

Final Formula Sheet

Chapter 1 - 3:

Probability Rule:

Probability of Union (Two): $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

Probability of Union (Three): $P(A \cup B \cup C) = P(A) + P(B) + P(C) - P(A \cap B) - P(B \cap C) - P(A \cap C) + P(A \cap B \cap C)$

Conditional Probability: $P(A|B) = \frac{P(A \cap B)}{P(B)}$

Independence: $P(A \cap B) = P(A) \times P(B)$ or $P(B|A) = P(B)$

Total Probability Rule: Suppose E_1, E_2, \dots, E_k are k exhaustive and mutually exclusive events, then $P(B) = P(B \cap E_1) + P(B \cap E_2) + \dots + P(B \cap E_k) = P(B|E_1)P(E_1) + \dots + P(B|E_k)P(E_k)$

Discrete R.V.:

Mean (Expected Value): $\mathbb{E}(X) = \mu = \sum_x x f(x)$

Variance: $\mathbb{V}(X) = \sigma^2 = \sum_x (x - \mu)^2 f(x) = \mathbb{E}(X^2) - (\mathbb{E}(X))^2$

C.D.F: $F(x) = P(X \leq x) = \sum_{y: y \leq x} f(y)$

Continuous R.V.:

Mean (Expected Value): $\mathbb{E}(X) = \mu = \int_{-\infty}^{\infty} x f(x) dx$

Variance: $\mathbb{V}(X) = \sigma^2 = \int_{-\infty}^{\infty} (x - \mu)^2 f(x) dx = \mathbb{E}(X^2) - (\mathbb{E}(X))^2$

C.D.F: $F(x) = P(X \leq x) = \int_{-\infty}^x f(t) dt$

Common Distributions:

Binomial Distribution (n,p):

$$f(x) = \binom{n}{x} p^x (1-p)^{n-x}, \quad x = 0, 1, 2, \dots, n$$

$$\mathbb{E}(X) = np, \quad \mathbb{V}(X) = np(1-p)$$

Hypergeometric Distribution (n,K,N):

$$f(x) = \frac{\binom{K}{x} \binom{N-K}{n-x}}{\binom{N}{n}}, \quad x = \max\{0, n+K-N\} \text{ to } \min\{K, n\}$$

$$\mathbb{E}(X) = np, \quad \mathbb{V}(X) = np(1-p) \frac{N-n}{N-1}, \quad \text{where } p = \frac{K}{N}$$

Geometric Distribution (p):

$$f(x) = p(1-p)^{x-1}, \quad x = 0, 1, 2, \dots$$

$$\mathbb{E}(X) = \frac{1}{p}, \quad \mathbb{V}(X) = \frac{1-p}{p^2}$$

Negative Binomial Distribution (r,p):

$$f(x) = \binom{x-1}{r-1} p^r (1-p)^{x-r}, \quad x = 0, 1, 2, \dots$$

$$\mathbb{E}(X) = \frac{r}{p}, \quad \mathbb{V}(X) = \frac{r(1-p)}{p^2}$$

Poisson Distribution (λ):

$$f(x) = \frac{\lambda^x e^{-\lambda}}{x!}, \quad x = 0, 1, 2, \dots$$

$$\mathbb{E}(X) = \lambda, \quad \mathbb{V}(X) = \lambda$$

Normal Distribution (μ, σ^2):

$$f(x) = \frac{1}{\sqrt{2\pi}\sigma} e^{-(x-\mu)^2/2\sigma^2}, \quad -\infty < x < \infty$$

$$\mathbb{E}(X) = \mu, \quad \mathbb{V}(X) = \sigma^2$$

Exponential Distribution (λ):

$$f(x) = \lambda e^{-\lambda x}, \quad x \geq 0$$

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

$$\mathbb{E}(X) = \frac{1}{\lambda}, \mathbb{V}(X) = \frac{1}{\lambda^2}$$

Normal Approximation to Binomial Distribution:

$$P(X \leq x) = P(X \leq x + 0.5) \approx P(Z \leq \frac{x + 0.5 - np}{\sqrt{np(1-p)}})$$

$$P(X \geq x) = P(X \geq x - 0.5) \approx P(Z \geq \frac{x - 0.5 - np}{\sqrt{np(1-p)}})$$

Chapter 4 - 8:

Marginal Distributions: $f_X(x) = \int f_{XY}(x, y)dy$, $f_Y(y) = \int f_{XY}(x, y)dx$

Covariance: $Cov(X, Y) = \mathbb{E}(XY) - \mathbb{E}(X)\mathbb{E}(Y)$

$$\text{Correlation: } \rho_{XY} = \frac{Cov(X, Y)}{\sqrt{\mathbb{V}(X)\mathbb{V}(Y)}} = \frac{\sigma_{XY}}{\sigma_X \sigma_Y}$$

Standardizing: $Z = \frac{X - \mu}{\sigma}$

$$\text{Sample Mean: } \bar{X} = \frac{\sum_{i=1}^n x_i}{n}$$

$$\text{Sample Variance: } s^2 = \frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1} = \frac{\sum_{i=1}^n x_i^2 - n\bar{x}^2}{n-1}$$

Q_1 : The $(n+1)/4$ th number in the data set.

Q_3 : The $3(n+1)/4$ th number in the data set.

Outliers: $Q_1 - 1.5IQR, Q_3 + 1.5IQR$

Normal Probability Plot: $\Phi^{-1}(z_j) = \frac{j-0.5}{n}$, $j = 1, 2, \dots, n$

Central Limit Theorem Formula: $z = \frac{\bar{x} - \mu}{\sigma/\sqrt{n}}$

z-Confidence Interval for the Mean: $\bar{x} \pm z_{\alpha/2} \frac{\sigma}{\sqrt{n}}$

t-Confidence Interval for the Mean: $\bar{x} \pm t_{\alpha/2, n-1} \frac{s}{\sqrt{n}}$

Confidence Interval for a Proportion: $\hat{p} \pm z_{\alpha/2} \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$

Sample Size (Mean): $n = (\frac{z_{\alpha/2}\sigma}{E})^2$

Sample Size (Proportion): $n = (\frac{z_{\alpha/2}}{E})^2 p(1-p)$

Sample Size (Proportion, not specified): $n = (\frac{z_{\alpha/2}}{E})^2 0.5^2$

Chapter 9:

Z Test for Mean: $Z = \frac{\bar{x} - \mu_0}{\sigma/\sqrt{n}}$

T Test for Mean: $T = \frac{\bar{x} - \mu_0}{s/\sqrt{n}}$

Z Test for Proportions: $Z = \frac{\hat{p} - p_0}{\sqrt{p_0(1-p_0)/n}}$

Confidence Interval for Difference in Means:

Variances Equal: $\bar{x}_1 - \bar{x}_2 \pm t_{\alpha/2, n_1+n_2-2} s_p \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}$ where $s_p^2 = \frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2}$

Variances Unequal: $\bar{x}_1 - \bar{x}_2 \pm t_{\alpha/2, v} \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$ where $v = \frac{(s_1^2/n_1 + s_2^2/n_2)^2}{(s_1^2/n_1)^2/(n_1-1) + (s_2^2/n_2)^2/(n_2-1)}$

Chapter 11:

Simple Regression Model: $b_0 = \bar{y} - b_1\bar{x}$, $b_1 = \frac{S_{xy}}{S_{xx}}$ where $S_{xy} = \sum x_i y_i - n\bar{x}\bar{y}$ and $S_{xx} = \sum x_i^2 - n(\bar{x})^2$

T Test for β_1 : $t_{n-2} = \frac{b_1}{\sqrt{\hat{\sigma}^2/S_{xx}}}$ where $\hat{\sigma}^2 = \frac{SSE}{n-2}$

Residual Sum of Squares: $SSE = \sum_{i=1}^n (y_i - \hat{y}_i)^2$

Regression Sum of Squares: $SSR = \sum_{i=1}^n (\hat{y}_i - \bar{y})^2 = b_1 S_{xy}$

Total Sum of Squares: $SST = \sum_{i=1}^n (y_i - \bar{y})^2 = \sum_i y_i^2 - n\bar{y}^2$

Confidence Interval for b_1 : $b_1 \pm t_{n-2, \alpha/2} \frac{\hat{\sigma}}{\sqrt{S_{xx}}}$

Prediction Interval for Mean: $\hat{y} \pm t_{n-2, \alpha/2} \hat{\sigma} \sqrt{\frac{1}{n} + \frac{(x_0 - \bar{x})^2}{S_{xx}}}$

Prediction Interval for Individual: $\hat{y} \pm t_{n-2, \alpha/2} \hat{\sigma} \sqrt{1 + \frac{1}{n} + \frac{(x_0 - \bar{x})^2}{S_{xx}}}$

Sample Correlation Coefficient: $r = \frac{S_{xy}}{\sqrt{S_{xx}S_{yy}}}$, Coefficient of Determination: $R^2 = \frac{SSR}{SST}$

Chapter 13:

Total Sum of Squares: $SST = \sum_{i=1}^a \sum_{j=1}^{n_i} (y_{ij} - \bar{y}_{..})^2 = \sum_{i=1}^a \sum_{j=1}^{n_i} y_{ij}^2 - \frac{y_{..}^2}{N}$, $df = N - 1$

Error Sum of Squares: $SSE = \sum_{i=1}^a \sum_{j=1}^{n_i} (y_{ij} - \bar{y}_{i.})^2 = \sum_{i=1}^a (n_i - 1) s_i^2$, $df = N - a$

Treatment Sum of Squares: $SSTr = \sum_{i=1}^a n_i (\bar{y}_{i.} - \bar{y}_{..})^2 = \sum_{i=1}^a \frac{y_{i.}^2}{n_i} - \frac{y_{..}^2}{N}$, $df = a - 1$

Fisher's LSD Test: $LSD = t_{\alpha/2, N-a} \sqrt{MSE(\frac{1}{n_i} + \frac{1}{n_j})}$

CI for LSD: $\bar{y}_{i.} - \bar{y}_{j.} \pm LSD$

Standard Normal Probabilities

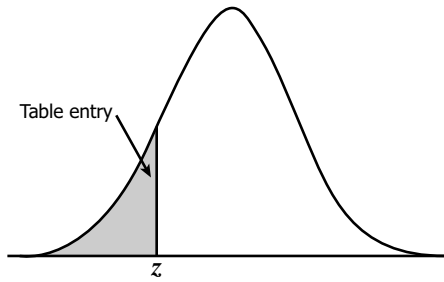


Table entry for z is the area under the standard normal curve to the left of z .

| z | .00 | .01 | .02 | .03 | .04 | .05 | .06 | .07 | .08 | .09 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| -3.4 | .0003 | .0003 | .0003 | .0003 | .0003 | .0003 | .0003 | .0003 | .0003 | .0002 |
| -3.3 | .0005 | .0005 | .0005 | .0004 | .0004 | .0004 | .0004 | .0004 | .0004 | .0003 |
| -3.2 | .0007 | .0007 | .0006 | .0006 | .0006 | .0006 | .0006 | .0005 | .0005 | .0005 |
| -3.1 | .0010 | .0009 | .0009 | .0009 | .0008 | .0008 | .0008 | .0008 | .0007 | .0007 |
| -3.0 | .0013 | .0013 | .0013 | .0012 | .0012 | .0011 | .0011 | .0011 | .0010 | .0010 |
| -2.9 | .0019 | .0018 | .0018 | .0017 | .0016 | .0016 | .0015 | .0015 | .0014 | .0014 |
| -2.8 | .0026 | .0025 | .0024 | .0023 | .0023 | .0022 | .0021 | .0021 | .0020 | .0019 |
| -2.7 | .0035 | .0034 | .0033 | .0032 | .0031 | .0030 | .0029 | .0028 | .0027 | .0026 |
| -2.6 | .0047 | .0045 | .0044 | .0043 | .0041 | .0040 | .0039 | .0038 | .0037 | .0036 |
| -2.5 | .0062 | .0060 | .0059 | .0057 | .0055 | .0054 | .0052 | .0051 | .0049 | .0048 |
| -2.4 | .0082 | .0080 | .0078 | .0075 | .0073 | .0071 | .0069 | .0068 | .0066 | .0064 |
| -2.3 | .0107 | .0104 | .0102 | .0099 | .0096 | .0094 | .0091 | .0089 | .0087 | .0084 |
| -2.2 | .0139 | .0136 | .0132 | .0129 | .0125 | .0122 | .0119 | .0116 | .0113 | .0110 |
| -2.1 | .0179 | .0174 | .0170 | .0166 | .0162 | .0158 | .0154 | .0150 | .0146 | .0143 |
| -2.0 | .0228 | .0222 | .0217 | .0212 | .0207 | .0202 | .0197 | .0192 | .0188 | .0183 |
| -1.9 | .0287 | .0281 | .0274 | .0268 | .0262 | .0256 | .0250 | .0244 | .0239 | .0233 |
| -1.8 | .0359 | .0351 | .0344 | .0336 | .0329 | .0322 | .0314 | .0307 | .0301 | .0294 |
| -1.7 | .0446 | .0436 | .0427 | .0418 | .0409 | .0401 | .0392 | .0384 | .0375 | .0367 |
| -1.6 | .0548 | .0537 | .0526 | .0516 | .0505 | .0495 | .0485 | .0475 | .0465 | .0455 |
| -1.5 | .0668 | .0655 | .0643 | .0630 | .0618 | .0606 | .0594 | .0582 | .0571 | .0559 |
| -1.4 | .0808 | .0793 | .0778 | .0764 | .0749 | .0735 | .0721 | .0708 | .0694 | .0681 |
| -1.3 | .0968 | .0951 | .0934 | .0918 | .0901 | .0885 | .0869 | .0853 | .0838 | .0823 |
| -1.2 | .1151 | .1131 | .1112 | .1093 | .1075 | .1056 | .1038 | .1020 | .1003 | .0985 |
| -1.1 | .1357 | .1335 | .1314 | .1292 | .1271 | .1251 | .1230 | .1210 | .1190 | .1170 |
| -1.0 | .1587 | .1562 | .1539 | .1515 | .1492 | .1469 | .1446 | .1423 | .1401 | .1379 |
| -0.9 | .1841 | .1814 | .1788 | .1762 | .1736 | .1711 | .1685 | .1660 | .1635 | .1611 |
| -0.8 | .2119 | .2090 | .2061 | .2033 | .2005 | .1977 | .1949 | .1922 | .1894 | .1867 |
| -0.7 | .2420 | .2389 | .2358 | .2327 | .2296 | .2266 | .2236 | .2206 | .2177 | .2148 |
| -0.6 | .2743 | .2709 | .2676 | .2643 | .2611 | .2578 | .2546 | .2514 | .2483 | .2451 |
| -0.5 | .3085 | .3050 | .3015 | .2981 | .2946 | .2912 | .2877 | .2843 | .2810 | .2776 |
| -0.4 | .3446 | .3409 | .3372 | .3336 | .3300 | .3264 | .3228 | .3192 | .3156 | .3121 |
| -0.3 | .3821 | .3783 | .3745 | .3707 | .3669 | .3632 | .3594 | .3557 | .3520 | .3483 |
| -0.2 | .4207 | .4168 | .4129 | .4090 | .4052 | .4013 | .3974 | .3936 | .3897 | .3859 |
| -0.1 | .4602 | .4562 | .4522 | .4483 | .4443 | .4404 | .4364 | .4325 | .4286 | .4247 |
| -0.0 | .5000 | .4960 | .4920 | .4880 | .4840 | .4801 | .4761 | .4721 | .4681 | .4641 |

Standard Normal Probabilities

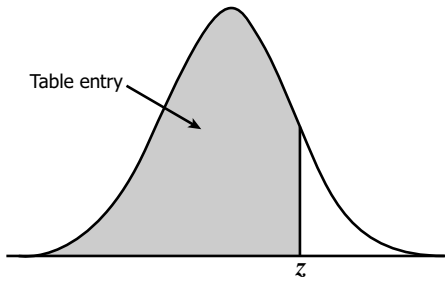


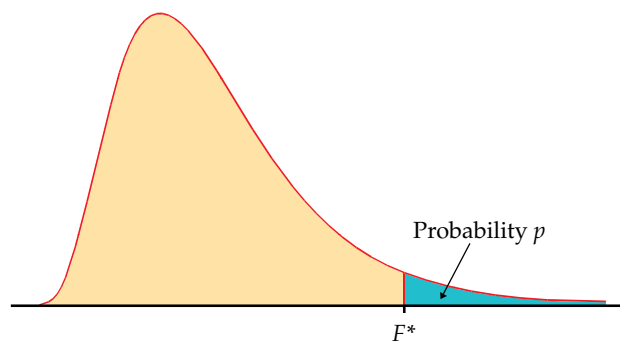
Table entry for z is the area under the standard normal curve to the left of z .

[illegible]

t Table

| cum. prob | <i>t</i> _{.50} | <i>t</i> _{.75} | <i>t</i> _{.80} | <i>t</i> _{.85} | <i>t</i> _{.90} | <i>t</i> _{.95} | <i>t</i> _{.975} | <i>t</i> _{.99} | <i>t</i> _{.995} | <i>t</i> _{.999} | <i>t</i> _{.9995} |
|-----------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|-------------------------|--------------------------|--------------------------|---------------------------|
| one-tail | 0.50 | 0.25 | 0.20 | 0.15 | 0.10 | 0.05 | 0.025 | 0.01 | 0.005 | 0.001 | 0.0005 |
| two-tails | 1.00 | 0.50 | 0.40 | 0.30 | 0.20 | 0.10 | 0.05 | 0.02 | 0.01 | 0.002 | 0.001 |
| df | | | | | | | | | | | |
| 1 | 0.000 | 1.000 | 1.376 | 1.963 | 3.078 | 6.314 | 12.71 | 31.82 | 63.66 | 318.31 | 636.62 |
| 2 | 0.000 | 0.816 | 1.061 | 1.386 | 1.886 | 2.920 | 4.303 | 6.965 | 9.925 | 22.327 | 31.599 |
| 3 | 0.000 | 0.765 | 0.978 | 1.250 | 1.638 | 2.353 | 3.182 | 4.541 | 5.841 | 10.215 | 12.924 |
| 4 | 0.000 | 0.741 | 0.941 | 1.190 | 1.533 | 2.132 | 2.776 | 3.747 | 4.604 | 7.173 | 8.610 |
| 5 | 0.000 | 0.727 | 0.920 | 1.156 | 1.476 | 2.015 | 2.571 | 3.365 | 4.032 | 5.893 | 6.869 |
| 6 | 0.000 | 0.718 | 0.906 | 1.134 | 1.440 | 1.943 | 2.447 | 3.143 | 3.707 | 5.208 | 5.959 |
| 7 | 0.000 | 0.711 | 0.896 | 1.119 | 1.415 | 1.895 | 2.365 | 2.998 | 3.499 | 4.785 | 5.408 |
| 8 | 0.000 | 0.706 | 0.889 | 1.108 | 1.397 | 1.860 | 2.306 | 2.896 | 3.355 | 4.501 | 5.041 |
| 9 | 0.000 | 0.703 | 0.883 | 1.100 | 1.383 | 1.833 | 2.262 | 2.821 | 3.250 | 4.297 | 4.781 |
| 10 | 0.000 | 0.700 | 0.879 | 1.093 | 1.372 | 1.812 | 2.228 | 2.764 | 3.169 | 4.144 | 4.587 |
| 11 | 0.000 | 0.697 | 0.876 | 1.088 | 1.363 | 1.796 | 2.201 | 2.718 | 3.106 | 4.025 | 4.437 |
| 12 | 0.000 | 0.695 | 0.873 | 1.083 | 1.356 | 1.782 | 2.179 | 2.681 | 3.055 | 3.930 | 4.318 |
| 13 | 0.000 | 0.694 | 0.870 | 1.079 | 1.350 | 1.771 | 2.160 | 2.650 | 3.012 | 3.852 | 4.221 |
| 14 | 0.000 | 0.692 | 0.868 | 1.076 | 1.345 | 1.761 | 2.145 | 2.624 | 2.977 | 3.787 | 4.140 |
| 15 | 0.000 | 0.691 | 0.866 | 1.074 | 1.341 | 1.753 | 2.131 | 2.602 | 2.947 | 3.733 | 4.073 |
| 16 | 0.000 | 0.690 | 0.865 | 1.071 | 1.337 | 1.746 | 2.120 | 2.583 | 2.921 | 3.686 | 4.015 |
| 17 | 0.000 | 0.689 | 0.863 | 1.069 | 1.333 | 1.740 | 2.110 | 2.567 | 2.898 | 3.646 | 3.965 |
| 18 | 0.000 | 0.688 | 0.862 | 1.067 | 1.330 | 1.734 | 2.101 | 2.552 | 2.878 | 3.610 | 3.922 |
| 19 | 0.000 | 0.688 | 0.861 | 1.066 | 1.328 | 1.729 | 2.093 | 2.539 | 2.861 | 3.579 | 3.883 |
| 20 | 0.000 | 0.687 | 0.860 | 1.064 | 1.325 | 1.725 | 2.086 | 2.528 | 2.845 | 3.552 | 3.850 |
| 21 | 0.000 | 0.686 | 0.859 | 1.063 | 1.323 | 1.721 | 2.080 | 2.518 | 2.831 | 3.527 | 3.819 |
| 22 | 0.000 | 0.686 | 0.858 | 1.061 | 1.321 | 1.717 | 2.074 | 2.508 | 2.819 | 3.505 | 3.792 |
| 23 | 0.000 | 0.685 | 0.858 | 1.060 | 1.319 | 1.714 | 2.069 | 2.500 | 2.807 | 3.485 | 3.768 |
| 24 | 0.000 | 0.685 | 0.857 | 1.059 | 1.318 | 1.711 | 2.064 | 2.492 | 2.797 | 3.467 | 3.745 |
| 25 | 0.000 | 0.684 | 0.856 | 1.058 | 1.316 | 1.708 | 2.060 | 2.485 | 2.787 | 3.450 | 3.725 |
| 26 | 0.000 | 0.684 | 0.856 | 1.058 | 1.315 | 1.706 | 2.056 | 2.479 | 2.779 | 3.435 | 3.707 |
| 27 | 0.000 | 0.684 | 0.855 | 1.057 | 1.314 | 1.703 | 2.052 | 2.473 | 2.771 | 3.421 | 3.690 |
| 28 | 0.000 | 0.683 | 0.855 | 1.056 | 1.313 | 1.701 | 2.048 | 2.467 | 2.763 | 3.408 | 3.674 |
| 29 | 0.000 | 0.683 | 0.854 | 1.055 | 1.311 | 1.699 | 2.045 | 2.462 | 2.756 | 3.396 | 3.659 |
| 30 | 0.000 | 0.683 | 0.854 | 1.055 | 1.310 | 1.697 | 2.042 | 2.457 | 2.750 | 3.385 | 3.646 |
| 40 | 0.000 | 0.681 | 0.851 | 1.050 | 1.303 | 1.684 | 2.021 | 2.423 | 2.704 | 3.307 | 3.551 |
| 60 | 0.000 | 0.679 | 0.848 | 1.045 | 1.296 | 1.671 | 2.000 | 2.390 | 2.660 | 3.232 | 3.460 |
| 80 | 0.000 | 0.678 | 0.846 | 1.043 | 1.292 | 1.664 | 1.990 | 2.374 | 2.639 | 3.195 | 3.416 |
| 100 | 0.000 | 0.677 | 0.845 | 1.042 | 1.290 | 1.660 | 1.984 | 2.364 | 2.626 | 3.174 | 3.390 |
| 1000 | 0.000 | 0.675 | 0.842 | 1.037 | 1.282 | 1.646 | 1.962 | 2.330 | 2.581 | 3.098 | 3.300 |
| Z | 0.000 | 0.674 | 0.842 | 1.036 | 1.282 | 1.645 | 1.960 | 2.326 | 2.576 | 3.090 | 3.291 |
| | 0% | 50% | 60% | 70% | 80% | 90% | 95% | 98% | 99% | 99.8% | 99.9% |
| | Confidence Level | | | | | | | | | | |

Table entry for p is the critical value F^* with probability p lying to its right.

**TABLE E****F critical values**

| | | Degrees of freedom in the numerator | | | | | | | | |
|---------------------------------------|---|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| p | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Degrees of freedom in the denominator | 1 | .100 | 39.86 | 49.50 | 53.59 | 55.83 | 57.24 | 58.20 | 58.91 | 59.44 |
| | | .050 | 161.45 | 199.50 | 215.71 | 224.58 | 230.16 | 233.99 | 236.77 | 238.88 |
| | | .025 | 647.79 | 799.50 | 864.16 | 899.58 | 921.85 | 937.11 | 948.22 | 956.66 |
| | | .010 | 4052.2 | 4999.5 | 5403.4 | 5624.6 | 5763.6 | 5859.0 | 5928.4 | 5981.1 |
| | | .001 | 405284 | 500000 | 540379 | 562500 | 576405 | 585937 | 592873 | 598144 |
| | 2 | .100 | 8.53 | 9.00 | 9.16 | 9.24 | 9.29 | 9.33 | 9.35 | 9.37 |
| | | .050 | 18.51 | 19.00 | 19.16 | 19.25 | 19.30 | 19.33 | 19.35 | 19.37 |
| | | .025 | 38.51 | 39.00 | 39.17 | 39.25 | 39.30 | 39.33 | 39.36 | 39.37 |
| | | .010 | 98.50 | 99.00 | 99.17 | 99.25 | 99.30 | 99.33 | 99.36 | 99.37 |
| | | .001 | 998.50 | 999.00 | 999.17 | 999.25 | 999.30 | 999.33 | 999.36 | 999.37 |
| | 3 | .100 | 5.54 | 5.46 | 5.39 | 5.34 | 5.31 | 5.28 | 5.27 | 5.25 |
| | | .050 | 10.13 | 9.55 | 9.28 | 9.12 | 9.01 | 8.94 | 8.89 | 8.85 |
| | | .025 | 17.44 | 16.04 | 15.44 | 15.10 | 14.88 | 14.73 | 14.62 | 14.54 |
| | | .010 | 34.12 | 30.82 | 29.46 | 28.71 | 28.24 | 27.91 | 27.67 | 27.49 |
| | | .001 | 167.03 | 148.50 | 141.11 | 137.10 | 134.58 | 132.85 | 131.58 | 130.62 |
| | 4 | .100 | 4.54 | 4.32 | 4.19 | 4.11 | 4.05 | 4.01 | 3.98 | 3.95 |
| | | .050 | 7.71 | 6.94 | 6.59 | 6.39 | 6.26 | 6.16 | 6.09 | 6.04 |
| | | .025 | 12.22 | 10.65 | 9.98 | 9.60 | 9.36 | 9.20 | 9.07 | 8.98 |
| | | .010 | 21.20 | 18.00 | 16.69 | 15.98 | 15.52 | 15.21 | 14.98 | 14.80 |
| | | .001 | 74.14 | 61.25 | 56.18 | 53.44 | 51.71 | 50.53 | 49.66 | 49.00 |
| | 5 | .100 | 4.06 | 3.78 | 3.62 | 3.52 | 3.45 | 3.40 | 3.37 | 3.34 |
| | | .050 | 6.61 | 5.79 | 5.41 | 5.19 | 5.05 | 4.95 | 4.88 | 4.82 |
| | | .025 | 10.01 | 8.43 | 7.76 | 7.39 | 7.15 | 6.98 | 6.85 | 6.76 |
| | | .010 | 16.26 | 13.27 | 12.06 | 11.39 | 10.97 | 10.67 | 10.46 | 10.29 |
| | | .001 | 47.18 | 37.12 | 33.20 | 31.09 | 29.75 | 28.83 | 28.16 | 27.65 |
| | 6 | .100 | 3.78 | 3.46 | 3.29 | 3.18 | 3.11 | 3.05 | 3.01 | 2.98 |
| | | .050 | 5.99 | 5.14 | 4.76 | 4.53 | 4.39 | 4.28 | 4.21 | 4.15 |
| | | .025 | 8.81 | 7.26 | 6.60 | 6.23 | 5.99 | 5.82 | 5.70 | 5.60 |
| | | .010 | 13.75 | 10.92 | 9.78 | 9.15 | 8.75 | 8.47 | 8.26 | 8.10 |
| | | .001 | 35.51 | 27.00 | 23.70 | 21.92 | 20.80 | 20.03 | 19.46 | 19.03 |
| | 7 | .100 | 3.59 | 3.26 | 3.07 | 2.96 | 2.88 | 2.83 | 2.78 | 2.75 |
| | | .050 | 5.59 | 4.74 | 4.35 | 4.12 | 3.97 | 3.87 | 3.79 | 3.73 |
| | | .025 | 8.07 | 6.54 | 5.89 | 5.52 | 5.29 | 5.12 | 4.99 | 4.90 |
| | | .010 | 12.25 | 9.55 | 8.45 | 7.85 | 7.46 | 7.19 | 6.99 | 6.84 |
| | | .001 | 29.25 | 21.69 | 18.77 | 17.20 | 16.21 | 15.52 | 15.02 | 14.63 |
| | 8 | .100 | 3.50 | 3.17 | 2.98 | 2.87 | 2.79 | 2.74 | 2.69 | 2.66 |
| | | .050 | 5.49 | 4.64 | 4.25 | 4.02 | 3.87 | 3.77 | 3.69 | 3.63 |
| | | .025 | 7.96 | 6.43 | 5.78 | 5.41 | 5.18 | 5.01 | 4.88 | 4.79 |
| | | .010 | 12.13 | 9.43 | 8.33 | 7.73 | 7.34 | 7.07 | 6.87 | 6.72 |
| | | .001 | 28.95 | 21.39 | 18.47 | 16.90 | 15.91 | 15.22 | 14.72 | 14.33 |
| | 9 | .100 | 3.43 | 3.10 | 2.91 | 2.80 | 2.72 | 2.67 | 2.62 | 2.59 |
| | | .050 | 5.42 | 4.57 | 4.18 | 3.95 | 3.80 | 3.70 | 3.62 | 3.56 |
| | | .025 | 7.89 | 6.36 | 5.71 | 5.34 | 5.11 | 4.94 | 4.81 | 4.72 |
| | | .010 | 12.06 | 9.36 | 8.26 | 7.66 | 7.27 | 7.00 | 6.80 | 6.65 |
| | | .001 | 28.87 | 21.31 | 18.39 | 16.82 | 15.83 | 15.14 | 14.64 | 14.25 |