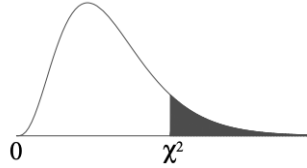


# Chi-square table: quantiles



Column headers correspond to shaded area.

| d.f. | .995  | .99   | .975  | .95   | .9    | .1     | .05    | .025   | .01    |
|------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| 1    | 0.00  | 0.00  | 0.00  | 0.00  | 0.02  | 2.71   | 3.84   | 5.02   | 6.63   |
| 2    | 0.01  | 0.02  | 0.05  | 0.10  | 0.21  | 4.61   | 5.99   | 7.38   | 9.21   |
| 3    | 0.07  | 0.11  | 0.22  | 0.35  | 0.58  | 6.25   | 7.81   | 9.35   | 11.34  |
| 4    | 0.21  | 0.30  | 0.48  | 0.71  | 1.06  | 7.78   | 9.49   | 11.14  | 13.28  |
| 5    | 0.41  | 0.55  | 0.83  | 1.15  | 1.61  | 9.24   | 11.07  | 12.83  | 15.09  |
| 6    | 0.68  | 0.87  | 1.24  | 1.64  | 2.20  | 10.64  | 12.59  | 14.45  | 16.81  |
| 7    | 0.99  | 1.24  | 1.69  | 2.17  | 2.83  | 12.02  | 14.07  | 16.01  | 18.48  |
| 8    | 1.34  | 1.65  | 2.18  | 2.73  | 3.49  | 13.36  | 15.51  | 17.53  | 20.09  |
| 9    | 1.73  | 2.09  | 2.70  | 3.33  | 4.17  | 14.68  | 16.92  | 19.02  | 21.67  |
| 10   | 2.16  | 2.56  | 3.25  | 3.94  | 4.87  | 15.99  | 18.31  | 20.48  | 23.21  |
| 11   | 2.60  | 3.05  | 3.82  | 4.57  | 5.58  | 17.28  | 19.68  | 21.92  | 24.72  |
| 12   | 3.07  | 3.57  | 4.40  | 5.23  | 6.30  | 18.55  | 21.03  | 23.34  | 26.22  |
| 13   | 3.57  | 4.11  | 5.01  | 5.89  | 7.04  | 19.81  | 22.36  | 24.74  | 27.69  |
| 14   | 4.07  | 4.66  | 5.63  | 6.57  | 7.79  | 21.06  | 23.68  | 26.12  | 29.14  |
| 15   | 4.60  | 5.23  | 6.26  | 7.26  | 8.55  | 22.31  | 25.00  | 27.49  | 30.58  |
| 16   | 5.14  | 5.81  | 6.91  | 7.96  | 9.31  | 23.54  | 26.30  | 28.85  | 32.00  |
| 17   | 5.70  | 6.41  | 7.56  | 8.67  | 10.09 | 24.77  | 27.59  | 30.19  | 33.41  |
| 18   | 6.26  | 7.01  | 8.23  | 9.39  | 10.86 | 25.99  | 28.87  | 31.53  | 34.81  |
| 19   | 6.84  | 7.63  | 8.91  | 10.12 | 11.65 | 27.20  | 30.14  | 32.85  | 36.19  |
| 20   | 7.43  | 8.26  | 9.59  | 10.85 | 12.44 | 28.41  | 31.41  | 34.17  | 37.57  |
| 22   | 8.64  | 9.54  | 10.98 | 12.34 | 14.04 | 30.81  | 33.92  | 36.78  | 40.29  |
| 24   | 9.89  | 10.86 | 12.40 | 13.85 | 15.66 | 33.20  | 36.42  | 39.36  | 42.98  |
| 26   | 11.16 | 12.20 | 13.84 | 15.38 | 17.29 | 35.56  | 38.89  | 41.92  | 45.64  |
| 28   | 12.46 | 13.56 | 15.31 | 16.93 | 18.94 | 37.92  | 41.34  | 44.46  | 48.28  |
| 30   | 13.79 | 14.95 | 16.79 | 18.49 | 20.60 | 40.26  | 43.77  | 46.98  | 50.89  |
| 32   | 15.13 | 16.36 | 18.29 | 20.07 | 22.27 | 42.58  | 46.19  | 49.48  | 53.49  |
| 34   | 16.50 | 17.79 | 19.81 | 21.66 | 23.95 | 44.90  | 48.60  | 51.97  | 56.06  |
| 38   | 19.29 | 20.69 | 22.88 | 24.88 | 27.34 | 49.51  | 53.38  | 56.90  | 61.16  |
| 42   | 22.14 | 23.65 | 26.00 | 28.14 | 30.77 | 54.09  | 58.12  | 61.78  | 66.21  |
| 46   | 25.04 | 26.66 | 29.16 | 31.44 | 34.22 | 58.64  | 62.83  | 66.62  | 71.20  |
| 50   | 27.99 | 29.71 | 32.36 | 34.76 | 37.69 | 63.17  | 67.50  | 71.42  | 76.15  |
| 55   | 31.73 | 33.57 | 36.40 | 38.96 | 42.06 | 68.80  | 73.31  | 77.38  | 82.29  |
| 60   | 35.53 | 37.48 | 40.48 | 43.19 | 46.46 | 74.40  | 79.08  | 83.30  | 88.38  |
| 65   | 39.38 | 41.44 | 44.60 | 47.45 | 50.88 | 79.97  | 84.82  | 89.18  | 94.42  |
| 70   | 43.28 | 45.44 | 48.76 | 51.74 | 55.33 | 85.53  | 90.53  | 95.02  | 100.43 |
| 75   | 47.21 | 49.48 | 52.94 | 56.05 | 59.79 | 91.06  | 96.22  | 100.84 | 106.39 |
| 80   | 51.17 | 53.54 | 57.15 | 60.39 | 64.28 | 96.58  | 101.88 | 106.63 | 112.33 |
| 85   | 55.17 | 57.63 | 61.39 | 64.75 | 68.78 | 102.08 | 107.52 | 112.39 | 118.24 |
| 90   | 59.20 | 61.75 | 65.65 | 69.13 | 73.29 | 107.57 | 113.15 | 118.14 | 124.12 |
| 95   | 63.25 | 65.90 | 69.92 | 73.52 | 77.82 | 113.04 | 118.75 | 123.86 | 129.97 |
| 100  | 67.33 | 70.06 | 74.22 | 77.93 | 82.36 | 118.50 | 124.34 | 129.56 | 135.81 |