.0000

(Turn over)

n = 14 continued

p = ... 0.09 ..... 0.10 ..... 0.15 ..... 0.20

---

x = 0 ... 0.2670 ... 0.2288 ... 0.1028 ... 0.0440

x = 1 ... 0.6368 ... 0.5846 ... 0.3567 ... 0.1979

x = 2 ... 0.8745 ... 0.8416 ... 0.6479 ... 0.4481

x = 3 ... 0.9685 ... 0.9559 ... 0.8535 ... 0.6982

x = 4 ... 0.9941 ... 0.9908 ... 0.9533 ... 0.8702

x = 5 ... 0.9992 ... 0.9985 ... 0.9885 ... 0.9561

x = 6 ... 0.9999 ... 0.9998 ... 0.9978 ... 0.9884

x = 7 ... 1.0000 ... 1.0000 ... 0.9997 ... 0.9976

x = 8 ..... 1.0000 ... 0.9996

x = 9 ..... 1.0000

---

p = 0.25 – 0.35 is on the next page

n = 14 continued

p = ... 0.25 …... 0.30 ..... 0.35

---

x = 0 ..... 0.0178 ... 0.0068 ... 0.0024

x = 1 ..... 0.1010 ... 0.0475 ... 0.0205

x = 2 ..... 0.2811 ... 0.1608 ... 0.0839

x = 3 ..... 0.5213 ... 0.3552 ... 0.2205

x = 4 ..... 0.7415 ... 0.5842 ... 0.4227

x = 5 ..... 0.8883 ... 0.7805 ... 0.6405

x = 6 ..... 0.9617 ... 0.9067 ... 0.8164

x = 7 ..... 0.9897 ... 0.9685 ... 0.9247

x = 8 ..... 0.9978 ... 0.9917 ... 0.9757

x = 9 ..... 0.9997 ... 0.9983 ... 0.9940

x = 10 ... 1.0000 ... 0.9998 ... 0.9989

x = 11 ..... 1.0000 ... 0.9999

x = 12 ..... 1.0000

---

p = 0.40 – 0.50 is on the next page

(Turn over)

n = 14 continued

p = ... 0.40 ..... 0.45 ..... 0.50

---

x = 0 ..... 0.0008 ... 0.0002 ... 0.0001

x = 1 ..... 0.0081 ... 0.0029 ... 0.0009

x = 2 ..... 0.0398 ... 0.0170 ... 0.0065

x = 3 ..... 0.1234 ... 0.0632 ... 0.0287

x = 4 ..... 0.2793 ... 0.1672 ... 0.0898

x = 5 ..... 0.4859 ... 0.3373 ... 0.2120

x = 6 ..... 0.6925 ... 0.5461 ... 0.3953

x = 7 ..... 0.8499 ... 0.7414 ... 0.6047

x = 8 ..... 0.9417 ... 0.8811 ... 0.7880

x = 9 ..... 0.9825 ... 0.9574 ... 0.9102

x = 10 ... 0.9961 ... 0.9886 ... 0.9713

x = 11 ... 0.9994 ... 0.9978 ... 0.9935

x = 12 ... 0.9999 ... 0.9997 ... 0.9991

x = 13 ... 1.0000 ... 1.0000 ... 0.9999

x = 14 ..... 1.0000

---

n = 15 is on the next page

n = 15

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.8601 ... 0.7386 ... 0.6333 ... 0.5421

x = 1 ... 0.9904 ... 0.9647 ... 0.9270 ... 0.8809

x = 2 ... 0.9996 ... 0.9970 ... 0.9906 ... 0.9797

x = 3 ... 1.0000 ... 0.9998 ... 0.9992 ... 0.9976

x = 4 ..... 1.0000 ... 0.9999 ... 0.9998

x = 5 ..... 1.0000 ... 1.0000

---

p = 0.05 – 0.08 **is on the next page**

n = 15 continued

p = ... 0.05 ..... 0.06 ..... 0.07 ..... 0.08

---

x = 0 ... 0.4633 ... 0.3953 ... 0.3367 ... 0.2863

x = 1 ... 0.8290 ... 0.7738 ... 0.7168 ... 0.6597

x = 2 ... 0.9638 ... 0.9429 ... 0.9171 ... 0.8870

x = 3 ... 0.9945 ... 0.9896 ... 0.9825 ... 0.9727

x = 4 ... 0.9994 ... 0.9986 ... 0.9972 ... 0.9950

x = 5 ... 0.9999 ... 0.9999 ... 0.9997 ... 0.9993

x = 6 ... 1.0000 ... 1.0000 ... 1.0000 ... 0.9999

x = 7 ..... 1.0000

---

p = 0.09 – 0.20 is on the next page

n = 15 continued

p = ... 0.09 ..... 0.10 ..... 0.15 ..... 0.20

---

x = 0 .... 0.2430 ... 0.2059 ... 0.0874 ... 0.0352

x = 1 .... 0.6035 ... 0.5490 ... 0.3186 ... 0.1671

x = 2 ..... 0.8531 ... 0.8159 ... 0.6042 ... 0.3980

x = 3 ..... 0.9601 ... 0.9444 ... 0.8227 ... 0.6482

x = 4 ..... 0.9918 ... 0.9873 ... 0.9383 ... 0.8358

x = 5 ..... 0.9987 ... 0.9978 ... 0.9832 ... 0.9389

x = 6 ..... 0.9998 ... 0.9997 ... 0.9964 ... 0.9819

x = 7 ..... 1.0000 ... 1.0000 ... 0.9994 ... 0.9958

x = 8 ..... 0.9999 ... 0.9992

x = 9 ..... 1.0000 ... 0.9999

x = 10 ..... 1.0000

---

p = 0.25 – 0.35 is on the next page

n = 15 continued

p = ……. 0.25 ……. 0.30 ……. 0.35

---

x = 0 ….. 0.0134 ... 0.0047 ... 0.0016

x = 1 ….. 0.0802 ... 0.0353 ... 0.0142

x = 2 ….. 0.2361 ... 0.1268 ... 0.0617

x = 3 ….. 0.4613 ... 0.2969 ... 0.1727

x = 4 ….. 0.6865 ... 0.5155 ... 0.3519

x = 5 ….. 0.8516 ... 0.7216 ... 0.5643

x = 6 ….. 0.9434 ... 0.8689 ... 0.7548

x = 7 ….. 0.9827 ... 0.9500 ... 0.8868

x = 8 ….. 0.9958 ... 0.9848 ... 0.9578

x = 9 ….. 0.9992 ... 0.9963 ... 0.9876

x = 10 ... 0.9999 ... 0.9993 ... 0.9972

x = 11 ... 1.0000 ... 0.9999 ... 0.9995

x = 12 ..... 1.0000 ... 0.9999

x = 13 ..... 1.0000

---

p = 0.40 – 0.50 is on the next page

(Turn over)

n = 15 continued

p = ……. 0.40 …... 0.45 …... 0.50

---

x = 0 ..... 0.0005 ... 0.0001 ... 0.0000

x = 1 ..... 0.0052 ... 0.0017 ... 0.0005

x = 2 ..... 0.0271 ... 0.0107 ... 0.0037

x = 3 ..... 0.0905 ... 0.0424 ... 0.0176

x = 4 ..... 0.2173 ... 0.1204 ... 0.0592

x = 5 ..... 0.4032 ... 0.2608 ... 0.1509

x = 6 ..... 0.6098 ... 0.4522 ... 0.3036

x = 7 ..... 0.7869 ... 0.6535 ... 0.5000

x = 8 ..... 0.9050 ... 0.8182 ... 0.6964

x = 9 ..... 0.9662 ... 0.9231 ... 0.8491

x = 10 ... 0.9907 ... 0.9745 ... 0.9408

x = 11 ... 0.9981 ... 0.9937 ... 0.9824

x = 12 ... 0.9997 ... 0.9989 ... 0.9963

x = 13 ... 1.0000 ... 0.9999 ... 0.9995

x = 14 ..... 1.0000 ... 1.0000

---

n = 20 is on the next page

(Turn over)

n = 20

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.8179 ... 0.6676 ... 0.5438 ... 0.4420

x = 1 ... 0.9831 ... 0.9401 ... 0.8802 ... 0.8103

x = 2 ... 0.9990 ... 0.9929 ... 0.9790 ... 0.9561

x = 3 ... 1.0000 ... 0.9994 ... 0.9973 ... 0.9926

x = 4 ..... 1.0000 ... 0.9997 ... 0.9990

x = 5 ..... 1.0000 ... 0.9999

x = 6 ..... 1.0000

---

p = 0.05 – 0.08 is on the next page

n = 20 continued

p =	0.05	0.06	0.07	0.08
x = 0	0.3585	0.2901	0.2342	0.1887
x = 1	0.7358	0.6605	0.5869	0.5169
x = 2	0.9245	0.8850	0.8390	0.7879
x = 3	0.9841	0.9710	0.9529	0.9294
x = 4	0.9974	0.9944	0.9893	0.9817
x = 5	0.9997	0.9991	0.9981	0.9962
x = 6	1.0000	0.9999	0.9997	0.9994
x = 7	.....	1.0000	1.0000	0.9999
x = 8	.....	.....	.....	1.0000

p = 0.09 – 0.20 is on the next page

n = 20 continued

p = ……. 0.09 ……. 0.10 ……. 0.15 ……. 0.20

---

x = 0 ….. 0.1516 ... 0.1216 ... 0.0388 ... 0.0115

x = 1 ….. 0.4516 ... 0.3917 ... 0.1756 ... 0.0692

x = 2 ….. 0.7334 ... 0.6769 ... 0.4049 ... 0.2061

x = 3 ….. 0.9007 ... 0.8670 ... 0.6477 ... 0.4114

x = 4 ….. 0.9710 ... 0.9568 ... 0.8298 ... 0.6296

x = 5 ….. 0.9932 ... 0.9887 ... 0.9327 ... 0.8042

x = 6 ….. 0.9987 ... 0.9976 ... 0.9781 ... 0.9133

x = 7 ….. 0.9998 ... 0.9996 ... 0.9941 ... 0.9679

x = 8 ….. 1.0000 ... 0.9999 ... 0.9987 ... 0.9900

x = 9 …… 1.0000 ... 0.9998 ... 0.9974

x = 10 …… 1.0000 ... 0.9994

x = 11 …….... 0.9999

x = 12 ……... 1.0000

---

p = 0.25 – 0.35 is on the next page

n = 20 continued

p = ... 0.25 ..... 0.30 ..... 0.35

---

x = 0 ..... 0.0032 ... 0.0008 ... 0.0002

x = 1 ..... 0.0243 ... 0.0076 ... 0.0021

x = 2 ..... 0.0913 ... 0.0355 ... 0.0121

x = 3 ..... 0.2252 ... 0.1071 ... 0.0444

x = 4 ..... 0.4148 ... 0.2375 ... 0.1182

x = 5 ..... 0.6172 ... 0.4164 ... 0.2454

x = 6 ..... 0.7858 ... 0.6080 ... 0.4166

x = 7 ..... 0.8982 ... 0.7723 ... 0.6010

x = 8 ..... 0.9591 ... 0.8867 ... 0.7624

x = 9 ..... 0.9861 ... 0.9520 ... 0.8782

x = 10 ... 0.9961 ... 0.9829 ... 0.9468

x = 11 ... 0.9991 ... 0.9949 ... 0.9804

x = 12 ... 0.9998 ... 0.9987 ... 0.9940

x = 13 ... 1.0000 ... 0.9997 ... 0.9985

x = 14 ..... 1.0000 ... 0.9997

x = 15 ..... 1.0000

(Turn over)

n = 20 continued

p = ……. 0.40 ……. 0.45 ……. 0.50

---

x = 0 ….. 0.0000 ... 0.0000 ... 0.0000

x = 1 ….. 0.0005 ... 0.0001 ... 0.0000

x = 2 ….. 0.0036 ... 0.0009 ... 0.0002

x = 3 ….. 0.0160 ... 0.0049 ... 0.0013

x = 4 ….. 0.0510 ... 0.0189 ... 0.0059

x = 5 ….. 0.1256 ... 0.0553 ... 0.0207

x = 6 ….. 0.2500 ... 0.1299 ... 0.0577

x = 7 ….. 0.4159 ... 0.2520 ... 0.1316

x = 8 ….. 0.5956 ... 0.4143 ... 0.2517

x = 9 ….. 0.7553 ... 0.5914 ... 0.4119

x = 10 ... 0.8725 ... 0.7507 ... 0.5881

x = 11 ... 0.9435 ... 0.8692 ... 0.7483

x = 12 ... 0.9790 ... 0.9420 ... 0.8684

x = 13 ... 0.9935 ... 0.9786 ... 0.9423

x = 14 ... 0.9984 ... 0.9936 ... 0.9793

(continued on the next page)

n = 20 continued

p = ... 0.40 ..... 0.45 ..... 0.50

---

x = 15 ... 0.9997 ... 0.9985 ... 0.9941

x = 16 ... 1.0000 ... 0.9997 ... 0.9987

x = 17 ..... 1.0000 ... 0.9998

x = 18 ..... 1.0000

---

n = 25 is on the next page

n = 25

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.7778 ... 0.6035 ... 0.4670 ... 0.3604

x = 1 ... 0.9742 ... 0.9114 ... 0.8280 ... 0.7358

x = 2 ... 0.9980 ... 0.9868 ... 0.9620 ... 0.9235

x = 3 ... 0.9999 ... 0.9986 ... 0.9938 ... 0.9835

x = 4 ... 1.0000 ... 0.9999 ... 0.9992 ... 0.9972

x = 5 ..... 1.0000 ... 0.9999 ... 0.9996

x = 6 ..... 1.0000 ... 1.0000

---

p = 0.05 – 0.08 is on the next page

n = 25 continued

p = ... 0.05 ..... 0.06 ..... 0.07 ..... 0.08

---

x = 0 ... 0.2774 ... 0.2129 ... 0.1630 ... 0.1224

x = 1 ... 0.6424 ... 0.5527 ... 0.4696 ... 0.3947

x = 2 ... 0.8729 ... 0.8129 ... 0.7466 ... 0.6768

x = 3 ... 0.9659 ... 0.9402 ... 0.9064 ... 0.8649

x = 4 ... 0.9928 ... 0.9850 ... 0.9726 ... 0.9549

x = 5 ... 0.9988 ... 0.9969 ... 0.9935 ... 0.9877

x = 6 ... 0.9998 ... 0.9995 ... 0.9987 ... 0.9972

x = 7 ... 1.0000 ... 0.9999 ... 0.9998 ... 0.9995

x = 8 ..... 1.0000 ... 1.0000 ... 0.9999

x = 9 ..... 1.0000

---

p = 0.09 – 0.20 is on the next page

n = 25 continued

p = ... 0.09 ..... 0.10 ..... 0.15 ..... 0.20

---

x = 0 ..... 0.0946 ... 0.0718 ... 0.0172 ... 0.0038

x = 1 ..... 0.3286 ... 0.2712 ... 0.0931 ... 0.0274

x = 2 ..... 0.6063 ... 0.5371 ... 0.2537 ... 0.0982

x = 3 ..... 0.8169 ... 0.7636 ... 0.4711 ... 0.2340

x = 4 ..... 0.9314 ... 0.9020 ... 0.6821 ... 0.4207

x = 5 ..... 0.9790 ... 0.9666 ... 0.8385 ... 0.6167

x = 6 ..... 0.9946 ... 0.9905 ... 0.9305 ... 0.7800

x = 7 ..... 0.9989 ... 0.9977 ... 0.9745 ... 0.8909

x = 8 ..... 0.9998 ... 0.9995 ... 0.9920 ... 0.9532

x = 9 ..... 1.0000 ... 0.9999 ... 0.9979 ... 0.9827

x = 10 ..... 1.0000 ... 0.9995 ... 0.9944

x = 11 ..... 0.9999 ... 0.9985

x = 12 ..... 1.0000 ... 0.9996

x = 13 ..... 0.9999

x = 14 ..... 1.0000

---

p = 0.25 – 0.35 is on the next page

(Turn over)

n = 25 continued

p = ……. 0.25 ……. 0.30 …… 0.35

---

x = 0 ..... 0.0008 ... 0.0001 ... 0.0000

x = 1 ..... 0.0070 ... 0.0016 ... 0.0003

x = 2 ..... 0.0321 ... 0.0090 ... 0.0021

x = 3 ..... 0.0962 ... 0.0332 ... 0.0097

x = 4 ..... 0.2137 ... 0.0905 ... 0.0320

x = 5 ..... 0.3783 ... 0.1935 ... 0.0826

x = 6 ..... 0.5611 ... 0.3407 ... 0.1734

x = 7 ..... 0.7265 ... 0.5118 ... 0.3061

x = 8 ..... 0.8506 ... 0.6769 ... 0.4668

x = 9 ..... 0.9287 ... 0.8106 ... 0.6303

x = 10 ... 0.9703 ... 0.9022 ... 0.7712

x = 11 ... 0.9893 ... 0.9558 ... 0.8746

x = 12 ... 0.9966 ... 0.9825 ... 0.9396

x = 13 ... 0.9991 ... 0.9940 ... 0.9745

x = 14 ... 0.9998 ... 0.9982 ... 0.9907

(continued on the next page)

n = 25 continued

p = ... 0.25 ..... 0.30 ..... 0.35

---

x = 15 ... 1.0000 ... 0.9995 ... 0.9971

x = 16 ..... 0.9999 ... 0.9992

x = 17 ..... 1.0000 ... 0.9998

x = 18 ..... 1.0000

---

p = 0.40 – 0.50 is on the next page

n = 25 continued

p = ……. 0.40 ..... 0.45 ..... 0.50

---

x = 0 ..... 0.0000 ... 0.0000 ... 0.0000

x = 1 ..... 0.0001 ... 0.0000 ... 0.0000

x = 2 ..... 0.0004 ... 0.0001 ... 0.0000

x = 3 ..... 0.0024 ... 0.0005 ... 0.0001

x = 4 ..... 0.0095 ... 0.0023 ... 0.0005

x = 5 ..... 0.0294 ... 0.0086 ... 0.0020

x = 6 ..... 0.0736 ... 0.0258 ... 0.0073

x = 7 ..... 0.1536 ... 0.0639 ... 0.0216

x = 8 ..... 0.2735 ... 0.1340 ... 0.0539

x = 9 ..... 0.4246 ... 0.2424 ... 0.1148

x = 10 ... 0.5858 ... 0.3843 ... 0.2122

x = 11 ... 0.7323 ... 0.5426 ... 0.3450

x = 12 ... 0.8462 ... 0.6937 ... 0.5000

x = 13 ... 0.9222 ... 0.8173 ... 0.6550

x = 14 ... 0.9656 ... 0.9040 ... 0.7878

(continued on the next page)

n = 25 continued

p = ... 0.40 ..... 0.45 ..... 0.50

---

x = 15 ... 0.9868 ... 0.9560 ... 0.8852

x = 16 ... 0.9957 ... 0.9826 ... 0.9461

x = 17 ... 0.9988 ... 0.9942 ... 0.9784

x = 18 ... 0.9997 ... 0.9984 ... 0.9927

x = 19 ... 0.9999 ... 0.9996 ... 0.9980

x = 20 ... 1.0000 ... 0.9999 ... 0.9995

x = 21 ..... 1.0000 ... 0.9999

x = 22 ..... 1.0000

---

n = 30 is on the next page

n = 30

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.7397 ... 0.5455 ... 0.4010 ... 0.2939

x = 1 ... 0.9639 ... 0.8795 ... 0.7731 ... 0.6612

x = 2 ... 0.9967 ... 0.9783 ... 0.9399 ... 0.8831

x = 3 ... 0.9998 ... 0.9971 ... 0.9881 ... 0.9694

x = 4 ... 1.0000 ... 0.9997 ... 0.9982 ... 0.9937

x = 5 ..... 1.0000 ... 0.9998 ... 0.9989

x = 6 ..... 1.0000 ... 0.9999

x = 7 ..... 1.0000

---

p = 0.05 – 0.08 is on the next page

n = 30 continued

p = ……. 0.05 …... 0.06 …... 0.07 …... 0.08

---

x = 0 ..... 0.2146 ... 0.1563 ... 0.1134 ... 0.0820

x = 1 ..... 0.5535 ... 0.4555 ... 0.3694 ... 0.2958

x = 2 ..... 0.8122 ... 0.7324 ... 0.6487 ... 0.5654

x = 3 ..... 0.9392 ... 0.8974 ... 0.8450 ... 0.7842

x = 4 ..... 0.9844 ... 0.9685 ... 0.9447 ... 0.9126

x = 5 ..... 0.9967 ... 0.9921 ... 0.9838 ... 0.9707

x = 6 ..... 0.9994 ... 0.9983 ... 0.9960 ... 0.9918

x = 7 ..... 0.9999 ... 0.9997 ... 0.9992 ... 0.9980

x = 8 ..... 1.0000 ... 1.0000 ... 0.9999 ... 0.9996

x = 9 ..... 1.0000 ... 0.9999

x = 10 ..... 1.0000

---

p = 0.09 – 0.20 is on the next page

(Turn over)

n = 30 continued

p = ... 0.09 ..... 0.10 ..... 0.15 ..... 0.20

---

x = 0 ..... 0.0591 ... 0.0424 ... 0.0076 ... 0.0012

x = 1 ..... 0.2343 ... 0.1837 ... 0.0480 ... 0.0105

x = 2 ..... 0.4855 ... 0.4114 ... 0.1514 ... 0.0442

x = 3 ..... 0.7175 ... 0.6474 ... 0.3217 ... 0.1227

x = 4 ..... 0.8723 ... 0.8245 ... 0.5245 ... 0.2552

x = 5 ..... 0.9519 ... 0.9268 ... 0.7106 ... 0.4275

x = 6 ..... 0.9848 ... 0.9742 ... 0.8474 ... 0.6070

x = 7 ..... 0.9959 ... 0.9922 ... 0.9302 ... 0.7608

x = 8 ..... 0.9990 ... 0.9980 ... 0.9722 ... 0.8713

x = 9 ..... 0.9998 ... 0.9995 ... 0.9903 ... 0.9389

x = 10 ... 1.0000 ... 0.9999 ... 0.9971 ... 0.9744

x = 11 ..... 1.0000 ... 0.9992 ... 0.9905

x = 12 ..... 0.9998 ... 0.9969

x = 13 ..... 1.0000 ... 0.9991

x = 14 ..... 0.9998

(continued on the next page)

n = 30 continued

p =	**0.09**	**0.10**	**0.15**	**0.20**
x = 15				**0.9999**
x = 16				**1.0000**

p = 0.25 – 0.35 is on the next page

n = 30 continued

p = ... 0.25 ..... 0.30 ..... 0.35

---

x = 0 ..... 0.0002 ... 0.0000 ... 0.0000

x = 1 ..... 0.0020 ... 0.0003 ... 0.0000

x = 2 ..... 0.0106 ... 0.0021 ... 0.0003

x = 3 ..... 0.0374 ... 0.0093 ... 0.0019

x = 4 ..... 0.0979 ... 0.0302 ... 0.0075

x = 5 ..... 0.2026 ... 0.0766 ... 0.0233

x = 6 ..... 0.3481 ... 0.1595 ... 0.0586

x = 7 ..... 0.5143 ... 0.2814 ... 0.1238

x = 8 ..... 0.6736 ... 0.4315 ... 0.2247

x = 9 ..... 0.8034 ... 0.5888 ... 0.3575

x = 10 ... 0.8943 ... 0.7304 ... 0.5078

x = 11 ... 0.9493 ... 0.8407 ... 0.6548

x = 12 ... 0.9784 ... 0.9155 ... 0.7802

x = 13 ... 0.9918 ... 0.9599 ... 0.8737

x = 14 ... 0.9973 ... 0.9831 ... 0.9348

(continued on the next page)

n = 30 continued

p = ... 0.25 ..... 0.30 ..... 0.35

---

x = 15 ... 0.9992 ... 0.9936 ... 0.9699

x = 16 ... 0.9998 ... 0.9979 ... 0.9876

x = 17 ... 0.9999 ... 0.9994 ... 0.9955

x = 18 ... 1.0000 ... 0.9998 ... 0.9986

x = 19 ..... 1.0000 ... 0.9996

x = 20 ..... 0.9999

x = 21 ..... 1.0000

---

p = 0.40 – 0.50 is on the next page

n = 30 continued

p = ... 0.40 …... 0.45 …... 0.50

---

x = 0 ..... 0.0000 ... 0.0000 ... 0.0000

x = 1 ..... 0.0000 ... 0.0000 ... 0.0000

x = 2 ..... 0.0000 ... 0.0000 ... 0.0000

x = 3 ..... 0.0003 ... 0.0000 ... 0.0000

x = 4 ..... 0.0015 ... 0.0002 ... 0.0000

x = 5 ..... 0.0057 ... 0.0011 ... 0.0002

x = 6 ..... 0.0172 ... 0.0040 ... 0.0007

x = 7 ..... 0.0435 ... 0.0121 ... 0.0026

x = 8 ..... 0.0940 ... 0.0312 ... 0.0081

x = 9 ..... 0.1763 ... 0.0694 ... 0.0214

x = 10 ... 0.2915 ... 0.1350 ... 0.0494

x = 11 ... 0.4311 ... 0.2327 ... 0.1002

x = 12 ... 0.5785 ... 0.3592 ... 0.1808

x = 13 ... 0.7145 ... 0.5025 ... 0.2923

x = 14 ... 0.8246 ... 0.6448 ... 0.4278

(continued on the next page)

n = 30 continued

p = ... 0.40 ..... 0.45 ..... 0.50

---

x = 15 ... 0.9029 ... 0.7691 ... 0.5722

x = 16 ... 0.9519 ... 0.8644 ... 0.7077

x = 17 ... 0.9788 ... 0.9286 ... 0.8192

x = 18 ... 0.9917 ... 0.9666 ... 0.8998

x = 19 ... 0.9971 ... 0.9862 ... 0.9506

x = 20 ... 0.9991 ... 0.9950 ... 0.9786

x = 21 ... 0.9998 ... 0.9984 ... 0.9919

x = 22 ... 1.0000 ... 0.9996 ... 0.9974

x = 23 ..... 0.9999 ... 0.9993

x = 24 ..... 1.0000 ... 0.9998

x = 25 ..... 1.0000

---

n = 40 is on the next page

n = 40

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.6690 ... 0.4457 ... 0.2957 ... 0.1954

x = 1 ... 0.9393 ... 0.8095 ... 0.6615 ... 0.5210

x = 2 ... 0.9925 ... 0.9543 ... 0.8822 ... 0.7855

x = 3 ... 0.9993 ... 0.9918 ... 0.9686 ... 0.9252

x = 4 ... 1.0000 ... 0.9988 ... 0.9933 ... 0.9790

x = 5 ..... 0.9999 ... 0.9988 ... 0.9951

x = 6 ..... 1.0000 ... 0.9998 ... 0.9990

x = 7 ..... 1.0000 ... 0.9998

x = 8 ..... 1.0000

---

p = 0.05 – 0.08 is on the next page

n = 40 continued

p = ... 0.05 …... 0.06 ..... 0.07 ..... 0.08

---

x = 0 ..... 0.1285 ... 0.0842 ... 0.0549 ... 0.0356

x = 1 ..... 0.3991 ... 0.2990 ... 0.2201 ... 0.1594

x = 2 ..... 0.6767 ... 0.5665 ... 0.4625 ... 0.3694

x = 3 ..... 0.8619 ... 0.7827 ... 0.6937 ... 0.6007

x = 4 ..... 0.9520 ... 0.9104 ... 0.8546 ... 0.7868

x = 5 ..... 0.9861 ... 0.9691 ... 0.9419 ... 0.9033

x = 6 ..... 0.9966 ... 0.9909 ... 0.9801 ... 0.9624

x = 7 ..... 0.9993 ... 0.9977 ... 0.9942 ... 0.9873

x = 8 ..... 0.9999 ... 0.9995 ... 0.9985 ... 0.9963

x = 9 ..... 1.0000 ... 0.9999 ... 0.9997 ... 0.9990

x = 10 ..... 1.0000 ... 0.9999 ... 0.9998

x = 11 ..... 1.0000 ... 1.0000

---

p = 0.09 – 0.20 is on the next page

n = 40 continued

p = ……. 0.09 ……. 0.10 ……. 0.15 ……. 0.20

---

x = 0 ….. 0.0230 ... 0.0148 ... 0.0015 ... 0.0001

x = 1 ….. 0.1140 ... 0.0805 ... 0.0121 ... 0.0015

x = 2 ….. 0.2894 ... 0.2228 ... 0.0486 ... 0.0079

x = 3 ….. 0.5092 ... 0.4231 ... 0.1302 ... 0.0285

x = 4 ….. 0.7103 ... 0.6290 ... 0.2633 ... 0.0759

x = 5 ….. 0.8535 ... 0.7937 ... 0.4325 ... 0.1613

x = 6 ….. 0.9361 ... 0.9005 ... 0.6067 ... 0.2859

x = 7 ….. 0.9758 ... 0.9581 ... 0.7559 ... 0.4371

x = 8 ….. 0.9919 ... 0.9845 ... 0.8646 ... 0.5931

x = 9 ….. 0.9976 ... 0.9949 ... 0.9328 ... 0.7318

x = 10 ... 0.9994 ... 0.9985 ... 0.9701 ... 0.8392

x = 11 ... 0.9999 ... 0.9996 ... 0.9880 ... 0.9125

x = 12 ... 1.0000 ... 0.9999 ... 0.9957 ... 0.9568

x = 13 …… 1.0000 ... 0.9986 ... 0.9806

x = 14 …….... 0.9996 ... 0.9921

(continued on the next page)

n = 40 continued

p =	0.09	0.10	0.15	0.20
x = 15	0.9999			0.9971
x = 16	1.0000			0.9990
x = 17				0.9997
x = 18				0.9999
x = 19				1.0000

p = 0.25 – 0.35 is on the next page

n = 40 continued

p = ……. 0.25 ……. 0.30 …… 0.35

---

x = 0 ..... 0.0000 ... 0.0000 ... 0.0000

x = 1 ..... 0.0001 ... 0.0000 ... 0.0000

x = 2 ..... 0.0010 ... 0.0001 ... 0.0000

x = 3 ..... 0.0047 ... 0.0006 ... 0.0001

x = 4 ..... 0.0160 ... 0.0026 ... 0.0003

x = 5 ..... 0.0433 ... 0.0086 ... 0.0013

x = 6 ..... 0.0962 ... 0.0238 ... 0.0044

x = 7 ..... 0.1820 ... 0.0553 ... 0.0124

x = 8 ..... 0.2998 ... 0.1110 ... 0.0303

x = 9 ..... 0.4395 ... 0.1959 ... 0.0644

x = 10 ... 0.5839 ... 0.3087 ... 0.1215

x = 11 ... 0.7151 ... 0.4406 ... 0.2053

x = 12 ... 0.8209 ... 0.5772 ... 0.3143

x = 13 ... 0.8968 ... 0.7032 ... 0.4408

x = 14 ... 0.9456 ... 0.8074 ... 0.5721

(continued on the next page)

n = 40 continued

p = …..... 0.25 ..... 0.30 ..... 0.35

---

x = 15 ... 0.9738 ... 0.8849 ... 0.6946

x = 16 ... 0.9884 ... 0.9367 ... 0.7978

x = 17 ... 0.9953 ... 0.9680 ... 0.8761

x = 18 ... 0.9983 ... 0.9852 ... 0.9301

x = 19 ... 0.9994 ... 0.9937 ... 0.9637

x = 20 ... 0.9998 ... 0.9976 ... 0.9827

x = 21 ... 1.0000 ... 0.9991 ... 0.9925

x = 22 ..... 0.9997 ... 0.9970

x = 23 ..... 0.9999 ... 0.9989

x = 24 ..... 1.0000 ... 0.9996

x = 25 ..... 0.9999

x = 26 ..... 1.0000

---

p = 0.40 – 0.50 is on the next page

n = 40 continued

p = ……. 0.40 …... 0.45 …... 0.50

---

x = 0 ..... 0.0000 ... 0.0000 ... 0.0000

x = 1 ..... 0.0000 ... 0.0000 ... 0.0000

x = 2 ..... 0.0000 ... 0.0000 ... 0.0000

x = 3 ..... 0.0000 ... 0.0000 ... 0.0000

x = 4 ..... 0.0000 ... 0.0000 ... 0.0000

x = 5 ..... 0.0001 ... 0.0000 ... 0.0000

x = 6 ..... 0.0006 ... 0.0001 ... 0.0000

x = 7 ..... 0.0021 ... 0.0002 ... 0.0000

x = 8 ..... 0.0061 ... 0.0009 ... 0.0001

x = 9 ..... 0.0156 ... 0.0027 ... 0.0003

x = 10 ... 0.0352 ... 0.0074 ... 0.0011

x = 11 ... 0.0709 ... 0.0179 ... 0.0032

x = 12 ... 0.1285 ... 0.0386 ... 0.0083

x = 13 ... 0.2112 ... 0.0751 ... 0.0192

x = 14 ... 0.3174 ... 0.1326 ... 0.0403

(continued on the next page)

n = 40 continued

p = ……. 0.40 …... 0.45 …... 0.50

---

x = 15 ... 0.4402 ... 0.2142 ... 0.0769

x = 16 ... 0.5681 ... 0.3185 ... 0.1341

x = 17 ... 0.6885 ... 0.4391 ... 0.2148

x = 18 ... 0.7911 ... 0.5651 ... 0.3179

x = 19 ... 0.8702 ... 0.6844 ... 0.4373

x = 20 ... 0.9256 ... 0.7870 ... 0.5627

x = 21 ... 0.9608 ... 0.8669 ... 0.6821

x = 22 ... 0.9811 ... 0.9233 ... 0.7852

x = 23 ... 0.9917 ... 0.9595 ... 0.8659

x = 24 ... 0.9966 ... 0.9804 ... 0.9231

x = 25 ... 0.9988 ... 0.9914 ... 0.9597

x = 26 ... 0.9996 ... 0.9966 ... 0.9808

x = 27 ... 0.9999 ... 0.9988 ... 0.9917

x = 28 ... 1.0000 ... 0.9996 ... 0.9968

x = 29 ..... 0.9999 ... 0.9989

(continued on the next page)

n = 40 continued

p = ……. 0.40 …... 0.45 ..... 0.50

---

x = 30 ..... 1.0000 ... 0.9997

x = 31 ..... 0.9999

x = 32 ..... 1.0000

---

n = 50 is on the next page

n = 50

p = ... 0.01 ..... 0.02 ..... 0.03 ..... 0.04

---

x = 0 ... 0.6050 ... 0.3642 ... 0.2181 ... 0.1299

x = 1 ... 0.9106 ... 0.7358 ... 0.5553 ... 0.4005

x = 2 ... 0.9862 ... 0.9216 ... 0.8108 ... 0.6767

x = 3 ... 0.9984 ... 0.9822 ... 0.9372 ... 0.8609

x = 4 ... 0.9999 ... 0.9968 ... 0.9832 ... 0.9510

x = 5 ... 1.0000 ... 0.9995 ... 0.9963 ... 0.9856

x = 6 ..... 0.9999 ... 0.9993 ... 0.9964

x = 7 ..... 1.0000 ... 0.9999 ... 0.9992

x = 8 ..... 1.0000 ... 0.9999

x = 9 ..... 1.0000

---

p = 0.05 – 0.08 is on the next page

n = 50 continued

p =	0.05	0.06	0.07	0.08
x = 0	0.0769	0.0453	0.0266	0.0155
x = 1	0.2794	0.1900	0.2165	0.0827
x = 2	0.5405	0.4162	0.3108	0.2260
x = 3	0.7604	0.6473	0.5327	0.4253
x = 4	0.8964	0.8206	0.7290	0.6290
x = 5	0.9622	0.9224	0.8650	0.7919
x = 6	0.9882	0.9711	0.9417	0.8981
x = 7	0.9968	0.9906	0.9780	0.9562
x = 8	0.9992	0.9973	0.9927	0.9833
x = 9	0.9998	0.9993	0.9978	0.9944
x = 10	1.0000	0.9998	0.9994	0.9983
x = 11		1.0000	0.9999	0.9995
x = 12			1.0000	0.9999
x = 13				1.0000

p = 0.09 – 0.20 is on the next page

(Turn over)

n = 50 continued

p = ……. 0.09 ……. 0.10 ……. 0.15 ……. 0.20

---

x = 0 ….. 0.0090 ... 0.0052 ... 0.0003 ... 0.0000

x = 1 ….. 0.0532 ... 0.0338 ... 0.0029 ... 0.0002

x = 2 ….. 0.1605 ... 0.1117 ... 0.0142 ... 0.0013

x = 3 ….. 0.3303 ... 0.2503 ... 0.0460 ... 0.0057

x = 4 ….. 0.5277 ... 0.4312 ... 0.1121 ... 0.0185

x = 5 ….. 0.7072 ... 0.6161 ... 0.2194 ... 0.0480

x = 6 ….. 0.8404 ... 0.7702 ... 0.3613 ... 0.1034

x = 7 ….. 0.9232 ... 0.8779 ... 0.5188 ... 0.1904

x = 8 ….. 0.9672 ... 0.9421 ... 0.6681 ... 0.3073

x = 9 ….. 0.9875 ... 0.9755 ... 0.7911 ... 0.4437

x = 10 ... 0.9957 ... 0.9906 ... 0.8801 ... 0.5836

x = 11 ... 0.9987 ... 0.9968 ... 0.9372 ... 0.7107

x = 12 ... 0.9996 ... 0.9990 ... 0.9699 ... 0.8139

x = 13 ... 0.9999 ... 0.9997 ... 0.9868 ... 0.8894

x = 14 ... 1.0000 ... 0.9999 ... 0.9947 ... 0.9393

(continued on the next page)

n = 50 continued

p =	0.09	0.10	0.15	0.20
x = 15	1.0000	0.9981	0.9692	
x = 16	0.9993	0.9856		
x = 17	0.9998	0.9937		
x = 18	0.9999	0.9975		
x = 19	1.0000	0.9991		
x = 20	0.9997			
x = 21	0.9999			
x = 22	1.0000			

p = 0.25 – 0.35 is on the next page

n = 50 continued

p = ……. 0.25 ……. 0.30 …… 0.35

---

x = 0 ..... 0.0000 ... 0.0000 ... 0.0000

x = 1 ..... 0.0000 ... 0.0000 ... 0.0000

x = 2 ..... 0.0001 ... 0.0000 ... 0.0000

x = 3 ..... 0.0005 ... 0.0000 ... 0.0000

x = 4 ..... 0.0021 ... 0.0002 ... 0.0000

x = 5 ..... 0.0070 ... 0.0007 ... 0.0001

x = 6 ..... 0.0194 ... 0.0025 ... 0.0002

x = 7 ..... 0.0453 ... 0.0073 ... 0.0008

x = 8 ..... 0.0916 ... 0.0183 ... 0.0025

x = 9 ..... 0.1637 ... 0.0402 ... 0.0067

x = 10 ... 0.2622 ... 0.0789 ... 0.0160

x = 11 ... 0.3816 ... 0.1390 ... 0.0342

x = 12 ... 0.5110 ... 0.2229 ... 0.0661

x = 13 ... 0.6370 ... 0.3279 ... 0.1163

x = 14 ... 0.7481 ... 0.4468 ... 0.1878

(continued on the next page)

n = 50 continued

p = ……. 0.25 ……. 0.30 ……. 0.35

---

x = 15 ... 0.8369 ... 0.5692 ... 0.2801

x = 16 ... 0.9017 ... 0.6839 ... 0.3889

x = 17 ... 0.9449 ... 0.7822 ... 0.5060

x = 18 ... 0.9713 ... 0.8594 ... 0.6216

x = 19 ... 0.9861 ... 0.9152 ... 0.7264

x = 20 ... 0.9937 ... 0.9522 ... 0.8139

x = 21 ... 0.9974 ... 0.9749 ... 0.8813

x = 22 ... 0.9990 ... 0.9877 ... 0.9290

x = 23 ... 0.9996 ... 0.9944 ... 0.9604

x = 24 ... 0.9999 ... 0.9976 ... 0.9793

x = 25 ... 1.0000 ... 0.9991 ... 0.9900

x = 26 ..... 0.9997 ... 0.9955

x = 27 ..... 0.9999 ... 0.9981

x = 28 ..... 1.0000 ... 0.9993

x = 29 ..... 0.9997

(continued on the next page)

n = 50 continued

p = …..... 0.25 …..... 0.30 …..... 0.35

---

x = 30 ..... 0.9999

x = 31 ..... 1.0000

---

p = 0.40 – 0.50 is on the next page

n = 50 continued

p = ... 0.40 ..... 0.45 ..... 0.50

---

x = 0 ..... 0.0000 ... 0.0000 ... 0.0000

x = 1 ..... 0.0000 ... 0.0000 ... 0.0000

x = 2 ..... 0.0000 ... 0.0000 ... 0.0000

x = 3 ..... 0.0000 ... 0.0000 ... 0.0000

x = 4 ..... 0.0000 ... 0.0000 ... 0.0000

x = 5 ..... 0.0000 ... 0.0000 ... 0.0000

x = 6 ..... 0.0000 ... 0.0000 ... 0.0000

x = 7 ..... 0.0001 ... 0.0000 ... 0.0000

x = 8 ..... 0.0002 ... 0.0000 ... 0.0000

x = 9 ..... 0.0008 ... 0.0001 ... 0.0000

x = 10 ... 0.0022 ... 0.0002 ... 0.0000

x = 11 ... 0.0057 ... 0.0006 ... 0.0000

x = 12 ... 0.0133 ... 0.0018 ... 0.0002

x = 13 ... 0.0280 ... 0.0045 ... 0.0005

x = 14 ... 0.0540 ... 0.0104 ... 0.0013

(continued on the next page)

n = 50 continued

p = ... 0.40 ..... 0.45 ..... 0.50

---

x = 15 ... 0.0955 ... 0.0220 ... 0.0033

x = 16 ... 0.1561 ... 0.0427 ... 0.0077

x = 17 ... 0.2369 ... 0.0765 ... 0.0164

x = 18 ... 0.3356 ... 0.1273 ... 0.0325

x = 19 ... 0.4465 ... 0.1974 ... 0.0595

x = 20 ... 0.5610 ... 0.2862 ... 0.1013

x = 21 ... 0.6701 ... 0.3900 ... 0.1611

x = 22 ... 0.7660 ... 0.5019 ... 0.2399

x = 23 ... 0.8438 ... 0.6134 ... 0.3359

x = 24 ... 0.9022 ... 0.7160 ... 0.4439

x = 25 ... 0.9427 ... 0.8034 ... 0.5561

x = 26 ... 0.9686 ... 0.8721 ... 0.6641

x = 27 ... 0.9840 ... 0.9220 ... 0.7601

x = 28 ... 0.9924 ... 0.9556 ... 0.8389

x = 29 ... 0.9966 ... 0.9765 ... 0.8987

(continued on the next page)

n = 50 continued

p = ... 0.40 ..... 0.45 ..... 0.50

---

x = 30 ... 0.9986 ... 0.9884 ... 0.9405

x = 31 ... 0.9995 ... 0.9947 ... 0.9675

x = 32 ... 0.9998 ... 0.9978 ... 0.9836

x = 33 ... 0.9999 ... 0.9991 ... 0.9923

x = 34 ... 1.0000 ... 0.9997 ... 0.9967

x = 35 ..... 0.9999 ... 0.9987

x = 36 ..... 1.0000 ... 0.9995

x = 37 ..... 0.9998

x = 38 ..... 1.0000

END OF TABLE 1

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4. STATISTICAL TABLES

TABLE 2: CUMULATIVE POISSON DISTRIBUTION FUNCTION

The tabulated value is $P(X \leq x)$, where X has a Poisson distribution with mean λ.

λ = ... 0.10 ..... 0.20 ..... 0.30 ..... 0.40
x = 0 ... 0.9048 ... 0.8187 ... 0.7408 ... 0.6703
x = 1 ... 0.9953 ... 0.9825 ... 0.9631 ... 0.9384
x = 2 ... 0.9998 ... 0.9989 ... 0.9964 ... 0.9921
x = 3 ... 1.0000 ... 0.9999 ... 0.9997 ... 0.9992
x = 4 ..... 1.0000 ... 1.0000 ... 0.9999
x = 5 ..... 1.0000

λ = ... 0.50 ..... 0.60 ..... 0.70 ..... 0.80
x = 0 … 0.6065 … 0.5488 … 0.4966 … 0.4493
x = 1 … 0.9098 … 0.8781 … 0.8442 … 0.8088
x = 2 … 0.9856 … 0.9769 … 0.9659 … 0.9526
x = 3 … 0.9982 … 0.9966 … 0.9942 … 0.9909
x = 4 … 0.9998 … 0.9996 … 0.9992 … 0.9986
x = 5 … 1.0000 … 1.0000 … 0.9999 … 0.9998
x = 6 ..... 1.0000 … 1.0000

λ = 0.90 – 1.4 on the next page

(Turn over)

λ =	0.90	1.0	1.2	1.4
x = 0	0.4066	0.3679	0.3012	0.2466
x = 1	0.7725	0.7358	0.6626	0.5918
x = 2	0.9371	0.9197	0.8795	0.8335
x = 3	0.9865	0.9810	0.9662	0.9463
x = 4	0.9977	0.9963	0.9923	0.9857
x = 5	0.9997	0.9994	0.9985	0.9968
x = 6	1.0000	0.9999	0.9997	0.9994
x = 7		1.0000	1.0000	0.9999
x = 8				1.0000

λ = 1.6 – 2.2 on the next page

(Turn over)

λ = ... 1.6 ..... 1.8 ..... 2.0 ..... 2.2				
x = 0	0.2019	0.1653	0.1353	0.1108
x = 1	0.5249	0.4628	0.4060	0.3546
x = 2	0.7834	0.7306	0.6767	0.6227
x = 3	0.9212	0.8913	0.8571	0.8194
x = 4	0.9763	0.9636	0.9473	0.9275
x = 5	0.9940	0.9896	0.9834	0.9751
x = 6	0.9987	0.9974	0.9955	0.9925
x = 7	0.9997	0.9994	0.9989	0.9980
x = 8	1.0000	0.9999	0.9998	0.9995
x = 9	.....	1.0000	1.0000	0.9999
x = 10	.....			1.0000

λ = 2.4 – 3.0 on the next page

λ = ……. 2.4 …….. 2.6 …….. 2.8 ……. 3.0				
x = 0 …..	0.0907 …	0.0743 …	0.0608 …	0.0498
x = 1 …..	0.3084 …	0.2674 …	0.2311 …	0.1991
x = 2 …..	0.5697 …	0.5184 …	0.4695 …	0.4232
x = 3 …..	0.7787 …	0.7360 …	0.6919 …	0.6472
x = 4 …..	0.9041 …	0.8774 …	0.8477 …	0.8153
x = 5 …..	0.9643 …	0.9510 …	0.9349 …	0.9161
x = 6 …..	0.9884 …	0.9828 …	0.9756 …	0.9665
x = 7 …..	0.9967 …	0.9947 …	0.9919 …	0.9881
x = 8 …..	0.9991 …	0.9985 …	0.9976 …	0.9962
x = 9 …..	0.9998 …	0.9996 …	0.9993 …	0.9989
x = 10 …	1.0000 …	0.9999 …	0.9998 …	0.9997
x = 11 ……..	1.0000 …	1.0000 …	0.9999	
x = 12 ……..	1.0000			

λ = 3.2 – 3.8 on the next page

(Turn over)

λ = ……. 3.2 …….. 3.4 …….. 3.6 …….. 3.8				
x = 0 …..	0.0408 …	0.0334 …	0.0273 …	0.0224
x = 1 …..	0.1712 …	0.1468 …	0.1257 …	0.1074
x = 2 …..	0.3799 …	0.3397 …	0.3027 …	0.2689
x = 3 …..	0.6025 …	0.5584 …	0.5152 …	0.4735
x = 4 …..	0.7806 …	0.7442 …	0.7064 …	0.6678
x = 5 …..	0.8946 …	0.8705 …	0.8441 …	0.8156
x = 6 …..	0.9554 …	0.9421 …	0.9267 …	0.9091
x = 7 …..	0.9832 …	0.9769 …	0.9692 …	0.9599
x = 8 …..	0.9943 …	0.9917 …	0.9883 …	0.9840
x = 9 …..	0.9982 …	0.9973 …	0.9960 …	0.9942
x = 10 …	0.9995 …	0.9992 …	0.9987 …	0.9981
x = 11 …	0.9999 …	0.9998 …	0.9996 …	0.9994
x = 12 …	1.0000 …	0.9999 …	0.9999 …	0.9998
x = 13 ……..	1.0000 …	1.0000 …	1.0000	

λ = 4.0 – 5.5 on the next page

(Turn over)

λ = …….	4.0	4.5	5.0	5.5
x = 0 …..	0.0183	0.0111	0.0067	0.0041
x = 1 …..	0.0916	0.0611	0.0404	0.0266
x = 2 …..	0.2381	0.1736	0.1247	0.0884
x = 3 …..	0.4335	0.3423	0.2650	0.2017
x = 4 …..	0.6288	0.5321	0.4405	0.3575
x = 5 …..	0.7851	0.7029	0.6160	0.5289
x = 6 …..	0.8893	0.8311	0.7622	0.6860
x = 7 …..	0.9489	0.9134	0.8666	0.8095
x = 8 …..	0.9786	0.9597	0.9319	0.8944
x = 9 …..	0.9919	0.9829	0.9682	0.9462
x = 10 …	0.9972	0.9933	0.9863	0.9747
x = 11 …	0.9991	0.9976	0.9945	0.9890
x = 12 …	0.9997	0.9992	0.9980	0.9955
x = 13 …	0.9999	0.9997	0.9993	0.9983
x = 14 …	1.0000	0.9999	0.9998	0.9994
x = 15 ……....	1.0000	0.9999	0.9998	

(continued on the next page)

λ = ……. 4.0 …….. 4.5 …….. 5.0 …….. 5.5
x = 16 …….. 1.0000 … 0.9999
x = 17 …….. 1.0000

λ = 6.0 – 7.5 on the next page

λ = ……. 6.0 ……... 6.5 …….. 7.0 …….. 7.5
x = 0 ….. 0.0025 … 0.0015 … 0.0009 … 0.0006
x = 1 ..… 0.0174 … 0.0113 … 0.0073 … 0.0047
x = 2 ..… 0.0620 … 0.0430 … 0.0296 … 0.0203
x = 3 ..… 0.1512 … 0.1118 … 0.0818 … 0.0591
x = 4 ..… 0.2851 … 0.2237 … 0.1730 … 0.1321
x = 5 ..… 0.4457 … 0.3690 … 0.3007 … 0.2414
x = 6 ..… 0.6063 … 0.5265 … 0.4497 … 0.3782
x = 7 ..… 0.7440 … 0.6728 … 0.5987 … 0.5246
x = 8 ….. 0.8472 … 0.7916 … 0.7291 … 0.6620
x = 9 ..… 0.9161 … 0.8774 … 0.8305 … 0.7764
x = 10 … 0.9574 … 0.9332 … 0.9015 … 0.8622
x = 11 … 0.9799 … 0.9661 … 0.9467 … 0.9208
x = 12 … 0.9912 … 0.9840 … 0.9730 … 0.9573
x = 13 … 0.9964 … 0.9929 … 0.9872 … 0.9784
x = 14 … 0.9986 … 0.9970 … 0.9943 … 0.9897
x = 15 … 0.9995 … 0.9988 … 0.9976 … 0.9954

(continued on the next page)

λ = ……. 6.0 ……... 6.5 …….. 7.0 …….. 7.5
x = 16 … 0.9998 … 0.9996 … 0.9990 … 0.9980
x = 17 … 0.9999 … 0.9998 … 0.9996 … 0.9992
x = 18 … 1.0000 … 0.9999 … 0.9999 … 0.9997
x = 19 …….. 1.0000 … 1.0000 … 0.9999
x = 20 ……... 1.0000

λ = 8.0 – 9.5 on the next page

λ = …….	8.0 ……..	8.5 ……..	9.0 ……..	9.5
x = 0 …..	0.0003 …	0.0002 …	0.0001 …	0.0001
x = 1 …..	0.0030 …	0.0019 …	0.0012 …	0.0008
x = 2 …..	0.0138 …	0.0093 …	0.0062 …	0.0042
x = 3 …..	0.0424 …	0.0301 …	0.0212 …	0.0149
x = 4 …..	0.0996 …	0.0744 …	0.0550 …	0.0403
x = 5 …..	0.1912 …	0.1496 …	0.1157 …	0.0885
x = 6 …..	0.3134 …	0.2562 …	0.2068 …	0.1649
x = 7 …..	0.4530 …	0.3856 …	0.3239 …	0.2687
x = 8 …..	0.5925 …	0.5231 …	0.4557 …	0.3918
x = 9 …..	0.7166 …	0.6530 …	0.5874 …	0.5218
x = 10 …	0.8159 …	0.7634 …	0.7060 …	0.6453
x = 11 …	0.8881 …	0.8487 …	0.8030 …	0.7520
x = 12 …	0.9362 …	0.9091 …	0.8758 …	0.8364
x = 13 …	0.9658 …	0.9486 …	0.9261 …	0.8981
x = 14 …	0.9827 …	0.9726 …	0.9585 …	0.9400
x = 15 …	0.9918 …	0.9862 …	0.9780 …	0.9665

(continued on the next page)

λ = ……. 8.0 …….. 8.5 …….. 9.0 …….. 9.5
x = 16 … 0.9963 … 0.9934 … 0.9889 … 0.9823
x = 17 … 0.9984 … 0.9970 … 0.9947 … 0.9911
x = 18 … 0.9993 … 0.9987 … 0.9976 … 0.9957
x = 19 … 0.9997 … 0.9995 … 0.9989 … 0.9980
x = 20 … 0.9999 … 0.9998 … 0.9996 … 0.9991
x = 21 … 1.0000 … 0.9999 … 0.9998 … 0.9996
x = 22 …….. 1.0000 … 0.9999 … 0.9999
x = 23 ……..…….. 1.0000 … 0.9999
x = 24 ……... 1.0000

λ = 10.0 – 13.0 on the next page

λ = …….	10.0 ……	11.0 …….	12.0 ……...	13.0
x = 0 …..	0.0000 …	0.0000 …	0.0000 …	0.0000
x = 1 ..…	0.0005 …	0.0002 …	0.0001 …	0.0000
x = 2 ..…	0.0028 …	0.0012 …	0.0005 …	0.0002
x = 3 ..…	0.0103 …	0.0049 …	0.0023 …	0.0011
x = 4 ..…	0.0293 …	0.0151 …	0.0076 …	0.0037
x = 5 ..…	0.0671 …	0.0375 …	0.0203 …	0.0107
x = 6 ..…	0.1301 …	0.0786 …	0.0458 …	0.0259
x = 7 ..…	0.2202 …	0.1432 …	0.0895 …	0.0540
x = 8 …..	0.3328 …	0.2320 …	0.1550 …	0.0998
x = 9 ..…	0.4579 …	0.3405 …	0.2424 …	0.1658
x = 10 …	0.5830 …	0.4599 …	0.3472 …	0.2517
x = 11 …	0.6968 …	0.5793 …	0.4616 …	0.3532
x = 12 …	0.7916 …	0.6887 …	0.5760 …	0.4631
x = 13 …	0.8645 …	0.7813 …	0.6815 …	0.5730
x = 14 …	0.9165 …	0.8540 …	0.7720 …	0.6751
x = 15 …	0.9513 …	0.9074 …	0.8444 …	0.7636

(continued on the next page)

λ = ……. 10.0 …… 11.0 ……. 12.0 ……... 13.0
x = 16 … 0.9730 … 0.9441 … 0.8987 … 0.8355
x = 17 … 0.9857 … 0.9678 … 0.9370 … 0.8905
x = 18 … 0.9928 … 0.9823 … 0.9626 … 0.9302
x = 19 … 0.9965 … 0.9907 … 0.9787 … 0.9573
x = 20 … 0.9984 … 0.9953 … 0.9884 … 0.9750
x = 21 … 0.9993 … 0.9977 … 0.9939 … 0.9859
x = 22 … 0.9997 … 0.9990 … 0.9970 … 0.9924
x = 23 … 0.9999 … 0.9995 … 0.9985 … 0.9960
x = 24 … 1.0000 … 0.9998 … 0.9993 … 0.9980
x = 25 …….. 0.9999 … 0.9997 … 0.9990
x = 26 …….. 1.0000 … 0.9999 … 0.9995
x = 27 ……..…….. 0.9999 … 0.9998
x = 28 ……..…….. 1.0000 … 0.9999
x = 29 ……..... 1.0000

λ = 14.0 – 15.0 on the next page

(Turn over)

λ = ……. 14.0 …… 15.0

---

x = 0 ….. 0.0000 … 0.0000

x = 1 ..… 0.0000 … 0.0000

x = 2 ..… 0.0001 … 0.0000

x = 3 ..… 0.0005 … 0.0002

x = 4 ..… 0.0018 … 0.0009

x = 5 ..… 0.0055 … 0.0028

x = 6 ..… 0.0142 … 0.0076

x = 7 ..… 0.0316 … 0.0180

x = 8 ….. 0.0621 … 0.0374

x = 9 ..… 0.1094 … 0.0699

x = 10 … 0.1757 … 0.1185

x = 11 … 0.2600 … 0.1848

x = 12 … 0.3585 … 0.2676

x = 13 … 0.4644 … 0.3632

x = 14 … 0.5704 … 0.4657

x = 15 … 0.6694 … 0.5681

(continued on the next page)

λ = ……. 14.0 …… 15.0

---

x = 16 … 0.7559 … 0.6641

x = 17 … 0.8272 … 0.7489

x = 18 … 0.8826 … 0.8195

x = 19 … 0.9235 … 0.8752

x = 20 … 0.9521 … 0.9170

x = 21 … 0.9712 … 0.9469

x = 22 … 0.9833 … 0.9673

x = 23 … 0.9907 … 0.9805

x = 24 … 0.9950 … 0.9888

x = 25 … 0.9974 … 0.9938

x = 26 … 0.9987 … 0.9967

x = 27 … 0.9994 … 0.9983

x = 28 … 0.9997 … 0.9991

x = 29 … 0.9999 … 0.9996

x = 30 … 0.9999 … 0.9998

(continued on the next page)

λ = ……. 14.0 …… 15.0
x = 31 … 1.0000 … 0.9999
x = 32 …….. 1.0000

END OF TABLE 2

4. STATISTICAL TABLES

TABLE 3: NORMAL DISTRIBUTION FUNCTION

The table gives the probability, p, that a normally distributed random variable Z, with mean $= 0$ and variance $= 1$, is less than or equal to z.

---

z = …….. 0.00 …….. 0.01 …….. 0.02
z = 0.0 ... 0.50000 … 0.50399 … 0.50798
z = 0.1 ... 0.53938 … 0.54380 … 0.54776
z = 0.2 ... 0.57926 … 0.58317 … 0.58706
z = 0.3 ... 0.61791 … 0.62172 … 0.62552
z = 0.4 ... 0.65542 … 0.65910 … 0.66276
z = 0.5 ... 0.69146 … 0.69497 … 0.69847
z = 0.6 ... 0.72575 … 0.72907 … 0.73237
z = 0.7 ... 0.75804 … 0.76115 … 0.76424
z = 0.8 ... 0.78814 … 0.79103 … 0.79389
z = 0.9 ... 0.81594 … 0.81859 … 0.82121
z = 1.0 ... 0.84134 … 0.84375 … 0.84614
z = 1.1 ... 0.86433 … 0.86650 … 0.86864
z = 1.2 ... 0.88493 … 0.88686 … 0.88877
z = 1.3 ... 0.90320 … 0.90490 … 0.90658
z = 1.4 ... 0.91924 … 0.92073 … 0.92220
z = 1.5 ... 0.93319 … 0.93448 … 0.93574

(continued on the next page)

z = …….. 0.00 …….. 0.01 …….. 0.02			
z = 1.6 ...	0.94520 …	0.94630 …	0.94738
z = 1.7 ...	0.95543 …	0.95637 …	0.95728
z = 1.8 ...	0.96407 …	0.96485 …	0.96562
z = 1.9 ...	0.97128 …	0.97193 …	0.97257
z = 2.0 ...	0.97725 …	0.97778 …	0.97831
z = 2.1 ...	0.98214 …	0.98257 …	0.98300
z = 2.2 ...	0.98610 …	0.98645 …	0.98679
z = 2.3 ...	0.98928 …	0.98956 …	0.98983
z = 2.4 ...	0.99180 …	0.99202 …	0.99224
z = 2.5 ...	0.99379 …	0.99396 …	0.99413
z = 2.6 ...	0.99534 …	0.99547 …	0.99560
z = 2.7 ...	0.99653 …	0.99664 …	0.99674
z = 2.8 ...	0.99744 …	0.99752 …	0.99760
z = 2.9 ...	0.99813 …	0.99819 …	0.99825
z = 3.0 ...	0.99865 …	0.99869 …	0.99874
z = 3.1 ...	0.99903 …	0.99906 …	0.99910

(continued on the next page)

z = …….. 0.00 …….. 0.01 ……... 0.02
z = 3.2 ... 0.99931 … 0.99934 … 0.99936
z = 3.3 ... 0.99952 … 0.99953 … 0.99955
z = 3.4 ... 0.99966 … 0.99968 … 0.99969
z = 3.5 ... 0.99977 … 0.99978 … 0.99978
z = 3.6 ... 0.99984 … 0.99985 … 0.99985
z = 3.7 ... 0.99989 … 0.99990 … 0.99990
z = 3.8 ... 0.99993 … 0.99993 … 0.99993
z = 3.9 ... 0.99995 … 0.99995 … 0.99996

z = 0.03 – 0.05 on the next page

z = …….. 0.03 …….. 0.04 ……... 0.05
z = 0.0 ... 0.51197 … 0.51595 … 0.51994
z = 0.1 ... 0.55172 … 0.55567 … 0.55962
z = 0.2 ... 0.59095 … 0.59483 … 0.59871
z = 0.3 ... 0.62930 … 0.63307 … 0.63683
z = 0.4 ... 0.66640 … 0.67003 … 0.67364
z = 0.5 ... 0.70194 … 0.70540 … 0.70884
z = 0.6 ... 0.73565 … 0.73891 … 0.74215
z = 0.7 ... 0.76730 … 0.77035 … 0.77337
z = 0.8 ... 0.79673 … 0.79955 … 0.80234
z = 0.9 ... 0.82381 … 0.82639 … 0.82894
z = 1.0 ... 0.84849 … 0.85083 … 0.85314
z = 1.1 ... 0.87076 … 0.87286 … 0.87493
z = 1.2 ... 0.89065 … 0.89251 … 0.89435
z = 1.3 ... 0.90824 … 0.90988 … 0.91149
z = 1.4 ... 0.92364 … 0.92507 … 0.92647
z = 1.5 ... 0.93699 … 0.93822 … 0.93943

(continued on the next page)

z = …….. 0.03 …….. 0.04 ……... 0.05
z = 1.6 ... 0.94845 … 0.94950 … 0.95053
z = 1.7 ... 0.95818 … 0.95907 … 0.95994
z = 1.8 ... 0.96638 … 0.96712 … 0.96784
z = 1.9 ... 0.97320 … 0.97381 … 0.97441
z = 2.0 ... 0.97882 … 0.97932 … 0.97982
z = 2.1 ... 0.98341 … 0.98382 … 0.98422
z = 2.2 ... 0.98713 … 0.98745 … 0.98778
z = 2.3 ... 0.99010 … 0.99036 … 0.99061
z = 2.4 ... 0.99245 … 0.99266 … 0.99286
z = 2.5 ... 0.99430 … 0.99446 … 0.99461
z = 2.6 ... 0.99573 … 0.99585 … 0.99598
z = 2.7 ... 0.99683 … 0.99693 … 0.99702
z = 2.8 ... 0.99767 … 0.99774 … 0.99781
z = 2.9 ... 0.99831 … 0.99836 … 0.99841
z = 3.0 ... 0.99878 … 0.99882 … 0.99886
z = 3.1 ... 0.99913 … 0.99916 … 0.99918

(continued on the next page)

z = …….. 0.03 …….. 0.04 …….. 0.05
z = 3.2 ... 0.99938 … 0.99940 … 0.99942
z = 3.3 ... 0.99957 … 0.99958 … 0.99960
z = 3.4 ... 0.99970 … 0.99971 … 0.99972
z = 3.5 ... 0.99979 … 0.99980 … 0.99981
z = 3.6 ... 0.99986 … 0.99986 … 0.99987
z = 3.7 ... 0.99990 … 0.99991 … 0.99991
z = 3.8 ... 0.99994 … 0.99994 … 0.99994
z = 3.9 ... 0.99996 … 0.99996 … 0.99996

z = 0.06 – 0.08 on the next page

z = …….. 0.06 …….. 0.07 …….. 0.08
z = 0.0 ... 0.52392 … 0.52790 … 0.53188
z = 0.1 ... 0.56356 … 0.56749 … 0.57142
z = 0.2 ... 0.60257 … 0.60642 … 0.61026
z = 0.3 ... 0.64058 … 0.64431 … 0.64803
z = 0.4 ... 0.67724 … 0.68082 … 0.68439
z = 0.5 ... 0.71226 … 0.71566 … 0.71904
z = 0.6 ... 0.74537 … 0.74857 … 0.75175
z = 0.7 ... 0.77637 … 0.77935 … 0.78230
z = 0.8 ... 0.80511 … 0.80785 … 0.81057
z = 0.9 ... 0.83147 … 0.83398 … 0.83646
z = 1.0 ... 0.85543 … 0.85769 … 0.85993
z = 1.1 ... 0.87698 … 0.87900 … 0.88100
z = 1.2 ... 0.89617 … 0.89796 … 0.89973
z = 1.3 ... 0.91309 … 0.91466 … 0.91621
z = 1.4 ... 0.92785 … 0.92922 … 0.93056
z = 1.5 ... 0.94062 … 0.94179 … 0.94295

(continued on the next page)

z = …….. 0.06 …….. 0.07 …….. 0.08
z = 1.6 ... 0.95154 … 0.95254 … 0.95352
z = 1.7 ... 0.96080 … 0.96164 … 0.96246
z = 1.8 ... 0.96856 … 0.96926 … 0.96995
z = 1.9 ... 0.97500 … 0.97558 … 0.97615
z = 2.0 ... 0.98030 … 0.98077 … 0.98124
z = 2.1 ... 0.98461 … 0.98500 … 0.98537
z = 2.2 ... 0.98809 … 0.98840 … 0.98870
z = 2.3 ... 0.99086 … 0.99111 … 0.99134
z = 2.4 ... 0.99305 … 0.99324 … 0.99343
z = 2.5 ... 0.99477 … 0.99492 … 0.99506
z = 2.6 ... 0.99609 … 0.99621 … 0.99632
z = 2.7 ... 0.99711 … 0.99720 … 0.99728
z = 2.8 ... 0.99788 … 0.99795 … 0.99801
z = 2.9 ... 0.99846 … 0.99851 … 0.99856
z = 3.0 ... 0.99889 … 0.99893 … 0.99896
z = 3.1 ... 0.99921 … 0.99924 … 0.99926

(continued on the next page)

z = …….. 0.06 …….. 0.07 …….. 0.08
z = 3.2 ... 0.99944 … 0.99946 … 0.99948
z = 3.3 ... 0.99961 … 0.99962 … 0.99964
z = 3.4 ... 0.99973 … 0.99974 … 0.99975
z = 3.5 ... 0.99981 … 0.99982 … 0.99983
z = 3.6 ... 0.99987 … 0.99988 … 0.99988
z = 3.7 ... 0.99992 … 0.99992 … 0.99992
z = 3.8 ... 0.99994 … 0.99995 … 0.99995
z = 3.9 ... 0.99996 … 0.99996 … 0.99997

z = 0.09 on the next page

z = …….. 0.09

---

z = 0.0 ... 0.53586

z = 0.1 ... 0.57535

z = 0.2 ... 0.61409

z = 0.3 ... 0.65173

z = 0.4 ... 0.68793

z = 0.5 ... 0.72240

z = 0.6 ... 0.75490

z = 0.7 ... 0.78524

z = 0.8 ... 0.81327

z = 0.9 ... 0.83891

z = 1.0 ... 0.86214

z = 1.1 ... 0.88298

z = 1.2 ... 0.90147

z = 1.3 ... 0.91774

z = 1.4 ... 0.93189

z = 1.5 ... 0.94408

(continued on the next page)

z = …….. 0.09

---

z = 1.6 ... 0.95449

z = 1.7 ... 0.96327

z = 1.8 ... 0.97062

z = 1.9 ... 0.97670

z = 2.0 ... 0.98169

z = 2.1 ... 0.98574

z = 2.2 ... 0.98899

z = 2.3 ... 0.99158

z = 2.4 ... 0.99361

z = 2.5 ... 0.99520

z = 2.6 ... 0.99643

z = 2.7 ... 0.99736

z = 2.8 ... 0.99807

z = 2.9 ... 0.99861

z = 3.0 ... 0.99900

z = 3.1 ... 0.99929

(continued on the next page)

z = …….. 0.09

---

z = 3.2 ... 0.99950

z = 3.3 ... 0.99965

z = 3.4 ... 0.99976

z = 3.5 ... 0.99983

z = 3.6 ... 0.99989

z = 3.7 ... 0.99992

z = 3.8 ... 0.99995

z = 3.9 ... 0.99997

END OF TABLE 3

---

4. STATISTICAL TABLES

TABLE 4: PERCENTAGE POINTS OF THE NORMAL DISTRIBUTION

The table gives the values of Z satisfying

$P(Z \leq z) = p$, where Z is the normally distributed random variable with mean $= 0$ and variance $= 1$.

---

p = …….	0.00 …….	0.01 ……	0.02
p = 0.5	0.0000 …	0.0251 …	0.0502
p = 0.6	0.2533 …	0.2793 …	0.3055
p = 0.7	0.5244 …	0.5534 …	0.5828
p = 0.8	0.8416 …	0.8779 …	0.9154
p = 0.9	1.2816 …	1.3408 …	1.4051

p = …….	0.03 …….	0.04 ……	0.05
p = 0.5	0.0753 …	0.1004 …	0.1257
p = 0.6	0.3319 …	0.3585 …	0.3853
p = 0.7	0.6128 …	0.6433 …	0.6745
p = 0.8	0.9542 …	0.9945 …	1.0364
p = 0.9	1.4758 …	1.5548 …	1.6449

p = 0.06 – 0.08 on the next page

(Turn over)

p = …….	0.06 …….	0.07 ……	0.08
p = 0.5	0.1510 …	0.1764 …	0.2019
p = 0.6	0.4125 …	0.4399 …	0.4677
p = 0.7	0.7063 …	0.7388 …	0.7722
p = 0.8	1.0803 …	1.1264 …	1.1750
p = 0.9	1.7507 …	1.8808 …	2.0537

p = …….	0.09
p = 0.5	0.2275
p = 0.6	0.4958
p = 0.7	0.8064
p = 0.8	1.2265
p = 0.9	2.3263

p = 0.000 to 0.002 on the next page

(Turn over)

p = ……. 0.000 ….. 0.001 ….. 0.002
p = 0.95 .... 1.6449 … 1.6546 … 1.6646
p = 0.96 .... 1.7507 … 1.7624 … 1.7744
p = 0.97 .... 1.8808 … 1.8975 … 1.9110
p = 0.98 .... 2.0537 … 2.0749 … 2.0969
p = 0.99 .... 2.3263 … 2.3656 … 2.4089

p = ……. 0.003 ….. 0.004 ….. 0.005
p = 0.95 .... 1.6747 … 1.6849 … 1.6954
p = 0.96 .... 1.7866 … 1.7991 … 1.8119
p = 0.97 .... 1.9268 … 1.9431 … 1.9600
p = 0.98 .... 2.1201 … 2.1444 … 2.1701
p = 0.99 .... 2.4573 … 2.5121 … 2.5758

p = 0.006 – 0.008 on the next page

(Turn over)

p = ……. 0.006 ….. 0.007 ….. 0.008
p = 0.95 .... 1.7060 … 1.7169 … 1.7279
p = 0.96 .... 1.8250 … 1.8384 … 1.8522
p = 0.97 .... 1.9774 … 1.9954 … 2.0141
p = 0.98 .... 2.1973 … 2.2262 … 2.2571
p = 0.99 .... 2.6521 … 2.7478 … 2.8782

p = ……. 0.009
p = 0.95 ... 1.7392
p = 0.96 ... 1.8663
p = 0.97 ... 2.0335
p = 0.98 ... 2.2904
p = 0.99 ... 3.0902

END OF TABLE 4

4. STATISTICAL TABLES

TABLE 5: PERCENTAGE POINTS OF THE STUDENT'S t-DISTRIBUTION

The table gives the values of X satisfying

$P(X \leq x) = p$, where X is a random variable having the Student's t-distribution with ν degrees of freedom.

---

p = ……...	0.9 ……..	0.95 ……..	0.975
v = 1 ……...	3.078 …..	6.314 …..	12.706
v = 2	1.886 …..	2.920 ……	4.303
v = 3	1.638 …..	2.353 ……	3.182
v = 4	1.533 …..	2.132 ……	2.776
v = 5	1.476 …..	2.015 ……	2.571
v = 6	1.440 …..	1.943 ……	2.447
v = 7	1.415 …..	1.895 ……	2.365
v = 8	1.397 …..	1.860 ……	2.306
v = 9	1.383 …..	1.833 ……	2.262
v = 10 ……..	1.372 …..	1.812 ……	2.228
v = 11 ……..	1.363 …..	1.796 ……	2.201
v = 12 ……..	1.356 …..	1.782 ……	2.179
v = 13 ……..	1.350 …..	1.771 ……	2.160
v = 14 ……..	1.345 …..	1.761 ……	2.145
v = 15 ……..	1.341 …..	1.753 ……	2.131
v = 16 ……..	1.337 …..	1.746 ……	2.121

(continued on the next page)

p = ……	0.9 ……..	0.95 ……..	0.975
v = 17 ……..	1.333 …..	1.740 ……	2.110
v = 18 ……..	1.330 …..	1.734 ……	2.101
v = 19 ……..	1.328 …..	1.729 ……	2.093
v = 20 ……..	1.325 …..	1.725 ……	2.086
v = 21 ……..	1.323 …..	1.721 ……	2.080
v = 22 ……..	1.321 …..	1.717 ……	2.074
v = 23 ……..	1.319 …..	1.714 ……	2.069
v = 24 ……..	1.318 …..	1.711 ……	2.064
v = 25 ……..	1.316 …..	1.708 ……	2.060
v = 26 ……..	1.315 …..	1.706 ……	2.056
v = 27 ……..	1.314 …..	1.703 ……	2.052
v = 28 ……..	1.313 …..	1.701 ……	2.048
v = 29 ……..	1.311 …..	1.699 ……	2.045
v = 30 ……..	1.310 …..	1.697 ……	2.042
v = 31 ……..	1.309 …..	1.696 ……	2.040
v = 32 ……..	1.309 …..	1.694 ……	2.037

(continued on the next page)

p =	0.9	0.95	0.975
v = 33	1.308	1.692	2.035
v = 34	1.307	1.691	2.032
v = 35	1.306	1.690	2.030
v = 36	1.306	1.688	2.028
v = 37	1.305	1.687	2.026
v = 38	1.304	1.686	2.024
v = 39	1.304	1.685	2.023
v = 40	1.303	1.684	2.021
v = 45	1.301	1.679	2.014
v = 50	1.299	1.676	2.009
v = 55	1.297	1.673	2.004
v = 60	1.296	1.671	2.000
v = 65	1.295	1.669	1.997
v = 70	1.294	1.667	1.994
v = 75	1.293	1.665	1.992
v = 80	1.292	1.664	1.990

(continued on the next page)

(Turn over)

p =	0.9	0.95	0.975
v = 85	1.292	1.663	1.998
v = 90	1.291	1.662	1.987
v = 95	1.291	1.661	1.985
v = 100	1.290	1.660	1.984
v = 125	1.288	1.657	1.979
v = 150	1.287	1.655	1.976
v = 200	1.286	1.653	1.972
v = ∞	1.282	1.645	1.960

p = 0.99 – 0.995 on the next pages

(Turn over)

p = ……..	0.99 ……..	0.995
v = 1 ….....	31.821 …..	63.657
v = 2	6.965 …….	9.925
v = 3	4.541 …….	5.841
v = 4	3.747 …….	4.604
v = 5	3.365 …….	4.032
v = 6	3.143 …….	3.707
v = 7	2.998 …….	3.499
v = 8	2.896 …….	3.355
v = 9	2.821 …….	3.250
v = 10 ……	2.764 …….	3.169
v = 11 ……	2.718 …….	3.106
v = 12 ……	2.681 …….	3.055
v = 13 ……	2.650 …….	3.012
v = 14 ……	2.624 …….	2.977
v = 15 ……	2.602 …….	2.947
v = 16 ……	2.583 …….	2.921

(continued on the next page)

p = …….	0.99 ……	0.995
v = 17 ……	2.567 …….	2.898
v = 18 ……	2.552 …….	2.878
v = 19 ……	2.539 …….	2.861
v = 20 ……	2.528 …….	2.845
v = 21 ……	2.518 …….	2.831
v = 22 ……	2.508 …….	2.819
v = 23 ……	2.500 …….	2.807
v = 24 ……	2.492 …….	2.797
v = 25 ……	2.485 …….	2.787
v = 26 ……	2.479 …….	2.779
v = 27 ……	2.473 …….	2.771
v = 28 ……	2.467 …….	2.763
v = 29 ……	2.462 …….	2.756
v = 30 ……	2.457 …….	2.750
v = 31 ……	2.453 …….	2.744
v = 32 ……	2.449 …….	2.738

(continued on the next page)

p = …….	0.99 ……	0.995
v = 33 ……	2.445 …….	2.733
v = 34 ……	2.441 …….	2.728
v = 35 ……	2.438 …….	2.724
v = 36 ……	2.434 …….	2.719
v = 37 ……	2.431 …….	2.715
v = 38 ……	2.429 …….	2.712
v = 39 ……	2.426 …….	2.708
v = 40 ……	2.423 …….	2.704
v = 45 ……	2.412 …….	2.690
v = 50 ……	2.403 …….	2.678
v = 55 ……	2.396 …….	2.668
v = 60 ……	2.390 …….	2.660
v = 65 ……	2.385 …….	2.654
v = 70 ……	2.381 …….	2.648
v = 75 ……	2.377 …….	2.643
v = 80 ……	2.374 …….	2.639

(continued on the next page)

(Turn over)

p = ……. 0.99 …….. 0.995
v = 85 …… 2.371 …… 2.635
v = 90 …… 2.368 …… 2.632
v = 95 …… 2.366 …… 2.629
v = 100 ……. 2.364 ……. 2.626
v = 125 ……. 2.357 ……. 2.616
v = 150 ……. 2.351 ……. 2.609
v = 200 ……. 2.345 ……. 2.601
v = ∞……. 2.326 ……. 2.576

END OF TABLE 5

4. STATISTICAL TABLES

TABLE 6: PERCENTAGE POINTS OF THE χ^2 DISTRIBUTION

The table gives the values of x satisfying $P(X \leq x) = p$, where X is a random variable having the χ^2 distribution with ν degrees of freedom.

---

p = ...	0.005	0.01	0.025
v = 1	0.00004	0.0002	0.001
v = 2	0.010	0.020	0.051
v = 3	0.072	0.115	0.216
v = 4	0.207	0.297	0.484
v = 5	0.412	0.554	0.831
v = 6	0.676	0.872	1.237
v = 7	0.989	1.239	1.690
v = 8	1.344	1.646	2.180
v = 9	1.735	2.088	2.700
v = 10	2.156	2.558	3.247
v = 11	2.603	3.053	3.816
v = 12	3.074	3.571	4.404
v = 13	3.565	4.107	5.009
v = 14	4.075	4.660	5.629
v = 15	4.601	5.229	6.262
v = 16	5.142	5.812	6.908

(continued on the next page)

p = ……... 0.005 …..... 0.01 …….. 0.025
v = 17 …….. 5.697 …… 6.408 …… 7.564
v = 18 …….. 6.265 …… 7.015 …… 8.231
v = 19 …….. 6.844 …… 7.633 …… 8.907
v = 20 …….. 7.434 …… 8.260 …… 9.591
v = 21 …….. 8.034 …… 8.897 ….. 10.283
v = 22 …….. 8.643 …… 9.542 ….. 10.982
v = 23 …….. 9.260 ….. 10.196 ….. 11.689
v = 24 …….. 9.886 ….. 10.856 ….. 12.401
v = 25 …… 10.520 ….. 11.524 ….. 13.120
v = 26 …… 11.160 ….. 12.198 ….. 13.844
v = 27 …… 11.808 ….. 12.879 ….. 14.573
v = 28 …… 12.461 ….. 13.565 ….. 15.308
v = 29 …… 13.121 ….. 14.256 ….. 16.047
v = 30 …… 13.787 ….. 14.953 ….. 16.791
v = 31 …… 14.458 ….. 15.655 ….. 17.539
v = 32 …… 15.134 ….. 16.362 ….. 18.291

(continued on the next page)

(Turn over)

p = ……..... 0.005 …..... 0.01 …….. 0.025			
v = 33 ……	15.815 …..	17.074 …..	19.047
v = 34 ……	16.501 …..	17.789 …..	19.806
v = 35 ……	17.192 …..	18.509 …..	20.569
v = 36 ……	17.887 …..	19.223 …..	21.336
v = 37 ……	18.586 …..	19.960 …..	22.106
v = 38 ……	19.289 …..	20.691 …..	22.878
v = 39 ……	19.996 …..	21.426 …..	23.654
v = 40 ……	20.707 …..	22.164 …..	24.433
v = 45 ……	24.311 …..	25.901 …..	28.366
v = 50 ……	27.991 …..	29.707 …..	32.357
v = 55 ……	31.735 …..	33.570 …..	36.398
v = 60 ……	35.534 …..	37.485 …..	40.482
v = 65 ……	39.383 …..	41.444 …..	44.603
v = 70 ……	43.275 …..	45.442 …..	48.758
v = 75 ……	47.206 …..	49.475 …..	52.942
v = 80 ……	51.172 …..	53.540 …..	57.153

(continued on the next page)

p = ……...	0.005	……...	0.01	……..	0.025
v = 85 ……	55.170	…..	57.634	…..	61.389
v = 90 ……	59.196	…..	61.754	…..	65.647
v = 95 ……	63.250	…..	65.898	…..	69.925
v = 100 …..	67.328	…..	70.065	…..	74.222

p = 0.05 – 0.9 on the next page

(Turn over)

p = ……	0.05 ……..	0.1 ……...	0.9
v = 1 ……...	0.004 ……	0.016 ……	2.706
v = 2	0.103 ……	0.211 ……	4.605
v = 3	0.352 ……	0.584 ……	6.251
v = 4	0.711 ……	1.064 ……	7.779
v = 5	1.145 ……	1.610 ……	9.236
v = 6	1.635 ……	2.204 …..	10.645
v = 7	2.167 ……	2.833 …..	12.017
v = 8	2.733 ……	3.490 …..	13.362
v = 9	3.325 ……	4.168 …..	14.684
v = 10 ……..	3.940 ……	4.865 …..	15.987
v = 11 ……..	4.575 ……	5.578 …..	17.275
v = 12 ……..	5.226 ……	6.304 …..	18.549
v = 13 ……..	5.892 ……	7.042 …..	19.812
v = 14 ……..	6.571 ……	7.790 …..	21.064
v = 15 ……..	7.261 ……	8.547 …..	22.307
v = 16 ……..	7.962 ……	9.312 …..	23.542

(continued on the next page)

p = ……. 0.05 ……..... 0.1 ……..... 0.9			
v = 17 …….	8.672 ……	10.085 …..	24.769
v = 18 …….	9.390 ……	10.865 …..	25.989
v = 19 …….	10.117 ……	11.651 …..	27.204
v = 20 …….	10.851 ……	12.443 …..	28.412
v = 21 …….	11.591 ……	13.240 …..	29.615
v = 22 …….	12.338 ……	14.041 …..	30.813
v = 23 …….	13.091 ……	14.848 …..	32.007
v = 24 …….	13.848 ……	15.659 …..	33.196
v = 25 …….	14.611 ……	16.473 …..	34.382
v = 26 …….	15.379 ……	17.292 …..	35.563
v = 27 …….	16.151 ……	18.114 …..	36.741
v = 28 …….	16.928 ……	18.939 …..	37.916
v = 29 …….	17.708 ……	19.768 …..	39.087
v = 30 …….	18.493 ……	20.599 …..	40.256
v = 31 …….	19.281 ……	21.434 …..	41.422
v = 32 …….	20.072 ……	22.271 …..	42.585

(continued on the next page)

p = ……. 0.05 …… 0.1 ……... 0.9			
v = 33 …….	20.867 ……	23.110 …..	43.745
v = 34 …….	21.664 ……	23.952 …..	44.903
v = 35 …….	22.465 ……	24.797 …..	46.059
v = 36 …….	23.269 ……	25.643 …..	47.212
v = 37 …….	24.075 ……	26.492 …..	48.363
v = 38 …….	24.884 ……	27.343 …..	49.513
v = 39 …….	25.695 ……	28.196 …..	50.660
v = 40 …….	26.509 ……	29.051 …..	51.805
v = 45 …….	30.612 ……	33.350 …..	57.505
v = 50 …….	34.764 ……	37.689 …..	63.167
v = 55 …….	38.958 ……	42.060 …..	68.796
v = 60 …….	43.188 ……	46.459 …..	74.397
v = 65 …….	47.450 ……	50.883 …..	79.973
v = 70 …….	51.739 ……	55.329 …..	85.527
v = 75 …….	56.054 ……	59.795 …..	91.061
v = 80 …….	60.391 ……	64.278 …..	96.578

(continued on the next page)

p = ……. 0.05 …… 0.1 ……..... 0.9
v = 85 ……. 64.749 …… 68.777 …. 102.079
v = 90 ……. 69.126 …… 73.291 …. 107.565
v = 95 ……. 73.520 …… 77.818 …. 113.038
v = 100 …... 77.929 …… 82.358 …. 118.498

p = 0.95 – 0.99 on the next page

p = …….. 0.95 …… 0.975 …….. 0.99
v = 1 …..... 3.841 …….. 5.024 …….. 6.635
v = 2 ..... 5.991 …….. 7.378 …….. 9.210
v = 3 ..... 7.815 …….. 9.348 …… 11.345
v = 4 ..... 9.488 …… 11.143 …… 13.277
v = 5 ..... 11.070 …… 12.833 …… 15.086
v = 6 ..... 12.592 …… 14.449 …… 16.812
v = 7 ..... 14.067 …… 16.013 …… 18.475
v = 8 ..... 15.507 …… 17.535 …… 20.090
v = 9 ..... 16.919 …… 19.023 …… 21.666
v = 10 ……... 18.307 …… 20.483 …… 23.209
v = 11 ……... 19.675 …… 21.920 …… 24.725
v = 12 ……... 21.026 …… 23.337 …… 26.217
v = 13 ……... 22.362 …… 24.736 …… 27.688
v = 14 ……... 23.685 …… 26.119 …… 29.141
v = 15 ……... 24.996 …… 27.488 …… 30.578
v = 16 ……... 26.296 …… 28.845 …… 32.000

(continued on the next page)

p =	0.95	0.975	0.99
v = 17	27.587	30.191	33.409
v = 18	28.869	31.526	34.805
v = 19	30.144	32.852	36.191
v = 20	31.410	34.170	37.566
v = 21	32.671	35.479	38.932
v = 22	33.924	36.781	40.289
v = 23	35.172	38.076	41.638
v = 24	36.415	39.364	42.980
v = 25	37.652	40.646	44.314
v = 26	38.885	41.923	45.642
v = 27	40.113	43.195	46.963
v = 28	41.337	44.461	48.278
v = 29	42.557	45.722	49.588
v = 30	43.773	46.979	50.892
v = 31	44.985	48.232	52.191
v = 32	46.194	49.480	53.486

(continued on the next page)

p = ……..... 0.95 ……. 0.975 …….. 0.99
v = 33 …… 47.400 ……... 50.725 …… 54.776
v = 34 …… 48.602 ……... 51.996 …… 56.061
v = 35 …… 49.802 ……... 53.203 …… 57.342
v = 36 …… 50.998 ……... 54.437 …… 58.619
v = 37 …… 52.192 ……... 55.668 …… 59.892
v = 38 …… 53.384 ……... 56.896 …… 61.162
v = 39 …… 54.572 ……... 58.120 …… 62.428
v = 40 …… 55.758 ……... 59.342 …… 63.691
v = 45 …… 61.656 ……... 65.410 …… 69.957
v = 50 …… 67.505 ……... 71.420 …… 76.154
v = 55 …… 73.311 ……... 77.380 …… 82.292
v = 60 …… 79.082 ……... 83.298 …… 88.379
v = 65 …… 84.821 ……... 89.177 …… 94.422
v = 70 …… 90.531 ……... 95.023 ….. 100.425
v = 75 …… 96.217 ….. 100.839 ….. 106.393
v = 80 …….. 101.879 ….. 106.629 ….. 112.329

(continued on the next page)

(Turn over)

p = …… 0.95 …… 0.975 …….. 0.99			
v = 85 …….. 107.522 ….. 112.393 ….. 118.236			
v = 90 …….. 113.145 ….. 118.136 ….. 124.116			
v = 95 …….. 118.752 ….. 123.858 ….. 129.973			
v = 100 …… 124.342 ….. 129.561 ….. 135.807			

p = 0.995 on the next page

p = ……0.995

---

v = 1 …..... 7.879

v = 2 ..... 10.597

v = 3 ..... 12.838

v = 4 ..... 14.860

v = 5 ..... 16.750

v = 6 ..... 18.548

v = 7 ..... 20.278

v = 8 ..... 21.955

v = 9 ..... 23.589

v = 10 …..... 25.188

v = 11 …..... 26.757

v = 12 …..... 28.300

v = 13 …..... 29.819

v = 14 …..... 31.319

v = 15 …..... 32.801

v = 16 …..... 34.267

(continued on the next page)

p = …… 0.995

---

v = 17 …….. 35.718

v = 18 …… 37.156

v = 19 …… 38.582

v = 20 …… 39.997

v = 21 …… 41.401

v = 22 …… 42.796

v = 23 …… 44.181

v = 24 …… 45.559

v = 25 …… 46.928

v = 26 …… 48.290

v = 27 …… 49.645

v = 28 …… 50.993

v = 29 …… 52.336

v = 30 …… 53.672

v = 31 …… 55.003

v = 32 …… 56.328

(continued on the next page)

p = ……... 0.995

---

v = 33 …… 57.648

v = 34 …… 58.964

v = 35 …… 60.275

v = 36 …… 61.581

v = 37 …… 62.883

v = 38 …… 64.181

v = 39 …… 65.476

v = 40 …… 66.766

v = 45 …… 73.166

v = 50 …… 79.490

v = 55 …… 85.749

v = 60 …… 91.952

v = 65 …… 98.105

v = 70 …….. 104.215

v = 75 …….. 110.286

v = 80 …….. 116.321

(continued on the next page)

p = …… 0.995
v = 85 …….. 122.325
v = 90 …….. 128.299
v = 95 …….. 134.247
v = 100 …… 140.169

END OF TABLE 6

4. STATISTICAL TABLES

TABLE 7: PERCENTAGE POINTS OF THE F-DISTRIBUTION

The tables give the values of X satisfying

$P(X \leq x) = p$, where X is a random variable having the F-distribution with v_1 degrees of freedom in the numerator and v_2 degrees of freedom in the denominator.

CONTENTS

(Turn over)

F-DISTRIBUTION (p = 0.995)

Use for one-tail tests at significance level 0.5% or two-tail tests at significance level 1%.

v_1 =	1	2	3
v_2 = 1	16211	20000	21615
v_2 = 2	198.5	199.0	199.2
v_2 = 3	55.55	49.80	47.47
v_2 = 4	31.33	26.28	24.26
v_2 = 5	22.78	18.31	16.53
v_2 = 6	18.635	14.544	12.917
v_2 = 7	16.236	12.404	10.882
v_2 = 8	14.688	11.042	9.596
v_2 = 9	13.614	10.107	8.717
v_2 = 10	12.826	9.427	8.081
v_2 = 11	12.226	8.912	7.600
v_2 = 12	11.754	8.510	7.226

(continued on the next page)

v_1 = …….. 1 …….. 2 ……. 3			
v_2 = 13 ……	11.374 …….	8.186 …….	6.926
v_2 = 14 ……	11.060 …….	7.922 …….	6.680
v_2 = 15 ……	10.798 …….	7.701 …….	6.476
v_2 = 20 ……..	9.944 …….	6.986 …….	5.818
v_2 = 25 ……..	9.475 …….	6.598 …….	5.462
v_2 = 30 ……..	9.180 …….	6.355 …….	5.239
v_2 = 40 ……..	8.828 …….	6.066 …….	4.976
v_2 = 50 ……..	8.626 …….	5.902 …….	4.826
v_2 = 100 ……	8.241 …….	5.589 …….	4.542
v_2 = ∞ …….…	7.879 …….	5.298 …….	4.279

v_1 = 4 – 6 on the next page

v_1 = …… 4 …… 5 …… 6

---

v_2 = 1 …… 22500 …… 23056 ……. 23437

v_2 = 2 …… 199.2 …… 199.3 …….. 199.3

v_2 = 3 …….. 46.19 …… 45.39 …….. 44.84

v_2 = 4 …….. 23.15 …… 22.46 …….. 21.97

v_2 = 5 ..... 15.56 …… 14.94 …….. 14.51

v_2 = 6 ..... 12.028 ….. 11.464 …… 11.073

v_2 = 7 ..... 10.050 …… 9.522 …….. 9.155

v_2 = 8 ..... 8.805 …… 8.302 …….. 7.952

v_2 = 9 ..... 7.956 …… 7.471 …….. 7.134

v_2 = 10 …….. 7.343 …… 6.872 …….. 6.545

v_2 = 11 …….. 6.881 …… 6.422 …….. 6.102

v_2 = 12 …….. 6.521 …… 6.071 …….. 5.757

v_2 = 13 …….. 6.233 …… 5.791 …….. 5.482

v_2 = 14 …….. 5.998 …… 5.562 …….. 5.257

v_2 = 15 …….. 5.803 …… 5.372 …….. 5.071

(continued on the next page)

v_1 =	4	5	6
v_2 = 20	5.174	4.762	4.472
v_2 = 25	4.835	4.433	4.150
v_2 = 30	4.623	4.228	3.949
v_2 = 40	4.374	3.986	3.713
v_2 = 50	4.232	3.849	3.579
v_2 = 100	3.963	3.589	3.325
v_2 = ∞	3.715	3.350	3.091

v_1 = 7 – 9 on the next page

(Turn over)

v_1 = ... 7 ..... 8 9

---

v_2 = 1 ..... 23715 ..... 23925 24091

v_2 = 2 ..... 199.4 ..... 199.4 ..... 199.4

v_2 = 3 ..... 44.43 ..... 44.13 ..... 43.88

v_2 = 4 ..... 21.62 ..... 21.35 ..... 21.14

v_2 = 5 ..... 14.20 ..... 13.96 ..... 13.77

v_2 = 6 ..... 10.786 ..... 10.566 ..... 10.391

v_2 = 7 ..... 8.885 ..... 8.678 ..... 8.514

v_2 = 8 ..... 7.694 ..... 7.496 ..... 7.339

v_2 = 9 ..... 6.885 ..... 6.693 ..... 6.541

v_2 = 10 ..... 6.302 ..... 6.116 ..... 5.968

v_2 = 11 ..... 5.865 ..... 5.682 ..... 5.537

v_2 = 12 ..... 5.525 ..... 5.345 ..... 5.202

v_2 = 13 ..... 5.253 ..... 5.076 ..... 4.935

v_2 = 14 ..... 5.031 ..... 4.857 ..... 4.717

v_2 = 15 ..... 4.847 ..... 4.674 ..... 4.536

(continued on the next page)

(Turn over)

v_1 =	7	8	9
v_2 = 20	4.257	4.090	3.956
v_2 = 25	3.939	3.776	3.645
v_2 = 30	3.742	3.580	3.450
v_2 = 40	3.509	3.350	3.222
v_2 = 50	3.376	3.219	3.092
v_2 = 100	3.127	2.972	2.847
v_2 = ∞	2.897	2.744	2.621

v_1 = 10 – 12 on the next page

v_1 = ……. 10 ……... 11 …… 12

---

v_2 = 1 …… 24224 …… 24334 ……. 24426

v_2 = 2 …… 199.4 …… 199.4 …….. 199.4

v_2 = 3 …….. 43.69 …… 43.52 …….. 43.39

v_2 = 4 …….. 20.97 …… 20.82 …….. 20.70

v_2 = 5 ..... 13.62 …… 13.49 …….. 13.38

v_2 = 6 ..... 10.250 ….. 10.133 …… 10.034

v_2 = 7 ..... 8.380 …… 8.270 …….. 8.176

v_2 = 8 ..... 7.211 …… 7.104 …….. 7.015

v_2 = 9 ..... 6.417 …… 6.314 …….. 6.227

v_2 = 10 …….. 5.847 …… 5.746 …….. 5.661

v_2 = 11 …….. 5.418 …… 5.320 …….. 5.236

v_2 = 12 …….. 5.085 …… 4.988 …….. 4.906

v_2 = 13 …….. 4.820 …… 4.724 …….. 4.643

v_2 = 14 …….. 4.603 …… 4.508 …….. 4.428

v_2 = 15 …….. 4.424 …… 4.329 …….. 4.250

(continued on the next page)

v_1 =	10	11	12
v_2 = 20	3.847	3.756	3.678
v_2 = 25	3.537	3.447	3.370
v_2 = 30	3.344	3.255	3.179
v_2 = 40	3.117	3.028	2.953
v_2 = 50	2.988	2.900	2.825
v_2 = 100	2.744	2.657	2.583
v_2 = ∞	2.519	2.432	2.358

v_1 = 15 – 25 on the next page

v_1 = ... 15 ..... 20 25

---

v_2 = 1 ..... 24630 ..... 24836 24960

v_2 = 2 ..... 199.4 ..... 199.4 ..... 199.5

v_2 = 3 ..... 43.08 ..... 42.78 ..... 42.59

v_2 = 4 ..... 20.44 ..... 20.17 ..... 20.00

v_2 = 5 ..... 13.15 ..... 12.90 ..... 12.76

v_2 = 6 ..... 9.814 ..... 9.589 ..... 9.451

v_2 = 7 ..... 7.968 ..... 7.754 ..... 7.623

v_2 = 8 ..... 6.814 ..... 6.608 ..... 6.482

v_2 = 9 ..... 6.032 ..... 5.832 ..... 5.708

v_2 = 10 ..... 5.471 ..... 5.274 ..... 5.153

v_2 = 11 ..... 5.049 ..... 4.855 ..... 4.736

v_2 = 12 ..... 4.721 ..... 4.530 ..... 4.412

v_2 = 13 ..... 4.460 ..... 4.270 ..... 4.153

v_2 = 14 ..... 4.247 ..... 4.059 ..... 3.942

v_2 = 15 ..... 4.070 ..... 3.883 ..... 3.766

(continued on the next page)

(Turn over)

v_1 =	15	20	25
v_2 = 20	3.502	3.318	3.203
v_2 = 25	3.196	3.013	2.898
v_2 = 30	3.006	2.823	2.708
v_2 = 40	2.781	2.598	2.482
v_2 = 50	2.653	2.470	2.353
v_2 = 100	2.411	2.227	2.108
v_2 = ∞	2.187	2.000	1.877

v_1 = 30 – 50 on the next page

(Turn over)

v_1 =	30	40	50
v_2 = 1	25044	25148	25211
v_2 = 2	199.5	199.5	199.5
v_2 = 3	42.47	42.31	42.21
v_2 = 4	19.89	19.75	19.67
v_2 = 5	12.66	12.53	12.45
v_2 = 6	9.358	9.241	9.170
v_2 = 7	7.534	7.422	7.354
v_2 = 8	6.396	6.288	6.222
v_2 = 9	5.625	5.519	5.454
v_2 = 10	5.071	4.966	4.902
v_2 = 11	4.654	4.551	4.488
v_2 = 12	4.331	4.228	4.165
v_2 = 13	4.073	3.970	3.908
v_2 = 14	3.862	3.760	3.697
v_2 = 15	3.687	3.585	3.523

(continued on the next page)

v_1 = ... 30 ..... 40 50			
v_2 = 20 ..... 3.123 ..... 3.022 ..... 2.959			
v_2 = 25 ..... 2.819 ..... 2.716 ..... 2.652			
v_2 = 30 ..... 2.628 ..... 2.524 ..... 2.459			
v_2 = 40 ..... 2.401 ..... 2.296 ..... 2.230			
v_2 = 50 ..... 2.272 ..... 2.164 ..... 2.097			
v_2 = 100 ..... 2.024 ..... 1.912 ..... 1.840			
v_2 = ∞ ..... 1.789 ..... 1.669 ..... 1.590			

v_1 = 100 – ∞ on the next page

(Turn over)

v_1 = …… 100 …… ∞

---

v_2 = 1 …… 25337 …… 25464

v_2 = 2 …… 199.5 …… 199.5

v_2 = 3 …….. 42.02 …… 41.83

v_2 = 4 …….. 19.50 …… 19.32

v_2 = 5 ..... 12.30 …… 12.14

v_2 = 6 ..... 9.026 …… 8.879

v_2 = 7 ..... 7.217 …… 7.076

v_2 = 8 ..... 6.088 …… 5.951

v_2 = 9 ..... 5.322 …… 5.188

v_2 = 10 …….. 4.772 …… 4.639

v_2 = 11 …….. 4.359 …… 4.226

v_2 = 12 …….. 4.037 …… 3.904

v_2 = 13 …….. 3.780 …… 3.647

v_2 = 14 …….. 3.569 …… 3.436

(continued on the next page)

v_1 = ...	100	∞
v_2 = 15	3.394	3.260
v_2 = 20	2.828	2.690
v_2 = 25	2.519	2.377
v_2 = 30	2.323	2.176
v_2 = 40	2.088	1.932
v_2 = 50	1.951	1.786
v_2 = 100	1.681	1.485
v_2 = ∞	1.402	1.001

F-DISTRIBUTION (p = 0.99) on the next page

(Turn over)

F-DISTRIBUTION (p = 0.99)

Use for one-tail tests at significance level 1% or two-tail tests at significance level 2%.

v_2 = v_1 =	1	2	3
v_2 = 1	4052	5000	5403
v_2 = 2	98.50	99.00	99.17
v_2 = 3	34.12	30.82	29.46
v_2 = 4	21.20	18.00	16.69
v_2 = 5	16.26	13.27	12.06
v_2 = 6	13.745	10.925	9.780
v_2 = 7	12.246	9.547	8.451
v_2 = 8	11.259	8.649	7.591
v_2 = 9	10.561	8.022	6.992
v_2 = 10	10.044	7.559	6.552
v_2 = 11	9.646	7.206	6.217
v_2 = 12	9.330	6.927	5.953

(continued on the next page)

v_1 =	1	2	3
v_2 = 13	9.074	6.701	5.739
v_2 = 14	8.862	6.515	5.564
v_2 = 15	8.683	6.359	5.417
v_2 = 20	8.096	5.849	4.938
v_2 = 25	7.770	5.568	4.675
v_2 = 30	7.562	5.390	4.510
v_2 = 40	7.314	5.179	4.313
v_2 = 50	7.171	5.057	4.199
v_2 = 100	6.895	4.824	3.984
v_2 = ∞	6.635	4.605	3.782

v_1 = 4 – 6 on the next page

(Turn over)

v_1 = …… 4 …….. 5 …….. 6

---

v_2 = 1 …… 5625 ……. 5764 …… 5859

v_2 = 2 …….. 99.25 …… 99.30 …….. 99.33

v_2 = 3 …….. 28.71 …… 28.24 …….. 27.91

v_2 = 4 …….. 15.98 …… 15.52 …….. 15.21

v_2 = 5 ..... 11.39 …… 10.97 …….. 10.67

v_2 = 6 ..... 9.148 …… 8.746 …….. 8.466

v_2 = 7 ..... 7.847 …… 7.460 …….. 7.191

v_2 = 8 ..... 7.006 …… 6.632 …….. 6.371

v_2 = 9 ..... 6.422 …… 6.057 …….. 5.802

v_2 = 10 …….. 5.994 …… 5.636 …….. 5.386

v_2 = 11 …….. 5.668 …… 5.316 …….. 5.069

v_2 = 12 …….. 5.412 …… 5.064 …….. 4.821

v_2 = 13 …….. 5.205 …… 4.862 …….. 4.620

v_2 = 14 …….. 5.035 …… 4.695 …….. 4.456

v_2 = 15 …….. 4.893 …… 4.556 …….. 4.318

(continued on the next page)

v_1 =	4	5	6
v_2 = 20	4.431	4.103	3.871
v_2 = 25	4.177	3.855	3.627
v_2 = 30	4.018	3.699	3.473
v_2 = 40	3.828	3.514	3.291
v_2 = 50	3.720	3.408	3.186
v_2 = 100	3.513	3.206	2.988
v_2 = ∞	3.319	3.017	2.802

v_1 = 7 – 9 on the next page

(Turn over)

v_1 = ... 7 ..... 8 9

---

v_2 = 1 ..... 5928 ..... 5981 6022

v_2 = 2 ..... 99.36 ..... 99.37 ..... 99.39

v_2 = 3 ..... 27.67 ..... 27.49 ..... 27.35

v_2 = 4 ..... 14.98 ..... 14.80 ..... 14.66

v_2 = 5 ..... 10.46 ..... 10.29 ..... 10.16

v_2 = 6 ..... 8.260 ..... 8.102 ..... 7.976

v_2 = 7 ..... 6.993 ..... 6.840 ..... 6.719

v_2 = 8 ..... 6.178 ..... 6.029 ..... 5.911

v_2 = 9 ..... 5.613 ..... 5.467 ..... 5.351

v_2 = 10 ..... 5.200 ..... 5.057 ..... 4.942

v_2 = 11 ..... 4.886 ..... 4.744 ..... 4.632

v_2 = 12 ..... 4.640 ..... 4.499 ..... 4.388

v_2 = 13 ..... 4.441 ..... 4.302 ..... 4.191

v_2 = 14 ..... 4.278 ..... 4.140 ..... 4.030

v_2 = 15 ..... 4.142 ..... 4.004 ..... 3.895

(continued on the next page)

v_1 =	7	8	9
v_2 = 20	3.699	3.564	3.457
v_2 = 25	3.457	3.324	3.217
v_2 = 30	3.304	3.173	3.067
v_2 = 40	3.124	2.993	2.888
v_2 = 50	3.020	2.890	2.785
v_2 = 100	2.823	2.694	2.590
v_2 = ∞	2.639	2.511	2.407

v_1 = 10 – 12 on the next page

v_1 =	10	11	12
v_2 = 1	6056	6083	6106
v_2 = 2	99.40	99.41	99.42
v_2 = 3	27.23	27.13	27.05
v_2 = 4	14.55	14.45	14.37
v_2 = 5	10.05	9.96	9.89
v_2 = 6	7.874	7.790	7.718
v_2 = 7	6.620	6.538	6.469
v_2 = 8	5.814	5.734	5.667
v_2 = 9	5.257	5.178	5.111
v_2 = 10	4.849	4.772	4.706
v_2 = 11	4.539	4.462	4.397
v_2 = 12	4.296	4.220	4.155
v_2 = 13	4.100	4.025	3.960
v_2 = 14	3.939	3.864	3.800
v_2 = 15	3.805	3.730	3.666

(continued on the next page)

v_1 =	10	11	12
v_2 = 20	3.368	3.294	3.231
v_2 = 25	3.129	3.056	2.993
v_2 = 30	2.979	2.906	2.843
v_2 = 40	2.801	2.727	2.665
v_2 = 50	2.698	2.625	2.562
v_2 = 100	2.503	2.430	2.368
v_2 = ∞	2.321	2.248	2.185

v_1 = 15 – 25 on the next page

v_1 =	15	20	25
v_2 = 1	6157	6209	6240
v_2 = 2	99.43	99.45	99.46
v_2 = 3	26.87	26.69	26.58
v_2 = 4	14.20	14.02	13.91
v_2 = 5	9.72	9.55	9.45
v_2 = 6	7.559	7.396	7.296
v_2 = 7	6.314	6.155	6.058
v_2 = 8	5.515	5.359	5.263
v_2 = 9	4.962	4.808	4.713
v_2 = 10	4.558	4.405	4.311
v_2 = 11	4.251	4.099	4.005
v_2 = 12	4.010	3.858	3.765
v_2 = 13	3.815	3.665	3.571
v_2 = 14	3.656	3.505	3.412
v_2 = 15	3.522	3.372	3.278

(continued on the next page)

v_1 =	15	20	25
v_2 = 20	3.088	2.938	2.843
v_2 = 25	2.850	2.699	2.604
v_2 = 30	2.700	2.549	2.453
v_2 = 40	2.522	2.369	2.271
v_2 = 50	2.419	2.265	2.167
v_2 = 100	2.223	2.067	1.965
v_2 = ∞	2.039	1.878	1.773

v_1 = 30 – 50 on the next page

(Turn over)

v_1 =	30	40	50
v_2 = 1	6261	6287	6303
v_2 = 2	99.47	99.47	99.48
v_2 = 3	26.50	26.41	26.35
v_2 = 4	13.84	13.75	13.69
v_2 = 5	9.38	9.29	9.24
v_2 = 6	7.229	7.143	7.091
v_2 = 7	5.992	5.908	5.858
v_2 = 8	5.198	5.116	5.065
v_2 = 9	4.649	4.567	4.517
v_2 = 10	4.247	4.165	4.115
v_2 = 11	3.941	3.860	3.810
v_2 = 12	3.701	3.619	3.569
v_2 = 13	3.507	3.425	3.375
v_2 = 14	3.348	3.266	3.215
v_2 = 15	3.214	3.132	3.081

(continued on the next page)

v_1 = ……... 30 …… 40 ……... 50			
v_2 = 20 …….. 2.778 ……. 2.695 ……. 2.643			
v_2 = 25 …….. 2.538 ……. 2.453 ……. 2.400			
v_2 = 30 …….. 2.386 ……. 2.299 ……. 2.245			
v_2 = 40 …….. 2.203 ……. 2.114 ……. 2.058			
v_2 = 50 …….. 2.098 ……. 2.007 ……. 1.949			
v_2 = 100 …… 1.893 ……. 1.797 ……. 1.735			
v_2 = ∞ …… 1.696 ……. 1.592 ……. 1.523			

v_1 = 100 – ∞ on the next page

(Turn over)

v_1 = ……. 100 …… ∞

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v_2 = 1 ……. 6334 …….. 6366

v_2 = 2 ……. 99.49 …… 99.50

v_2 = 3 ……. 26.24 …… 26.13

v_2 = 4 ……. 13.58 …… 13.46

v_2 = 5 ..... 9.13 …….. 9.02

v_2 = 6 ..... 6.987 …… 6.880

v_2 = 7 ..... 5.755 …… 5.650

v_2 = 8 ..... 4.963 …… 4.859

v_2 = 9 ..... 4.415 …… 4.311

v_2 = 10 ……. 4.014 …… 3.909

v_2 = 11 ……. 3.708 …… 3.602

v_2 = 12 ……. 3.467 …… 3.361

v_2 = 13 ……. 3.272 …… 3.165

v_2 = 14 ……. 3.112 …… 3.004

(continued on the next page)

v_1 = ……... 100 ……. ∞	
v_2 = 15 …….. 2.977 …….	2.868
v_2 = 20 …….. 2.535 …….	2.421
v_2 = 25 …….. 2.289 …….	2.169
v_2 = 30 …….. 2.131 …….	2.006
v_2 = 40 …….. 1.938 …….	1.805
v_2 = 50 …….. 1.825 …….	1.683
v_2 = 100 …… 1.598 …….	1.427
v_2 = ∞ ……. 1.358 …….	1.000

F-DISTRIBUTION (p = 0.975) on the next page

(Turn over)

F-DISTRIBUTION (p = 0.975)

Use for one-tail tests at significance level 2.5% or two-tail tests at significance level 5%.

v_1 =	1	2	3
v_2 = 1	647.8	799.5	864.2
v_2 = 2	38.51	39.00	39.17
v_2 = 3	17.44	16.04	15.44
v_2 = 4	12.22	10.65	9.98
v_2 = 5	10.01	8.43	7.76
v_2 = 6	8.813	7.260	6.599
v_2 = 7	8.073	6.542	5.890
v_2 = 8	7.571	6.059	5.416
v_2 = 9	7.209	5.715	5.078
v_2 = 10	6.937	5.456	4.826
v_2 = 11	6.724	5.256	4.630
v_2 = 12	6.554	5.096	4.474

(continued on the next page)

v_1 =	1	2	3
v_2 = 13	6.414	4.965	4.347
v_2 = 14	6.298	4.857	4.242
v_2 = 15	6.200	4.765	4.153
v_2 = 20	5.871	4.461	3.859
v_2 = 25	5.686	4.291	3.694
v_2 = 30	5.568	4.182	3.589
v_2 = 40	5.424	4.051	3.463
v_2 = 50	5.340	3.975	3.390
v_2 = 100	5.179	3.828	3.250
v_2 = ∞	5.024	3.689	3.116

v_1 = 4 – 6 on the next page

v_1 =	4	5	6
v_2 = 1	899.6	921.8	937.1
v_2 = 2	39.25	39.30	39.33
v_2 = 3	15.10	14.88	14.73
v_2 = 4	9.60	9.36	9.20
v_2 = 5	7.39	7.15	6.98
v_2 = 6	6.227	5.988	5.820
v_2 = 7	5.523	5.285	5.119
v_2 = 8	5.053	4.817	4.652
v_2 = 9	4.718	4.484	4.320
v_2 = 10	4.468	4.236	4.072
v_2 = 11	4.275	4.044	3.881
v_2 = 12	4.121	3.891	3.728
v_2 = 13	3.996	3.767	3.604
v_2 = 14	3.892	3.663	3.501
v_2 = 15	3.804	3.576	3.415

(continued on the next page)

v_1 =	4	5	6
v_2 = 20	3.515	3.289	3.128
v_2 = 25	3.353	3.129	2.969
v_2 = 30	3.250	3.026	2.867
v_2 = 40	3.126	2.904	2.744
v_2 = 50	3.054	2.833	2.674
v_2 = 100	2.917	2.696	2.537
v_2 = ∞	2.786	2.567	2.408

v_1 = 7 – 9 on the next page

v_1 = …….. 7 ……..... 8 …….. 9

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v_2 = 1 …… 948.2 …… 956.7 ……. 963.3

v_2 = 2 …….. 39.36 …… 39.37 ……. 39.39

v_2 = 3 …….. 14.62 …… 14.54 ……. 14.47

v_2 = 4 ……. 9.07 …….. 8.98 ……. 8.90

v_2 = 5 ..... 6.85 …….. 6.76 ……. 6.68

v_2 = 6 ..... 5.695 …… 5.600 …….. 5.523

v_2 = 7 ..... 4.995 …… 4.899 …….. 4.823

v_2 = 8 ..... 4.529 …… 4.433 …….. 4.357

v_2 = 9 ..... 4.197 …… 4.102 …….. 4.026

v_2 = 10 …….. 3.950 …… 3.855 …….. 3.779

v_2 = 11 …….. 3.759 …… 3.664 …….. 3.588

v_2 = 12 …….. 3.607 …… 3.512 …….. 3.436

v_2 = 13 …….. 3.483 …… 3.388 …….. 3.312

v_2 = 14 …….. 3.380 …… 2.285 …….. 3.209

v_2 = 15 …….. 3.293 …… 3.199 …….. 3.123

(continued on the next page)

v_1 =	7	8	9
v_2 = 20	3.007	2.913	2.837
v_2 = 25	2.848	2.753	2.677
v_2 = 30	2.746	2.651	2.575
v_2 = 40	2.624	2.529	2.452
v_2 = 50	2.553	2.458	2.381
v_2 = 100	2.417	2.321	2.244
v_2 = ∞	2.288	2.192	2.114

v_1 = 10 – 12 on the next page

v_1 =	10	11	12
v_2 = 1	968.6	973.0	976.7
v_2 = 2	39.40	39.41	39.41
v_2 = 3	14.42	14.37	14.34
v_2 = 4	8.84	8.79	8.75
v_2 = 5	6.62	6.57	6.52
v_2 = 6	5.461	5.410	5.366
v_2 = 7	4.761	4.709	4.666
v_2 = 8	4.295	4.243	4.200
v_2 = 9	3.964	3.912	3.868
v_2 = 10	3.717	3.665	3.621
v_2 = 11	3.526	3.474	3.430
v_2 = 12	3.374	3.321	3.277
v_2 = 13	3.250	3.197	3.153
v_2 = 14	3.147	3.095	3.050
v_2 = 15	3.060	3.008	2.963

(continued on the next page)

v_1 = ……... 10 ……... 11 …… 12			
v_2 = 20 …….. 2.774 ……. 2.721 ……. 2.676			
v_2 = 25 …….. 2.613 ……. 2.560 ……. 2.515			
v_2 = 30 …….. 2.511 ……. 2.458 ……. 2.412			
v_2 = 40 …….. 2.388 ……. 2.334 ……. 2.288			
v_2 = 50 …….. 2.317 ……. 2.263 ……. 2.216			
v_2 = 100 …… 2.179 ……. 2.125 ……. 2.077			
v_2 = ∞ ..…… 2.048 ……. 1.993 ……. 1.945			

v_1 = 15 – 25 on the next page

v_1 = …….. 15 ……. 20 …… 25

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v_2 = 1 …… 984.9 …… 993.1 …….. 998.1

v_2 = 2 …….. 39.43 …… 39.45 …….. 39.46

v_2 = 3 …….. 14.25 …… 14.17 …….. 14.12

v_2 = 4 ……. 8.66 …….. 8.56 ……. 8.50

v_2 = 5 ..... 6.43 …….. 6.33 ……. 6.27

v_2 = 6 ..... 5.269 …… 5.168 …….. 5.107

v_2 = 7 ..... 4.568 …… 4.467 …….. 4.405

v_2 = 8 ..... 4.101 …… 3.999 …….. 3.937

v_2 = 9 ..... 3.769 …… 3.667 …….. 3.604

v_2 = 10 …….. 3.522 …… 3.419 …….. 3.355

v_2 = 11 …….. 3.330 …… 3.226 …….. 3.162

v_2 = 12 …….. 3.177 …… 3.073 …….. 3.008

v_2 = 13 …….. 3.053 …… 2.948 …….. 2.882

v_2 = 14 …….. 2.949 …… 2.844 …….. 2.778

v_2 = 15 …….. 2.862 …… 2.756 …….. 2.689

(continued on the next page)

v_1 =	15	20	25
v_2 = 20	2.573	2.464	2.396
v_2 = 25	2.411	2.300	2.230
v_2 = 30	2.307	2.195	2.124
v_2 = 40	2.182	2.068	1.994
v_2 = 50	2.109	1.993	1.919
v_2 = 100	1.968	1.849	1.770
v_2 = ∞	1.833	1.708	1.626

v_1 = 30 – 50 on the next page

v_1 =	30	40	50
v_2 = 1	1001.4	1005.6	1008.1
v_2 = 2	39.46	39.47	39.48
v_2 = 3	14.08	14.04	14.01
v_2 = 4	8.46	8.41	8.38
v_2 = 5	6.23	6.18	6.14
v_2 = 6	5.065	5.012	4.980
v_2 = 7	4.362	4.309	4.276
v_2 = 8	3.894	3.840	3.807
v_2 = 9	3.560	3.505	3.472
v_2 = 10	3.311	3.255	3.221
v_2 = 11	3.118	3.061	3.027
v_2 = 12	2.963	2.906	2.871
v_2 = 13	2.837	2.780	2.744
v_2 = 14	2.732	2.674	2.638
v_2 = 15	2.644	2.585	2.549

(continued on the next page)

v_1 =	30	40	50
v_2 = 20	2.349	2.287	2.249
v_2 = 25	2.182	2.118	2.079
v_2 = 30	2.074	2.009	1.968
v_2 = 40	1.943	1.875	1.832
v_2 = 50	1.866	1.796	1.752
v_2 = 100	1.715	1.640	1.592
v_2 = ∞	1.566	1.484	1.428

v_1 = 100 – ∞ on the next page

v_1 = ……. 100 ……. ∞

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v_2 = 1 ….. 1013.2 ….. 1018.3

v_2 = 2 …….. 39.49 ……. 39.50

v_2 = 3 …….. 13.96 ……. 13.90

v_2 = 4 ……. 8.32 ……. 8.26

v_2 = 5 ..... 6.08 ……. 6.02

v_2 = 6 ..... 4.915 …….. 4.849

v_2 = 7 ..... 4.210 …….. 4.142

v_2 = 8 ..... 3.739 …….. 3.670

v_2 = 9 ..... 3.403 …….. 3.333

v_2 = 10 …….. 3.152 …….. 3.080

v_2 = 11 …….. 2.956 …….. 2.883

v_2 = 12 …….. 2.800 …….. 2.725

v_2 = 13 …….. 2.671 …….. 2.595

v_2 = 14 …….. 2.565 …….. 2.487

(continued on the next page)

v_1 = ... 100 ..... ∞
v_2 = 15 ..... 2.474 ..... 2.395
v_2 = 20 ..... 2.170 ..... 2.085
v_2 = 25 ..... 1.996 ..... 1.906
v_2 = 30 ..... 1.882 ..... 1.787
v_2 = 40 ..... 1.741 ..... 1.637
v_2 = 50 ..... 1.656 ..... 1.545
v_2 = 100 ..... 1.483 ..... 1.347
v_2 = ∞ ..... 1.296 ..... 1.000

F-DISTRIBUTION (p = 0.95) on the next page

(Turn over)

F-DISTRIBUTION (p= 0.95)

Use for one-tail tests at significance level 5% or two-tail tests at significance level 10%.

v_1 =	1	2	3
v_2 = 1	161.4	199.5	215.7
v_2 = 2	18.51	19.00	19.16
v_2 = 3	10.13	9.55	9.28
v_2 = 4	7.71	6.94	6.59
v_2 = 5	6.61	5.79	5.41
v_2 = 6	5.987	5.143	4.757
v_2 = 7	5.591	4.737	4.347
v_2 = 8	5.318	4.459	4.066
v_2 = 9	5.117	4.256	3.863
v_2 = 10	4.965	4.103	3.708
v_2 = 11	4.844	3.982	3.587
v_2 = 12	4.747	3.885	3.490

(continued on the next page)

v_1 =	1	2	3
v_2 = 13	4.667	3.806	3.411
v_2 = 14	4.600	3.739	3.344
v_2 = 15	4.543	3.682	3.287
v_2 = 20	4.351	3.493	3.098
v_2 = 25	4.242	3.385	2.991
v_2 = 30	4.171	3.316	2.922
v_2 = 40	4.085	3.232	2.839
v_2 = 50	4.034	3.183	2.790
v_2 = 100	3.936	3.087	2.696
v_2 = ∞	3.841	2.996	2.605

v_1 = 4 – 6 on the next page

(Turn over)

v_1 = …….. 4 …… 5 …… 6

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v_2 = 1 …… 224.6 …… 230.2 ……. 234.0

v_2 = 2 …….. 19.25 …… 19.30 ……. 19.33

v_2 = 3 …… 9.12 …….. 9.01 …… 8.94

v_2 = 4 …… 6.39 …….. 6.26 …… 6.16

v_2 = 5 ..... 5.19 …….. 5.05 …… 4.95

v_2 = 6 ..... 4.534 …… 4.387 …….. 4.284

v_2 = 7 ..... 4.120 …… 3.972 …….. 3.866

v_2 = 8 ..... 3.838 …… 3.688 …….. 3.581

v_2 = 9 ..... 3.633 …… 3.482 …….. 3.374

v_2 = 10 …….. 3.478 …… 3.326 …….. 3.217

v_2 = 11 …….. 3.357 …… 3.204 …….. 3.095

v_2 = 12 …….. 3.259 …… 3.106 …….. 2.996

v_2 = 13 …….. 3.179 …… 3.025 …….. 2.915

v_2 = 14 …….. 3.112 …… 2.958 …….. 2.848

v_2 = 15 …….. 3.056 …… 2.901 …….. 2.790

(continued on the next page)

v_1 =	4	5	6
v_2 = 20	2.866	2.711	2.599
v_2 = 25	2.759	2.603	2.490
v_2 = 30	2.690	2.534	2.421
v_2 = 40	2.606	2.449	2.336
v_2 = 50	2.557	2.400	2.286
v_2 = 100	2.463	2.305	2.191
v_2 = ∞	2.372	2.214	2.099

v_1 = 7 – 9 on the next page

v_1 = …….. 7 …… 8 …… 9

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v_2 = 1 …… 236.8 …… 238.9 ……. 240.5

v_2 = 2 …….. 19.35 …… 19.37 ……. 19.38

v_2 = 3 …… 8.89 …….. 8.85 …… 8.81

v_2 = 4 …… 6.09 …….. 6.04 …… 6.00

v_2 = 5 ..... 4.88 …….. 4.82 …… 4.77

v_2 = 6 ..... 4.207 …… 4.147 …….. 4.099

v_2 = 7 ..... 3.787 …… 3.726 …….. 3.677

v_2 = 8 ..... 3.500 …… 3.438 …….. 3.388

v_2 = 9 ..... 3.293 …… 3.230 …….. 3.179

v_2 = 10 …….. 3.135 …… 3.072 …….. 3.020

v_2 = 11 …….. 3.012 …… 2.948 …….. 2.896

v_2 = 12 …….. 2.913 …… 2.849 …….. 2.796

v_2 = 13 …….. 2.832 …… 2.767 …….. 2.714

v_2 = 14 …….. 2.764 …… 2.699 …….. 2.646

v_2 = 15 …….. 2.707 …… 2.641 …….. 2.588

(continued on the next page)

v_1 =	7	8	9
v_2 = 20	2.514	2.447	2.393
v_2 = 25	2.405	2.337	2.282
v_2 = 30	2.334	2.266	2.211
v_2 = 40	2.249	2.180	2.124
v_2 = 50	2.199	2.130	2.073
v_2 = 100	2.103	2.032	1.975
v_2 = ∞	2.010	1.938	1.880

v_1 = 10 – 12 on the next page

v_1 =	10	11	12
v_2 = 1	241.9	243.0	243.9
v_2 = 2	19.40	19.40	19.41
v_2 = 3	8.79	8.76	8.74
v_2 = 4	5.96	5.94	5.91
v_2 = 5	4.74	4.70	4.68
v_2 = 6	4.060	4.027	4.000
v_2 = 7	3.637	3.603	3.575
v_2 = 8	3.347	3.313	3.284
v_2 = 9	3.137	3.102	3.073
v_2 = 10	2.978	2.943	2.913
v_2 = 11	2.854	2.818	2.788
v_2 = 12	2.753	2.717	2.687
v_2 = 13	2.671	2.635	2.604
v_2 = 14	2.602	2.565	2.534
v_2 = 15	2.544	2.507	2.475

(continued on the next page)

v_1 = ……... 10 ……... 11 …… 12
v_2 = 20 …….. 2.348 ……. 2.310 ……. 2.278
v_2 = 25 …….. 2.236 ……. 2.198 ……. 2.165
v_2 = 30 …….. 2.165 ……. 2.126 ……. 2.092
v_2 = 40 …….. 2.077 ……. 2.038 ……. 2.003
v_2 = 50 …….. 2.026 ……. 1.986 ……. 1.952
v_2 = 100 …… 1.927 ……. 1.886 ……. 1.850
v_2 = ∞ ..…… 1.831 ……. 1.789 ……. 1.752

v_1 = 15 – 25 on the next page

v_1 =	15	20	25
v_2 = 1	245.9	248.0	249.3
v_2 = 2	19.43	19.45	19.46
v_2 = 3	8.70	8.66	8.63
v_2 = 4	5.86	5.80	5.77
v_2 = 5	4.62	4.56	4.52
v_2 = 6	3.938	3.874	3.835
v_2 = 7	3.511	3.445	3.404
v_2 = 8	3.218	3.150	3.108
v_2 = 9	3.006	2.936	2.893
v_2 = 10	2.845	2.774	2.730
v_2 = 11	2.719	2.646	2.601
v_2 = 12	2.617	2.544	2.498
v_2 = 13	2.533	2.459	2.412
v_2 = 14	2.463	2.388	2.341
v_2 = 15	2.403	2.328	2.280

(continued on the next page)

v_1 =	15	20	25
v_2 = 20	2.203	2.124	2.074
v_2 = 25	2.089	2.007	1.955
v_2 = 30	2.015	1.932	1.878
v_2 = 40	1.924	1.839	1.783
v_2 = 50	1.871	1.784	1.727
v_2 = 100	1.768	1.676	1.616
v_2 = ∞	1.666	1.571	1.506

v_1 = 30 – 50 on the next page

v_1 =	30	40	50
v_2 = 1	250.1	251.1	251.8
v_2 = 2	19.46	19.47	19.48
v_2 = 3	8.62	8.59	8.58
v_2 = 4	5.75	5.72	5.70
v_2 = 5	4.50	4.46	4.44
v_2 = 6	3.808	3.774	3.754
v_2 = 7	3.376	3.340	3.319
v_2 = 8	3.079	3.043	3.020
v_2 = 9	2.864	2.826	2.803
v_2 = 10	2.700	2.661	2.637
v_2 = 11	2.570	2.531	2.507
v_2 = 12	2.466	2.426	2.401
v_2 = 13	2.380	2.339	2.314
v_2 = 14	2.308	2.266	2.241
v_2 = 15	2.247	2.204	2.178

(continued on the next page)

v_1 =	30	40	50
v_2 = 20	2.039	1.994	1.966
v_2 = 25	1.919	1.872	1.842
v_2 = 30	1.841	1.792	1.761
v_2 = 40	1.744	1.693	1.660
v_2 = 50	1.687	1.634	1.599
v_2 = 100	1.573	1.515	1.477
v_2 = ∞	1.459	1.394	1.350

v_1 = 100 – ∞ on the next page

v_1 = ……. 100 …… ∞

---

v_2 = 1 …… 253.0 …... 254.3

v_2 = 2 …….. 19.49 …... 19.50

v_2 = 3 ……. 8.55 …….. 8.53

v_2 = 4 ……. 5.66 …….. 5.63

v_2 = 5 ..... 4.41 …….. 4.36

v_2 = 6 ..... 3.712 …… 3.669

v_2 = 7 ..... 3.275 …… 3.230

v_2 = 8 ..... 2.975 …… 2.928

v_2 = 9 ..... 2.756 …… 2.707

v_2 = 10 …….. 2.588 …… 2.538

v_2 = 11 …….. 2.457 …… 2.404

v_2 = 12 …….. 2.350 …… 2.296

v_2 = 13 …….. 2.261 …… 2.206

v_2 = 14 …….. 2.187 …… 2.131

(continued on the next page)

v_1 = ... 100 ..... ∞
v_2 = 15 ..... 2.123 ..... 2.066
v_2 = 20 ..... 1.907 ..... 1.843
v_2 = 25 ..... 1.779 ..... 1.711
v_2 = 30 ..... 1.695 ..... 1.622
v_2 = 40 ..... 1.589 ..... 1.509
v_2 = 50 ..... 1.525 ..... 1.438
v_2 = 100 ..... 1.392 ..... 1.283
v_2 = ∞ ..... 1.243 ..... 1.000

END OF TABLE 7

4. STATISTICAL TABLES

TABLE 8: CRITICAL VALUES OF THE PRODUCT MOMENT CORRELATION COEFFICIENT

The table gives the critical values, for different significance levels, of the product moment correlation coefficient, r, for varying sample sizes, n.

One tail = …	10% ……..	5% …….	2.5%
Two tail = …	20% ……..	10% ……..	5%

n = 4 ……..	0.8000 …..	0.9000 …..	0.9500
n = 5 ……..	0.6870 …..	0.8054 …..	0.8783
n = 6 ……..	0.6084 …..	0.7293 …..	0.8114
n = 7 ……..	0.5509 …..	0.6694 …..	0.7545
n = 8 ……..	0.5067 …..	0.6215 …..	0.7067
n = 9 ……..	0.4716 …..	0.5822 …..	0.6664
n = 10 ……	0.4428 …..	0.5494 …..	0.6319
n = 11 ……	0.4187 …..	0.5214 …..	0.6021
n = 12 ……	0.3981 …..	0.4973 …..	0.5760
n = 13 ……	0.3802 …..	0.4762 …..	0.5529
n = 14 ……	0.3646 …..	0.4575 …..	0.5324
n = 15 ……	0.3507 …..	0.4409 …..	0.5140
n = 16 ……	0.3383 …..	0.4259 …..	0.4973
n = 17 ……	0.3271 …..	0.4124 …..	0.4821
n = 18 ……	0.3170 …..	0.4000 …..	0.4683

(continued on the next page)

(Turn over)

One tail = …	10% ……..	5% …….	2.5%
Two tail = …	20% ……..	10% ……..	5%

n = 19 ……	0.3077 …..	0.3887 …..	0.4555
n = 20 ……	0.2992 …..	0.3783 …..	0.4438
n = 21 ……	0.2914 …..	0.3687 …..	0.4329
n = 22 ……	0.2841 …..	0.3598 …..	0.4227
n = 23 ……	0.2774 …..	0.3515 …..	0.4132
n = 24 ……	0.2711 …..	0.3438 …..	0.4044
n = 25 ……	0.2653 …..	0.3365 …..	0.3961
n = 26 ……	0.2598 …..	0.3297 …..	0.3882
n = 27 ……	0.2546 …..	0.3233 …..	0.3809
n = 28 ……	0.2497 …..	0.3172 …..	0.3739
n = 29 ……	0.2451 …..	0.3115 …..	0.3673
n = 30 ……	0.2407 …..	0.3061 …..	0.3610
n = 31 ……	0.2366 …..	0.3009 …..	0.3550
n = 32 ……	0.2327 …..	0.2960 …..	0.3494
n = 33 ……	0.2289 …..	0.2913 …..	0.3440

(continued on the next page)

One tail = …	10% ……..	5% …….	2.5%
Two tail = …	20% ……..	10% ……..	5%

n = 34 ……	0.2254 …..	0.2869 …..	0.3388
n = 35 ……	0.2220 …..	0.2826 …..	0.3338
n = 36 ……	0.2187 …..	0.2785 …..	0.3291
n = 37 ……	0.2156 …..	0.2746 …..	0.3246
n = 38 ……	0.2126 …..	0.2709 …..	0.3202
n = 39 ……	0.2097 …..	0.2673 …..	0.3160
n = 40 ……	0.2070 …..	0.2638 …..	0.3120
n = 41 ……	0.2043 …..	0.2605 …..	0.3081
n = 42 ……	0.2018 …..	0.2573 …..	0.3044
n = 43 ……	0.1993 …..	0.2542 …..	0.3008
n = 44 ……	0.1970 …..	0.2512 …..	0.2973
n = 45 ……	0.1947 …..	0.2483 …..	0.2940
n = 46 ……	0.1925 …..	0.2455 …..	0.2907
n = 47 ……	0.1903 …..	0.2429 …..	0.2876
n = 48 ……	0.1883 …..	0.2403 …..	0.2845

(continued on the next page)

One tail = …	10% ……..	5% …….	2.5%
Two tail = …	20% ……..	10% ……..	5%

n = 49 ……	0.1863 …..	0.2377 …..	0.2816
n = 50 ……	0.1843 …..	0.2353 …..	0.2787
n = 60 ……	0.1678 …..	0.2144 …..	0.2542
n = 70 ……	0.1550 …..	0.1982 …..	0.2352
n = 80 ……	0.1448 …..	0.1852 …..	0.2199
n = 90 ……	0.1364 …..	0.1745 …..	0.2072
n = 100 ….	0.1292 …..	0.1654 …...	0.1966

One tail 1% and 0.5% and Two tail 2% and 1% on the next page

(Turn over)

One tail = … 1% …… 0.5%

Two tail = … 2% …… 1%

---

n = 4 …….. 0.9800 ….. 0.9900

n = 5 …….. 0.9343 ….. 0.9587

n = 6 …….. 0.8822 ….. 0.9172

n = 7 …….. 0.8329 ….. 0.8745

n = 8 …….. 0.7887 ….. 0.8343

n = 9 …….. 0.7498 ….. 0.7977

n = 10 …… 0.7155 ….. 0.7646

n = 11 …… 0.6851 ….. 0.7348

n = 12 …… 0.6581 ….. 0.7079

n = 13 …… 0.6339 ….. 0.6835

n = 14 …… 0.6120 ….. 0.6614

n = 15 …… 0.5923 ….. 0.6411

n = 16 …… 0.5742 ….. 0.6226

n = 17 …… 0.5577 ….. 0.6055

n = 18 …… 0.5425 ….. 0.5897

(continued on the next page)

One tail = … 1% …… 0.5%

Two tail = … 2% …… 1%

---

n = 19 …… 0.5285 ….. 0.5751

n = 20 …… 0.5155 ….. 0.5614

n = 21 …… 0.5034 ….. 0.5487

n = 22 …… 0.4921 ….. 0.5368

n = 23 …… 0.4815 ….. 0.5256

n = 24 …… 0.4716 ….. 0.5151

n = 25 …… 0.4622 ….. 0.5052

n = 26 …… 0.4534 ….. 0.4958

n = 27 …… 0.4451 ….. 0.4869

n = 28 …… 0.4372 ….. 0.4785

n = 29 …… 0.4297 ….. 0.4705

n = 30 …… 0.4226 ….. 0.4629

n = 31 …… 0.4158 ….. 0.4556

n = 32 …… 0.4093 ….. 0.4487

n = 33 …… 0.4032 ….. 0.4421

(continued on the next page)

One tail = … 1% …… 0.5%

Two tail = … 2% …… 1%

---

n = 34 …… 0.3972 ….. 0.4357

n = 35 …… 0.3916 ….. 0.4296

n = 36 …… 0.3862 ….. 0.4238

n = 37 …… 0.3810 ….. 0.4182

n = 38 …… 0.3760 ….. 0.4128

n = 39 …… 0.3712 ….. 0.4076

n = 40 …… 0.3665 ….. 0.4026

n = 41 …… 0.3621 ….. 0.3978

n = 42 …… 0.3578 ….. 0.3932

n = 43 …… 0.3536 ….. 0.3887

n = 44 …… 0.3496 ….. 0.3843

n = 45 …… 0.3457 ….. 0.3801

n = 46 …… 0.3420 ….. 0.3761

n = 47 …… 0.3384 ….. 0.3721

n = 48 …… 0.3348 ….. 0.3683

(continued on the next page)

One tail = … 1% …… 0.5%
Two tail = … 2% …… 1%
n = 49 …… 0.3314 ….. 0.3646
n = 50 …… 0.3281 ….. 0.3610
n = 60 …… 0.2997 ….. 0.3301
n = 70 …… 0.2776 ….. 0.3060
n = 80 …… 0.2597 ….. 0.2864
n = 90 …… 0.2449 ….. 0.2702
n = 100 …. 0.2324 ….. 0.2565

END OF TABLE 8

4. STATISTICAL TABLES

TABLE 9: CRITICAL VALUES OF SPEARMAN'S RANK CORRELATION COEFFICIENT

The table gives the critical values, for different significance levels, of Spearman's rank correlation coefficient, r_s, for varying sample sizes, n. Since r_s is discrete, exact significance levels cannot be obtained in most cases. The critical values given are those with significance levels closest to the stated value.

(Turn over)

One tail = …	10% ……..	5% ……	2.5%
Two tail = …	20% ……..	10% ……..	5%
n = 4 ……..	1.0000 …..	1.0000 …..	1.0000
n = 5 ……..	0.7000 …..	0.9000 …..	0.9000
n = 6 ……..	0.6571 …..	0.7714 …..	0.8286
n = 7 ……..	0.5714 …..	0.6786 …..	0.7857
n = 8 ……..	0.5476 …..	0.6429 …..	0.7381
n = 9 ……..	0.4833 …..	0.6000 …..	0.6833
n = 10 ……	0.4424 …..	0.5636 …..	0.6485
n = 11 ……	0.4182 …..	0.5273 …..	0.6091
n = 12 ……	0.3986 …..	0.5035 …..	0.5874
n = 13 ……	0.3791 …..	0.4780 …..	0.5604
n = 14 ……	0.3670 …..	0.4593 …..	0.5385
n = 15 ……	0.3500 …..	0.4429 …..	0.5179
n = 16 ……	0.3382 …..	0.4265 …..	0.5029
n = 17 ……	0.3271 …..	0.4124 …..	0.4821
n = 18 ……	0.3170 …..	0.4000 …..	0.4683

(continued on the next page)

(Turn over)

One tail = …	10% ……..	5% ……	2.5%
Two tail = …	20% ……..	10% ……..	5%

n = 19 ……	0.3077 …..	0.3887 …..	0.4555
n = 20 ……	0.2992 …..	0.3783 …..	0.4438
n = 21 ……	0.2914 …..	0.3687 …..	0.4329
n = 22 ……	0.2841 …..	0.3598 …..	0.4227
n = 23 ……	0.2774 …..	0.3515 …..	0.4132
n = 24 ……	0.2711 …..	0.3438 …..	0.4044
n = 25 ……	0.2653 …..	0.3365 …..	0.3961
n = 26 ……	0.2598 …..	0.3297 …..	0.3882
n = 27 ……	0.2546 …..	0.3233 …..	0.3809
n = 28 ……	0.2497 …..	0.3172 …..	0.3739
n = 29 ……	0.2451 …..	0.3115 …..	0.3673
n = 30 ……	0.2407 …..	0.3061 …..	0.3610
n = 31 ……	0.2366 …..	0.3009 …..	0.3550
n = 32 ……	0.2327 …..	0.2960 …..	0.3494
n = 33 ……	0.2289 …..	0.2913 …..	0.3440

(continued on the next page)

One tail = …	10% ……..	5% …….	2.5%
Two tail = …	20% ……..	10% ……..	5%

n = 34 ……	0.2254 …..	0.2869 …..	0.3388
n = 35 ……	0.2220 …..	0.2826 …..	0.3338
n = 36 ……	0.2187 …..	0.2785 …..	0.3291
n = 37 ……	0.2156 …..	0.2746 …..	0.3246
n = 38 ……	0.2126 …..	0.2709 …..	0.3202
n = 39 ……	0.2097 …..	0.2673 …..	0.3160
n = 40 ……	0.2070 …..	0.2638 …..	0.3120
n = 41 ……	0.2043 …..	0.2605 …..	0.3081
n = 42 ……	0.2018 …..	0.2573 …..	0.3044
n = 43 ……	0.1993 …..	0.2542 …..	0.3008
n = 44 ……	0.1970 …..	0.2512 …..	0.2973
n = 45 ……	0.1947 …..	0.2483 …..	0.2940
n = 46 ……	0.1925 …..	0.2455 …..	0.2907
n = 47 ……	0.1903 …..	0.2429 …..	0.2876
n = 48 ……	0.1883 …..	0.2403 …..	0.2845

(continued on the next page)

One tail = …	10% ……..	5% ……..	2.5%
Two tail = …	20% ……..	10% ……	5%

n = 49 ……	0.1863 …..	0.2377 …..	0.2816
n = 50 ……	0.1843 …..	0.2353 …..	0.2787
n = 60 ……	0.1678 …..	0.2144 …..	0.2542
n = 70 ……	0.1550 …..	0.1982 …..	0.2352
n = 80 ……	0.1448 …..	0.1852 …..	0.2199
n = 90 ……	0.1364 …..	0.1745 …..	0.2072
n = 100 …..	0.1292 …..	0.1654 …..	0.1966

One tail 1% and 0.5% and Two tail 2% and 1% on the next page

	One tail =	Two tail =
n = 4	1.0000	1.0000
n = 5	1.0000	1.0000
n = 6	0.9429	0.9429
n = 7	0.8571	0.8929
n = 8	0.8095	0.8571
n = 9	0.7667	0.8167
n = 10	0.7333	0.7818
n = 11	0.7000	0.7545
n = 12	0.6713	0.7273
n = 13	0.6484	0.6978
n = 14	0.6220	0.6747
n = 15	0.6000	0.6536
n = 16	0.5824	0.6324
n = 17	0.5577	0.6055
n = 18	0.5425	0.5897

(continued on the next page)

(Turn over)

One tail = … 1% …… 0.5%

Two tail = … 2% …… 1%

---

n = 19 …… 0.5285 ….. 0.5751

n = 20 …… 0.5155 ….. 0.5614

n = 21 …… 0.5034 ….. 0.5487

n = 22 …… 0.4921 ….. 0.5368

n = 23 …… 0.4815 ….. 0.5256

n = 24 …… 0.4716 ….. 0.5151

n = 25 …… 0.4622 ….. 0.5052

n = 26 …… 0.4534 ….. 0.4958

n = 27 …… 0.4451 ….. 0.4869

n = 28 …… 0.4372 ….. 0.4785

n = 29 …… 0.4297 ….. 0.4705

n = 30 …… 0.4226 ….. 0.4629

n = 31 …… 0.4158 ….. 0.4556

n = 32 …… 0.4093 ….. 0.4487

n = 33 …… 0.4032 ….. 0.4421

(continued on the next page)

One tail = … 1% …… 0.5%

Two tail = … 2% …… 1%

---

n = 34 …… 0.3972 ….. 0.4357

n = 35 …… 0.3916 ….. 0.4296

n = 36 …… 0.3862 ….. 0.4238

n = 37 …… 0.3810 ….. 0.4182

n = 38 …… 0.3760 ….. 0.4128

n = 39 …… 0.3712 ….. 0.4076

n = 40 …… 0.3665 ….. 0.4026

n = 41 …… 0.3621 ….. 0.3978

n = 42 …… 0.3578 ….. 0.3932

n = 43 …… 0.3536 ….. 0.3887

n = 44 …… 0.3496 ….. 0.3843

n = 45 …… 0.3457 ….. 0.3801

n = 46 …… 0.3420 ….. 0.3761

n = 47 …… 0.3384 ….. 0.3721

n = 48 …… 0.3348 ….. 0.3683

(continued on the next page)

One tail = … 1% …… 0.5%
Two tail = … 2% …… 1%

n = 49	0.3314	0.3646
n = 50	0.3281	0.3610
n = 60	0.2997	0.3301
n = 70	0.2776	0.3060
n = 80	0.2597	0.2864
n = 90	0.2449	0.2702
n = 100	0.2324	0.2565

END OF TABLE 9

4. STATISTICAL TABLES

TABLE 10: CRITICAL VALUES OF THE WILCOXON SIGNED-RANK STATISTIC

The table gives the lower tail critical values of the statistic T.

The upper tail critical values are given by

$$\frac{1}{2}n(n+1) - T.$$

T is the sum of the ranks of observations with the same sign.

Since T is discrete, exact significance levels cannot usually be obtained.

The critical values tabulated are those with significance levels closest to the stated value.

The critical region includes the tabulated value.

One tail =	… 10%	… 5%	…. 2.5%	… 1%	… 0.5%
Two tail =	… 20%	… 10%	.. 5%	…... 2%	… 1%
n = 3	…….. 0				
n = 4	…….. 1	……. 0			
n = 5	…….. 2	……. 1	……. 0		
n = 6	…….. 4	……. 2	……. 1	…… 0	
n = 7	…….. 6	……. 4	……. 2	…… 0	…… 0
n = 8	…….. 8	……. 6	……. 4	…… 2	…… 0
n = 9	…….. 11	…... 8	……. 6	…… 3	…… 2
n = 10	…… 14	….. 11	…… 8	…… 5	…… 3
n = 11	…… 18	….. 14	…… 11	…….. 7	…… 5
n = 12	…… 22	….. 17	…... 14	…….. 10	….. 7
n = 13	…… 26	….. 21	…… 17	…….. 13	…. 10
n = 14	……. 31	…. 26	…… 21	…….. 16	…. 13
n = 15	…… 37	….. 30	…… 25	…….. 20	…. 16
n = 16	…… 42	….. 36	…… 30	…….. 24	…. 19
n = 20	…… 70	….. 60	…… 52	…….. 43	…. 37

END OF TABLE 10

4. STATISTICAL TABLES

TABLE 11: CRITICAL VALUES OF THE WILCOXON RANK-SUM

The table gives the lower tail critical values of the statistic U.

The upper tail critical values are given by $mn - U$.

$U = T - \frac{n(n+1)}{2}$ where T is the sum of the ranks of the sample of size n.

Since U is discrete, exact significance levels cannot be obtained.

The critical values tabulated are those with significance levels closest to the stated value.
The critical region includes the tabulated value.

One tail 5% Two tail 10%

m =	2	3	4	5	6	7
n = 2	0	0	0	0	1	
n = 3	0	0	1	1	2	3
n = 4	0	1	2	3	4	5
n = 5	0	1	3	4	5	7
n = 6	0	2	4	5	7	9
n = 7	1	3	5	7	9	11
n = 8	1	3	6	8	11	13
n = 9	1	4	7	10	12	15
n = 10	2	5	8	11	14	18
n = 11	2	5	9	12	16	20
n = 12	2	6	10	14	18	22

m = 8 – 12 on the next page

(Turn over)

m =	8	9	10	11	12
n = 2	1	1	2	2	2
n = 3	3	4	5	5	6
n = 4	6	7	8	9	10
n = 5	8	10	11	12	14
n = 6	11	12	14	16	18
n = 7	13	15	18	20	22
n = 8	16	18	21	24	26
n = 9	18	21	24	27	30
n = 10	21	24	28	31	34
n = 11	24	27	31	35	39
n = 12	26	30	34	39	43

One tail 2.5% and Two tail 5% on the next page

(Turn over)

One tail 2.5% Two tail 5%

m =	2	3	4	5	6	7
n = 2			0	0	0	
n = 3			0	0	1	2
n = 4		0	1	2	2	3
n = 5	0	0	2	3	4	5
n = 6	0	1	2	4	5	7
n = 7	0	2	3	5	7	9
n = 8	0	2	4	6	8	11
n = 9	0	3	5	7	10	13
n = 10	1	3	6	9	12	15
n = 11	1	4	7	10	13	17
n = 12	1	4	8	11	15	18

m = 8 – 12 on the next page

(Turn over)

m = ... 8 ..... 9 ..... 10 ..... 11 12
n = 2 ..... 0 ..... 0 ..... 1 ..... 1 1
n = 3 ..... 2 ..... 3 ..... 3 ..... 4 4
n = 4 ..... 4 ..... 5 ..... 6 ..... 7 8
n = 5 ..... 6 ..... 7 ..... 9 ..... 10 11
n = 6 ..... 8 ..... 10 ... 12 ..... 13 15
n = 7 ..... 11 ... 13 ... 15 ..... 17 18
n = 8 ..... 13 ... 15 ... 18 ..... 20 22
n = 9 ..... 15 ... 18 ... 21 ..... 23 26
n = 10 ..... 18 ... 21 ... 24 ..... 27 30
n = 11 ..... 20 ... 23 ... 27 ..... 30 34
n = 12 ..... 22 ... 26 ... 30 ..... 34 38

END OF TABLE 11