

Quantiles χ_p^2 of chi-squared distribution

| $\frac{p}{k}$ | 0,01 | 0,01 | 0,03 | 0,05 | 0,95 | 0,98 | 0,99 | 1 |
|---------------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1 | 0,00004 | 0,00016 | 0,00098 | 0,00393 | 3,84146 | 5,02389 | 6,63490 | 7,87944 |
| 2 | 0,01003 | 0,02010 | 0,05064 | 0,10259 | 5,99146 | 7,37776 | 9,21034 | 10,59663 |
| 3 | 0,07172 | 0,11483 | 0,21580 | 0,35185 | 7,81473 | 9,34840 | 11,34487 | 12,83816 |
| 4 | 0,20699 | 0,29711 | 0,48442 | 0,71072 | 9,48773 | 11,14329 | 13,27670 | 14,86026 |
| 5 | 0,41174 | 0,55430 | 0,83121 | 1,14548 | 11,07050 | 12,83250 | 15,08627 | 16,74960 |
| 6 | 0,67573 | 0,87209 | 1,23734 | 1,63538 | 12,59159 | 14,44938 | 16,81189 | 18,54758 |
| 7 | 0,98926 | 1,23904 | 1,68987 | 2,16735 | 14,06714 | 16,01276 | 18,47531 | 20,27774 |
| 8 | 1,34441 | 1,64650 | 2,17973 | 2,73264 | 15,50731 | 17,53455 | 20,09024 | 21,95496 |
| 9 | 1,73493 | 2,08790 | 2,70039 | 3,32511 | 16,91898 | 19,02277 | 21,66599 | 23,58935 |
| 10 | 2,15586 | 2,55821 | 3,24697 | 3,94030 | 18,30704 | 20,48318 | 23,20925 | 25,18818 |
| 11 | 2,60322 | 3,05348 | 3,81575 | 4,57481 | 19,67514 | 21,92005 | 24,72497 | 26,75685 |
| 12 | 3,07382 | 3,57057 | 4,40379 | 5,22603 | 21,02607 | 23,33666 | 26,21697 | 28,29952 |
| 13 | 3,56503 | 4,10692 | 5,00875 | 5,89186 | 22,36203 | 24,73560 | 27,68825 | 29,81947 |
| 14 | 4,07467 | 4,66043 | 5,62873 | 6,57063 | 23,68479 | 26,11895 | 29,14124 | 31,31935 |
| 15 | 4,60092 | 5,22935 | 6,26214 | 7,26094 | 24,99579 | 27,48839 | 30,57791 | 32,80132 |
| 16 | 5,14221 | 5,81221 | 6,90766 | 7,96165 | 26,29623 | 28,84535 | 31,99993 | 34,26719 |
| 17 | 5,69722 | 6,40776 | 7,56419 | 8,67176 | 27,58711 | 30,19101 | 33,40866 | 35,71847 |
| 18 | 6,26480 | 7,01491 | 8,23075 | 9,39046 | 28,86930 | 31,52638 | 34,80531 | 37,15645 |
| 19 | 6,84397 | 7,63273 | 8,90652 | 10,11701 | 30,14353 | 32,85233 | 36,19087 | 38,58226 |
| 20 | 7,43384 | 8,26040 | 9,59078 | 10,85081 | 31,41043 | 34,16961 | 37,56623 | 39,99685 |
| 21 | 8,03365 | 8,89720 | 10,28290 | 11,59131 | 32,67057 | 35,47888 | 38,93217 | 41,40106 |
| 22 | 8,64272 | 9,54249 | 10,98232 | 12,33801 | 33,92444 | 36,78071 | 40,28936 | 42,79566 |
| 23 | 9,26042 | 10,19572 | 11,68855 | 13,09051 | 35,17246 | 38,07563 | 41,63840 | 44,18128 |
| 24 | 9,88623 | 10,85636 | 12,40115 | 13,84843 | 36,41503 | 39,36408 | 42,97982 | 45,55851 |
| 25 | 10,51965 | 11,52398 | 13,11972 | 14,61141 | 37,65248 | 40,64647 | 44,31410 | 46,92789 |
| 26 | 11,16024 | 12,19815 | 13,84390 | 15,37916 | 38,88514 | 41,92317 | 45,64168 | 48,28988 |
| 27 | 11,80759 | 12,87850 | 14,57338 | 16,15140 | 40,11327 | 43,19451 | 46,96294 | 49,64492 |
| 28 | 12,46134 | 13,56471 | 15,30786 | 16,92788 | 41,33714 | 44,46079 | 48,27824 | 50,99338 |
| 29 | 13,12115 | 14,25645 | 16,04707 | 17,70837 | 42,55697 | 45,72229 | 49,58788 | 52,33562 |
| 30 | 13,78672 | 14,95346 | 16,79077 | 18,49266 | 43,77297 | 46,97924 | 50,89218 | 53,67196 |
| 31 | 14,45777 | 15,65546 | 17,53874 | 19,28057 | 44,98534 | 48,23189 | 52,19139 | 55,00270 |
| 32 | 15,13403 | 16,36222 | 18,29076 | 20,07191 | 46,19426 | 49,48044 | 53,48577 | 56,32812 |
| 33 | 15,81527 | 17,07351 | 19,04666 | 20,86653 | 47,39988 | 50,72508 | 54,77554 | 57,64845 |
| 34 | 16,50127 | 17,78915 | 19,80625 | 21,66428 | 48,60237 | 51,96600 | 56,06091 | 58,96393 |
| 35 | 17,19182 | 18,50893 | 20,56938 | 22,46502 | 49,80185 | 53,20335 | 57,34207 | 60,27477 |
| 36 | 17,88673 | 19,23268 | 21,33588 | 23,26861 | 50,99846 | 54,43729 | 58,61921 | 61,58118 |
| 37 | 18,58581 | 19,96023 | 22,10563 | 24,07494 | 52,19232 | 55,66797 | 59,89250 | 62,88334 |
| 38 | 19,28891 | 20,69144 | 22,87848 | 24,88390 | 53,38354 | 56,89552 | 61,16209 | 64,18141 |
| 39 | 19,99587 | 21,42616 | 23,65432 | 25,69539 | 54,57223 | 58,12006 | 62,42812 | 65,47557 |
| 40 | 20,70654 | 22,16426 | 24,43304 | 26,50930 | 55,75848 | 59,34171 | 63,69074 | 66,76596 |
| 41 | 21,42078 | 22,90561 | 25,21452 | 27,32555 | 56,94239 | 60,56057 | 64,95007 | 68,05273 |
| 42 | 22,13846 | 23,65009 | 25,99866 | 28,14405 | 58,12404 | 61,77676 | 66,20624 | 69,33600 |
| 43 | 22,85947 | 24,39760 | 26,78537 | 28,96472 | 59,30351 | 62,99036 | 67,45935 | 70,61590 |
| 44 | 23,58369 | 25,14803 | 27,57457 | 29,78748 | 60,48089 | 64,20146 | 68,70951 | 71,89255 |
| 45 | 24,31101 | 25,90127 | 28,36615 | 30,61226 | 61,65623 | 65,41016 | 69,95683 | 73,16606 |
| 46 | 25,04133 | 26,65724 | 29,16005 | 31,43900 | 62,82962 | 66,61653 | 71,20140 | 74,43654 |
| 47 | 25,77456 | 27,41585 | 29,95620 | 32,26762 | 64,00111 | 67,82065 | 72,44331 | 75,70407 |
| 48 | 26,51059 | 28,17701 | 30,75451 | 33,09808 | 65,17077 | 69,02259 | 73,68264 | 76,96877 |
| 49 | 27,24935 | 28,94065 | 31,55492 | 33,93031 | 66,33865 | 70,22241 | 74,91947 | 78,23071 |
| 50 | 27,99075 | 29,70668 | 32,35736 | 34,76425 | 67,50481 | 71,42020 | 76,15389 | 79,48998 |

Quantiles χ_p^2 of chi-squared distribution

| $\frac{p}{k}$ | 0,01 | 0,01 | 0,03 | 0,05 | 0,95 | 0,98 | 0,99 | 1 |
|---------------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|
| 51 | 28,73471 | 30,47505 | 33,16179 | 35,59986 | 68,66929 | 72,61599 | 77,38596 | 80,74666 |
| 52 | 29,48116 | 31,24567 | 33,96813 | 36,43709 | 69,83216 | 73,80986 | 78,61576 | 82,00083 |
| 53 | 30,23003 | 32,01849 | 34,77633 | 37,27589 | 70,99345 | 75,00186 | 79,84334 | 83,25255 |
| 54 | 30,98125 | 32,79345 | 35,58634 | 38,11622 | 72,15322 | 76,19205 | 81,06877 | 84,50190 |
| 55 | 31,73476 | 33,57048 | 36,39811 | 38,95803 | 73,31149 | 77,38047 | 82,29212 | 85,74895 |
| 56 | 32,49049 | 34,34952 | 37,21159 | 39,80128 | 74,46832 | 78,56716 | 83,51343 | 86,99376 |
| 57 | 33,24838 | 35,13053 | 38,02674 | 40,64593 | 75,62375 | 79,75219 | 84,73277 | 88,23638 |
| 58 | 34,00838 | 35,91346 | 38,84351 | 41,49195 | 76,77780 | 80,93559 | 85,95018 | 89,47687 |
| 59 | 34,77043 | 36,69825 | 39,66186 | 42,33931 | 77,93052 | 82,11741 | 87,16571 | 90,71529 |
| 60 | 35,53449 | 37,48485 | 40,48175 | 43,18796 | 79,08194 | 83,29767 | 88,37942 | 91,95170 |
| 61 | 36,30050 | 38,27323 | 41,30314 | 44,03787 | 80,23210 | 84,47644 | 89,59134 | 93,18614 |
| 62 | 37,06842 | 39,06333 | 42,12599 | 44,88902 | 81,38102 | 85,65373 | 90,80153 | 94,41865 |
| 63 | 37,83819 | 39,85512 | 42,95027 | 45,74138 | 82,52873 | 86,82959 | 92,01002 | 95,64930 |
| 64 | 38,60978 | 40,64856 | 43,77595 | 46,59491 | 83,67526 | 88,00405 | 93,21686 | 96,87811 |
| 65 | 39,38314 | 41,44361 | 44,60299 | 47,44958 | 84,82065 | 89,17715 | 94,42208 | 98,10514 |
| 66 | 40,15824 | 42,24023 | 45,43136 | 48,30538 | 85,96491 | 90,34890 | 95,62572 | 99,33043 |
| 67 | 40,93502 | 43,03838 | 46,26103 | 49,16227 | 87,10807 | 91,51936 | 96,82782 | 100,55401 |
| 68 | 41,71347 | 43,83803 | 47,09198 | 50,02023 | 88,25016 | 92,68854 | 98,02840 | 101,77592 |
| 69 | 42,49353 | 44,63916 | 47,92416 | 50,87924 | 89,39121 | 93,85647 | 99,22752 | 102,99621 |
| 70 | 43,27518 | 45,44172 | 48,75756 | 51,73928 | 90,53123 | 95,02318 | 100,42518 | 104,21490 |
| 71 | 44,05838 | 46,24568 | 49,59216 | 52,60031 | 91,67024 | 96,18870 | 101,62144 | 105,43203 |
| 72 | 44,84310 | 47,05103 | 50,42791 | 53,46233 | 92,80827 | 97,35305 | 102,81631 | 106,64763 |
| 73 | 45,62930 | 47,85772 | 51,26481 | 54,32531 | 93,94534 | 98,51626 | 104,00983 | 107,86174 |
| 74 | 46,41696 | 48,66573 | 52,10283 | 55,18923 | 95,08147 | 99,67835 | 105,20203 | 109,07438 |
| 75 | 47,20605 | 49,47503 | 52,94194 | 56,05407 | 96,21667 | 100,83934 | 106,39292 | 110,28558 |
| 76 | 47,99653 | 50,28560 | 53,78212 | 56,91982 | 97,35097 | 101,99925 | 107,58254 | 111,49538 |
| 77 | 48,78839 | 51,09741 | 54,62336 | 57,78645 | 98,48438 | 103,15811 | 108,77092 | 112,70380 |
| 78 | 49,58159 | 51,91045 | 55,46562 | 58,65394 | 99,61693 | 104,31594 | 109,95807 | 113,91087 |
| 79 | 50,37612 | 52,72468 | 56,30890 | 59,52229 | 100,74862 | 105,47275 | 111,14402 | 115,11661 |
| 80 | 51,17193 | 53,54008 | 57,15317 | 60,39148 | 101,87947 | 106,62857 | 112,32879 | 116,32106 |
| 81 | 51,96902 | 54,35663 | 57,99842 | 61,26148 | 103,00951 | 107,78341 | 113,51241 | 117,52422 |
| 82 | 52,76735 | 55,17431 | 58,84462 | 62,13229 | 104,13874 | 108,93729 | 114,69489 | 118,72613 |
| 83 | 53,56691 | 55,99310 | 59,69175 | 63,00389 | 105,26718 | 110,09024 | 115,87627 | 119,92682 |
| 84 | 54,36767 | 56,81298 | 60,53981 | 63,87626 | 106,39484 | 111,24226 | 117,05654 | 121,12629 |
| 85 | 55,16960 | 57,63393 | 61,38877 | 64,74940 | 107,52174 | 112,39337 | 118,23575 | 122,32458 |
| 86 | 55,97270 | 58,45593 | 62,23863 | 65,62328 | 108,64789 | 113,54360 | 119,41390 | 123,52170 |
| 87 | 56,77694 | 59,27896 | 63,08935 | 66,49790 | 109,77331 | 114,69295 | 120,59101 | 124,71768 |
| 88 | 57,58230 | 60,10301 | 63,94093 | 67,37323 | 110,89800 | 115,84144 | 121,76711 | 125,91254 |
| 89 | 58,38876 | 60,92805 | 64,79336 | 68,24928 | 112,02199 | 116,98908 | 122,94221 | 127,10628 |
| 90 | 59,19630 | 61,75408 | 65,64662 | 69,12603 | 113,14527 | 118,13589 | 124,11632 | 128,29894 |
| 91 | 60,00491 | 62,58107 | 66,50069 | 70,00346 | 114,26787 | 119,28189 | 125,28946 | 129,49053 |
| 92 | 60,81457 | 63,40901 | 67,35556 | 70,88157 | 115,38979 | 120,42708 | 126,46166 | 130,68107 |
| 93 | 61,62525 | 64,23788 | 68,21123 | 71,76034 | 116,51105 | 121,57148 | 127,63291 | 131,87058 |
| 94 | 62,43695 | 65,06767 | 69,06766 | 72,63977 | 117,63165 | 122,71511 | 128,80325 | 133,05906 |
| 95 | 63,24965 | 65,89836 | 69,92487 | 73,51984 | 118,75161 | 123,85797 | 129,97268 | 134,24655 |
| 96 | 64,06333 | 66,72994 | 70,78282 | 74,40054 | 119,87094 | 125,00007 | 131,14122 | 135,43305 |
| 97 | 64,87797 | 67,56240 | 71,64152 | 75,28186 | 120,98964 | 126,14144 | 132,30888 | 136,61858 |
| 98 | 65,69357 | 68,39572 | 72,50094 | 76,16379 | 122,10773 | 127,28207 | 133,47567 | 137,80315 |
| 99 | 66,51011 | 69,22989 | 73,36108 | 77,04633 | 123,22522 | 128,42199 | 134,64162 | 138,98678 |
| 100 | 67,32756 | 70,06489 | 74,22193 | 77,92947 | 124,34211 | 129,56120 | 135,80672 | 140,16949 |

Quantiles χ_p^2 of chi-squared distribution

| $\frac{p}{k}$ | 0,01 | 0,01 | 0,03 | 0,05 | 0,95 | 0,98 | 0,99 | 1 |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 101 | 68,14593 | 70,90072 | 75,08347 | 78,81318 | 125,45842 | 130,69971 | 136,97100 | 141,35128 |
| 102 | 68,96519 | 71,73736 | 75,94570 | 79,69748 | 126,57415 | 131,83753 | 138,13447 | 142,53218 |
| 103 | 69,78534 | 72,57480 | 76,80860 | 80,58234 | 127,68931 | 132,97468 | 139,29714 | 143,71219 |
| 104 | 70,60636 | 73,41303 | 77,67217 | 81,46777 | 128,80391 | 134,11116 | 140,45901 | 144,89132 |
| 105 | 71,42823 | 74,25203 | 78,53640 | 82,35374 | 129,91796 | 135,24699 | 141,62011 | 146,06960 |
| 106 | 72,25095 | 75,09180 | 79,40127 | 83,24026 | 131,03146 | 136,38216 | 142,78044 | 147,24702 |
| 107 | 73,07450 | 75,93232 | 80,26678 | 84,12732 | 132,14442 | 137,51670 | 143,94002 | 148,42361 |
| 108 | 73,89888 | 76,77359 | 81,13292 | 85,01490 | 133,25686 | 138,65061 | 145,09884 | 149,59938 |
| 109 | 74,72406 | 77,61559 | 81,99968 | 85,90301 | 134,36878 | 139,78390 | 146,25694 | 150,77433 |
| 110 | 75,55004 | 78,45831 | 82,86705 | 86,79163 | 135,48018 | 140,91657 | 147,41431 | 151,94848 |
| 111 | 76,37682 | 79,30175 | 83,73503 | 87,68075 | 136,59107 | 142,04864 | 148,57096 | 153,12184 |
| 112 | 77,20437 | 80,14589 | 84,60360 | 88,57038 | 137,70146 | 143,18012 | 149,72690 | 154,29442 |
| 113 | 78,03269 | 80,99072 | 85,47275 | 89,46050 | 138,81136 | 144,31101 | 150,88216 | 155,46623 |
| 114 | 78,86176 | 81,83625 | 86,34249 | 90,35111 | 139,92077 | 145,44132 | 152,03672 | 156,63728 |
| 115 | 79,69158 | 82,68244 | 87,21279 | 91,24220 | 141,02970 | 146,57105 | 153,19060 | 157,80759 |
| 116 | 80,52214 | 83,52931 | 88,08366 | 92,13376 | 142,13816 | 147,70022 | 154,34382 | 158,97715 |
| 117 | 81,35343 | 84,37683 | 88,95509 | 93,02579 | 143,24615 | 148,82884 | 155,49638 | 160,14598 |
| 118 | 82,18544 | 85,22501 | 89,82707 | 93,91829 | 144,35367 | 149,95690 | 156,64828 | 161,31409 |
| 119 | 83,01815 | 86,07383 | 90,69959 | 94,81124 | 145,46074 | 151,08442 | 157,79954 | 162,48149 |
| 120 | 83,85157 | 86,92328 | 91,57264 | 95,70464 | 146,56736 | 152,21140 | 158,95017 | 163,64818 |
| 121 | 84,68568 | 87,77336 | 92,44623 | 96,59848 | 147,67353 | 153,33786 | 160,10016 | 164,81419 |
| 122 | 85,52047 | 88,62405 | 93,32033 | 97,49277 | 148,77926 | 154,46379 | 161,24954 | 165,97950 |
| 123 | 86,35594 | 89,47536 | 94,19496 | 98,38748 | 149,88456 | 155,58920 | 162,39831 | 167,14414 |
| 124 | 87,19208 | 90,32727 | 95,07009 | 99,28263 | 150,98943 | 156,71410 | 163,54647 | 168,30811 |
| 125 | 88,02887 | 91,17978 | 95,94573 | 100,17820 | 152,09388 | 157,83850 | 164,69403 | 169,47142 |
| 126 | 88,86632 | 92,03288 | 96,82186 | 101,07419 | 153,19790 | 158,96240 | 165,84100 | 170,63408 |
| 127 | 89,70441 | 92,88656 | 97,69849 | 101,97059 | 154,30152 | 160,08581 | 166,98739 | 171,79609 |
| 128 | 90,54313 | 93,74081 | 98,57560 | 102,86740 | 155,40472 | 161,20873 | 168,13320 | 172,95747 |
| 129 | 91,38248 | 94,59564 | 99,45319 | 103,76462 | 156,50752 | 162,33118 | 169,27845 | 174,11821 |
| 130 | 92,22246 | 95,45102 | 100,33126 | 104,66223 | 157,60992 | 163,45314 | 170,42313 | 175,27834 |
| 131 | 93,06304 | 96,30696 | 101,20979 | 105,56024 | 158,71193 | 164,57464 | 171,56725 | 176,43785 |
| 132 | 93,90424 | 97,16345 | 102,08879 | 106,45864 | 159,81355 | 165,69567 | 172,71082 | 177,59674 |
| 133 | 94,74603 | 98,02048 | 102,96825 | 107,35742 | 160,91478 | 166,81625 | 173,85385 | 178,75504 |
| 134 | 95,58842 | 98,87805 | 103,84816 | 108,25658 | 162,01563 | 167,93636 | 174,99635 | 179,91275 |
| 135 | 96,43139 | 99,73615 | 104,72852 | 109,15612 | 163,11610 | 169,05604 | 176,13831 | 181,06986 |
| 136 | 97,27495 | 100,59478 | 105,60932 | 110,05604 | 164,21620 | 170,17526 | 177,27974 | 182,22639 |
| 137 | 98,11908 | 101,45392 | 106,49056 | 110,95632 | 165,31593 | 171,29405 | 178,42066 | 183,38235 |
| 138 | 98,96377 | 102,31358 | 107,37224 | 111,85697 | 166,41530 | 172,41241 | 179,56106 | 184,53774 |
| 139 | 99,80903 | 103,17374 | 108,25434 | 112,75797 | 167,51431 | 173,53033 | 180,70095 | 185,69257 |
| 140 | 100,65484 | 104,03441 | 109,13687 | 113,65934 | 168,61295 | 174,64783 | 181,84034 | 186,84684 |
| 141 | 101,50120 | 104,89558 | 110,01982 | 114,56105 | 169,71125 | 175,76491 | 182,97923 | 188,00056 |
| 142 | 102,34811 | 105,75723 | 110,90318 | 115,46312 | 170,80920 | 176,88158 | 184,11763 | 189,15374 |
| 143 | 103,19555 | 106,61938 | 111,78695 | 116,36553 | 171,90680 | 177,99783 | 185,25554 | 190,30638 |
| 144 | 104,04353 | 107,48200 | 112,67113 | 117,26828 | 173,00406 | 179,11368 | 186,39297 | 191,45848 |
| 145 | 104,89203 | 108,34510 | 113,55571 | 118,17137 | 174,10098 | 180,22912 | 187,52992 | 192,61005 |
| 146 | 105,74105 | 109,20867 | 114,44069 | 119,07480 | 175,19757 | 181,34417 | 188,66640 | 193,76111 |
| 147 | 106,59059 | 110,07271 | 115,32607 | 119,97855 | 176,29382 | 182,45882 | 189,80241 | 194,91165 |
| 148 | 107,44064 | 110,93721 | 116,21183 | 120,88264 | 177,38975 | 183,57308 | 190,93796 | 196,06167 |
| 149 | 108,29119 | 111,80217 | 117,09798 | 121,78705 | 178,48535 | 184,68695 | 192,07305 | 197,21119 |
| 150 | 109,14225 | 112,66758 | 117,98452 | 122,69178 | 179,58063 | 185,80045 | 193,20769 | 198,36021 |