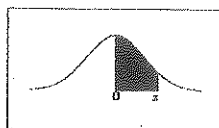


Standard Normal Distribution Table



| <i>z</i> | .00 | .01 | .02 | .03 | .04 | .05 | .06 | .07 | .08 | .09 |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.0 | .0000 | .0040 | .0080 | .0120 | .0160 | .0199 | .0239 | .0279 | .0319 | .0359 |
| 0.1 | .0398 | .0438 | .0478 | .0517 | .0557 | .0596 | .0636 | .0675 | .0714 | .0753 |
| 0.2 | .0793 | .0832 | .0871 | .0910 | .0948 | .0987 | .1026 | .1064 | .1103 | .1141 |
| 0.3 | .1179 | .1217 | .1255 | .1293 | .1331 | .1368 | .1406 | .1443 | .1480 | .1517 |
| 0.4 | .1554 | .1591 | .1628 | .1664 | .1700 | .1736 | .1772 | .1808 | .1844 | .1879 |
| 0.5 | .1915 | .1950 | .1985 | .2019 | .2054 | .2088 | .2123 | .2157 | .2190 | .2224 |
| 0.6 | .2257 | .2291 | .2324 | .2357 | .2389 | .2422 | .2454 | .2486 | .2517 | .2549 |
| 0.7 | .2580 | .2611 | .2642 | .2673 | .2704 | .2734 | .2764 | .2794 | .2823 | .2852 |
| 0.8 | .2881 | .2910 | .2939 | .2967 | .2995 | .3023 | .3051 | .3078 | .3106 | .3133 |
| 0.9 | .3159 | .3186 | .3212 | .3238 | .3264 | .3289 | .3315 | .3340 | .3365 | .3389 |
| 1.0 | .3413 | .3438 | .3461 | .3485 | .3508 | .3531 | .3554 | .3577 | .3599 | .3621 |
| 1.1 | .3643 | .3665 | .3686 | .3708 | .3729 | .3749 | .3770 | .3790 | .3810 | .3830 |
| 1.2 | .3849 | .3869 | .3888 | .3907 | .3925 | .3944 | .3962 | .3980 | .3997 | .4015 |
| 1.3 | .4032 | .4049 | .4066 | .4082 | .4099 | .4115 | .4131 | .4147 | .4162 | .4177 |
| 1.4 | .4192 | .4207 | .4222 | .4236 | .4251 | .4265 | .4279 | .4292 | .4306 | .4319 |
| 1.5 | .4332 | .4345 | .4357 | .4370 | .4382 | .4394 | .4406 | .4418 | .4429 | .4441 |
| 1.6 | .4452 | .4463 | .4474 | .4484 | .4495 | .4505 | .4515 | .4525 | .4535 | .4545 |
| 1.7 | .4554 | .4564 | .4573 | .4582 | .4591 | .4599 | .4608 | .4616 | .4625 | .4633 |
| 1.8 | .4641 | .4649 | .4656 | .4664 | .4671 | .4678 | .4686 | .4693 | .4699 | .4706 |
| 1.9 | .4713 | .4719 | .4726 | .4732 | .4738 | .4744 | .4750 | .4756 | .4761 | .4767 |
| 2.0 | .4772 | .4778 | .4783 | .4788 | .4793 | .4798 | .4803 | .4808 | .4812 | .4817 |
| 2.1 | .4821 | .4826 | .4830 | .4834 | .4838 | .4842 | .4846 | .4850 | .4854 | .4857 |
| 2.2 | .4861 | .4864 | .4868 | .4871 | .4875 | .4878 | .4881 | .4884 | .4887 | .4890 |
| 2.3 | .4893 | .4896 | .4898 | .4901 | .4904 | .4906 | .4909 | .4911 | .4913 | .4916 |
| 2.4 | .4918 | .4920 | .4922 | .4925 | .4927 | .4929 | .4931 | .4932 | .4934 | .4936 |
| 2.5 | .4938 | .4940 | .4941 | .4943 | .4945 | .4946 | .4948 | .4949 | .4951 | .4952 |
| 2.6 | .4953 | .4955 | .4956 | .4957 | .4959 | .4960 | .4961 | .4962 | .4963 | .4964 |
| 2.7 | .4965 | .4966 | .4967 | .4968 | .4969 | .4970 | .4971 | .4972 | .4973 | .4974 |
| 2.8 | .4974 | .4975 | .4976 | .4977 | .4977 | .4978 | .4979 | .4979 | .4980 | .4981 |
| 2.9 | .4981 | .4982 | .4982 | .4983 | .4984 | .4984 | .4985 | .4985 | .4986 | .4986 |
| 3.0 | .4987 | .4987 | .4987 | .4988 | .4988 | .4989 | .4989 | .4989 | .4990 | .4990 |
| 3.1 | .4990 | .4991 | .4991 | .4991 | .4992 | .4992 | .4992 | .4992 | .4993 | .4993 |
| 3.2 | .4993 | .4993 | .4994 | .4994 | .4994 | .4994 | .4994 | .4995 | .4995 | .4995 |
| 3.3 | .4995 | .4995 | .4995 | .4996 | .4996 | .4996 | .4996 | .4996 | .4996 | .4997 |
| 3.4 | .4997 | .4997 | .4997 | .4997 | .4997 | .4997 | .4997 | .4997 | .4997 | .4998 |
| 3.5 | .4998 | .4998 | .4998 | .4998 | .4998 | .4998 | .4998 | .4998 | .4998 | .4998 |

F Distribution

$\alpha = 0.05$

| d_2 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 161.4 | 199.5 | 215.7 | 224.6 | 230.2 | 234.0 | 236.8 | 238.9 | 240.5 |
| 2 | 18.51 | 19.00 | 19.16 | 19.25 | 19.3 | 19.33 | 19.35 | 19.37 | 19.38 |
| 3 | 10.13 | 9.55 | 9.28 | 9.12 | 9.01 | 8.94 | 8.89 | 8.85 | 8.81 |
| 4 | 7.71 | 6.94 | 6.59 | 6.39 | 6.26 | 6.16 | 6.09 | 6.04 | 6.00 |
| 5 | 6.61 | 5.79 | 5.41 | 5.19 | 5.05 | 4.95 | 4.88 | 4.82 | 4.77 |
| 6 | 5.99 | 5.14 | 4.76 | 4.53 | 4.39 | 4.28 | 4.21 | 4.15 | 4.10 |
| 7 | 5.59 | 4.74 | 4.35 | 4.12 | 3.97 | 3.87 | 3.79 | 3.73 | 3.68 |
| 8 | 5.32 | 4.46 | 4.07 | 3.84 | 3.69 | 3.58 | 3.50 | 3.44 | 3.39 |
| 9 | 5.12 | 4.26 | 3.86 | 3.63 | 3.48 | 3.37 | 3.29 | 3.23 | 3.18 |
| 10 | 4.96 | 4.10 | 3.71 | 3.48 | 3.33 | 3.22 | 3.14 | 3.07 | 3.02 |
| 11 | 4.84 | 3.98 | 3.59 | 3.36 | 3.20 | 3.09 | 3.01 | 2.95 | 2.90 |
| 12 | 4.75 | 3.89 | 3.49 | 3.26 | 3.11 | 3.00 | 2.91 | 2.85 | 2.80 |
| 13 | 4.67 | 3.81 | 3.41 | 3.18 | 3.03 | 2.92 | 2.83 | 2.77 | 2.71 |
| 14 | 4.60 | 3.74 | 3.34 | 3.11 | 2.96 | 2.85 | 2.76 | 2.70 | 2.65 |
| 15 | 4.54 | 3.68 | 3.29 | 3.06 | 2.90 | 2.79 | 2.71 | 2.64 | 2.59 |
| 16 | 4.49 | 3.63 | 3.24 | 3.01 | 2.85 | 2.74 | 2.66 | 2.59 | 2.54 |
| 17 | 4.45 | 3.59 | 3.20 | 2.96 | 2.81 | 2.70 | 2.61 | 2.55 | 2.49 |
| 18 | 4.41 | 3.55 | 3.16 | 2.93 | 2.77 | 2.66 | 2.58 | 2.51 | 2.46 |
| 19 | 4.38 | 3.52 | 3.13 | 2.90 | 2.74 | 2.63 | 2.54 | 2.48 | 2.42 |
| 20 | 4.35 | 3.49 | 3.10 | 2.87 | 2.71 | 2.60 | 2.51 | 2.45 | 2.39 |
| 21 | 4.32 | 3.47 | 3.07 | 2.84 | 2.68 | 2.57 | 2.49 | 2.42 | 2.37 |
| 22 | 4.30 | 3.44 | 3.05 | 2.82 | 2.66 | 2.55 | 2.46 | 2.40 | 2.34 |
| 23 | 4.28 | 3.42 | 3.03 | 2.80 | 2.64 | 2.53 | 2.44 | 2.37 | 2.32 |
| 24 | 4.26 | 3.40 | 3.01 | 2.78 | 2.62 | 2.51 | 2.42 | 2.36 | 2.30 |
| 25 | 4.24 | 3.39 | 2.99 | 2.76 | 2.60 | 2.49 | 2.40 | 2.34 | 2.28 |
| 26 | 4.23 | 3.37 | 2.98 | 2.74 | 2.59 | 2.47 | 2.39 | 2.32 | 2.27 |
| 27 | 4.21 | 3.35 | 2.96 | 2.73 | 2.57 | 2.46 | 2.37 | 2.31 | 2.25 |
| 28 | 4.20 | 3.34 | 2.95 | 2.71 | 2.56 | 2.45 | 2.36 | 2.29 | 2.24 |
| 29 | 4.18 | 3.33 | 2.93 | 2.70 | 2.55 | 2.43 | 2.35 | 2.28 | 2.22 |
| 30 | 4.17 | 3.32 | 2.92 | 2.69 | 2.53 | 2.42 | 2.33 | 2.27 | 2.21 |
| 40 | 4.08 | 3.23 | 2.84 | 2.61 | 2.45 | 2.34 | 2.25 | 2.18 | 2.12 |
| 60 | 4.00 | 3.15 | 2.76 | 2.53 | 2.37 | 2.25 | 2.17 | 2.10 | 2.04 |
| 120 | 3.92 | 3.07 | 2.68 | 2.45 | 2.29 | 2.17 | 2.09 | 2.02 | 1.96 |
| inf | 3.84 | 3.00 | 2.60 | 2.37 | 2.21 | 2.10 | 2.01 | 1.94 | 1.88 |

F Distribution

$\alpha = 0.05$

| d_2 | 10 | 12 | 15 | 20 | 24 | 30 | 40 | 60 | 120 | inf |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 241.9 | 243.9 | 245.9 | 248.0 | 249.1 | 250.1 | 251.1 | 252.2 | 253.3 | 254.3 |
| 2 | 19.4 | 19.41 | 19.43 | 19.45 | 19.45 | 19.46 | 19.47 | 19.48 | 19.49 | 19.5 |
| 3 | 8.79 | 8.74 | 8.70 | 8.66 | 8.64 | 8.62 | 8.59 | 8.57 | 8.55 | 8.53 |
| 4 | 5.96 | 5.91 | 5.86 | 5.80 | 5.77 | 5.75 | 5.72 | 5.69 | 5.66 | 5.63 |
| 5 | 4.74 | 4.68 | 4.62 | 4.56 | 4.53 | 4.50 | 4.46 | 4.43 | 4.40 | 4.36 |
| 6 | 4.06 | 4.00 | 3.94 | 3.87 | 3.84 | 3.81 | 3.77 | 3.74 | 3.70 | 3.67 |
| 7 | 3.64 | 3.57 | 3.51 | 3.44 | 3.41 | 3.38 | 3.34 | 3.30 | 3.27 | 3.23 |
| 8 | 3.35 | 3.28 | 3.22 | 3.15 | 3.12 | 3.08 | 3.04 | 3.01 | 2.97 | 2.93 |
| 9 | 3.14 | 3.07 | 3.01 | 2.94 | 2.90 | 2.86 | 2.83 | 2.79 | 2.75 | 2.71 |
| 10 | 2.98 | 2.91 | 2.85 | 2.77 | 2.74 | 2.70 | 2.66 | 2.62 | 2.58 | 2.54 |
| 11 | 2.85 | 2.79 | 2.72 | 2.65 | 2.61 | 2.57 | 2.53 | 2.49 | 2.45 | 2.40 |
| 12 | 2.75 | 2.69 | 2.62 | 2.54 | 2.51 | 2.47 | 2.43 | 2.38 | 2.34 | 2.30 |
| 13 | 2.67 | 2.60 | 2.53 | 2.46 | 2.42 | 2.38 | 2.34 | 2.30 | 2.25 | 2.21 |
| 14 | 2.60 | 2.53 | 2.46 | 2.39 | 2.35 | 2.31 | 2.27 | 2.22 | 2.18 | 2.13 |
| 15 | 2.54 | 2.48 | 2.40 | 2.33 | 2.29 | 2.25 | 2.20 | 2.16 | 2.11 | 2.07 |
| 16 | 2.49 | 2.42 | 2.35 | 2.28 | 2.24 | 2.19 | 2.15 | 2.11 | 2.06 | 2.01 |
| 17 | 2.45 | 2.38 | 2.31 | 2.23 | 2.19 | 2.15 | 2.10 | 2.06 | 2.01 | 1.96 |
| 18 | 2.41 | 2.34 | 2.27 | 2.19 | 2.15 | 2.11 | 2.06 | 2.02 | 1.97 | 1.92 |
| 19 | 2.38 | 2.31 | 2.23 | 2.16 | 2.11 | 2.07 | 2.03 | 1.98 | 1.93 | 1.88 |
| 20 | 2.35 | 2.28 | 2.20 | 2.12 | 2.08 | 2.04 | 1.99 | 1.95 | 1.90 | 1.84 |
| 21 | 2.32 | 2.25 | 2.18 | 2.10 | 2.05 | 2.01 | 1.96 | 1.92 | 1.87 | 1.81 |
| 22 | 2.30 | 2.23 | 2.15 | 2.07 | 2.03 | 1.98 | 1.94 | 1.89 | 1.84 | 1.78 |
| 23 | 2.27 | 2.20 | 2.13 | 2.05 | 2.01 | 1.96 | 1.91 | 1.86 | 1.81 | 1.76 |
| 24 | 2.25 | 2.18 | 2.11 | 2.03 | 1.98 | 1.94 | 1.89 | 1.84 | 1.79 | 1.73 |
| 25 | 2.24 | 2.16 | 2.09 | 2.01 | 1.96 | 1.92 | 1.87 | 1.82 | 1.77 | 1.71 |
| 26 | 2.22 | 2.15 | 2.07 | 1.99 | 1.95 | 1.90 | 1.85 | 1.80 | 1.75 | 1.69 |
| 27 | 2.20 | 2.13 | 2.06 | 1.97 | 1.93 | 1.88 | 1.84 | 1.79 | 1.73 | 1.67 |
| 28 | 2.19 | 2.12 | 2.04 | 1.96 | 1.91 | 1.87 | 1.82 | 1.77 | 1.71 | 1.65 |
| 29 | 2.18 | 2.10 | 2.03 | 1.94 | 1.90 | 1.85 | 1.81 | 1.75 | 1.70 | 1.64 |
| 30 | 2.16 | 2.09 | 2.01 | 1.93 | 1.89 | 1.84 | 1.79 | 1.74 | 1.68 | 1.62 |
| 40 | 2.08 | 2.00 | 1.92 | 1.84 | 1.79 | 1.74 | 1.69 | 1.64 | 1.58 | 1.51 |
| 60 | 1.99 | 1.92 | 1.84 | 1.75 | 1.70 | 1.65 | 1.59 | 1.53 | 1.47 | 1.39 |
| 120 | 1.91 | 1.83 | 1.75 | 1.66 | 1.10 | 1.55 | 1.50 | 1.43 | 1.35 | 1.25 |
| inf | 1.83 | 1.75 | 1.67 | 1.57 | 1.52 | 1.46 | 1.39 | 1.32 | 1.22 | 1.00 |

F Distribution

$\alpha = 0.01$

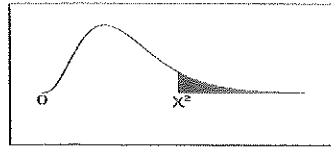
| d_2 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 4052 | 4999.5 | 5403 | 5625 | 5764 | 5859 | 5928 | 5982 | 6022 |
| 2 | 98.50 | 99.00 | 99.17 | 99.25 | 99.30 | 99.33 | 99.36 | 99.37 | 99.39 |
| 3 | 34.12 | 30.82 | 29.46 | 28.71 | 28.24 | 27.91 | 27.67 | 27.49 | 27.35 |
| 4 | 21.20 | 18.00 | 16.69 | 15.98 | 15.52 | 15.21 | 14.98 | 14.80 | 14.66 |
| 5 | 16.26 | 13.27 | 12.06 | 11.39 | 10.97 | 10.67 | 10.46 | 10.29 | 10.16 |
| 6 | 13.75 | 10.92 | 9.78 | 9.15 | 8.75 | 8.47 | 8.26 | 8.10 | 7.98 |
| 7 | 12.25 | 9.55 | 8.45 | 7.85 | 7.46 | 7.19 | 6.99 | 6.84 | 6.72 |
| 8 | 11.26 | 8.65 | 7.59 | 7.01 | 6.63 | 6.37 | 6.18 | 6.03 | 5.91 |
| 9 | 10.56 | 8.02 | 6.99 | 6.42 | 6.06 | 5.80 | 5.61 | 5.47 | 5.35 |
| 10 | 10.04 | 7.56 | 6.55 | 5.99 | 5.64 | 5.39 | 5.2 | 5.06 | 4.94 |
| 11 | 9.65 | 7.21 | 6.22 | 5.67 | 5.32 | 5.07 | 4.89 | 4.74 | 4.63 |
| 12 | 9.33 | 6.93 | 5.95 | 5.41 | 5.06 | 4.82 | 4.64 | 4.50 | 4.39 |
| 13 | 9.07 | 6.70 | 5.74 | 5.21 | 4.86 | 4.62 | 4.44 | 4.30 | 4.14 |
| 14 | 8.86 | 6.51 | 5.56 | 5.04 | 4.69 | 4.46 | 4.28 | 4.14 | 4.03 |
| 15 | 8.68 | 6.36 | 5.42 | 4.89 | 4.56 | 4.32 | 4.14 | 4.00 | 3.89 |
| 16 | 8.53 | 6.23 | 5.29 | 4.77 | 4.44 | 4.20 | 4.03 | 3.89 | 3.78 |
| 17 | 8.40 | 6.11 | 5.18 | 4.67 | 4.34 | 4.10 | 3.93 | 3.79 | 3.68 |
| 18 | 8.29 | 6.01 | 5.09 | 4.58 | 4.25 | 4.01 | 3.84 | 3.71 | 3.60 |
| 19 | 8.18 | 5.93 | 5.01 | 4.50 | 4.17 | 3.94 | 3.77 | 3.63 | 3.52 |
| 20 | 8.10 | 5.85 | 4.94 | 4.43 | 4.10 | 3.87 | 3.70 | 3.56 | 3.46 |
| 21 | 8.02 | 5.78 | 4.87 | 4.37 | 4.04 | 3.81 | 3.64 | 3.51 | 3.40 |
| 22 | 7.95 | 5.72 | 4.82 | 4.31 | 3.99 | 3.76 | 3.59 | 3.45 | 3.35 |
| 23 | 7.88 | 5.66 | 4.76 | 4.26 | 3.94 | 3.71 | 3.54 | 3.41 | 3.30 |
| 24 | 7.82 | 5.61 | 4.72 | 4.22 | 3.90 | 3.67 | 3.50 | 3.36 | 3.26 |
| 25 | 7.77 | 5.57 | 4.68 | 4.18 | 3.85 | 3.63 | 3.46 | 3.32 | 3.22 |
| 26 | 7.72 | 5.53 | 4.64 | 4.14 | 3.82 | 3.59 | 3.42 | 3.29 | 3.18 |
| 27 | 7.68 | 5.49 | 4.60 | 4.11 | 3.78 | 3.56 | 3.39 | 3.26 | 3.15 |
| 28 | 7.64 | 5.45 | 4.57 | 4.07 | 3.75 | 3.53 | 3.36 | 3.23 | 3.12 |
| 29 | 7.60 | 5.42 | 4.54 | 4.04 | 3.73 | 3.50 | 3.33 | 3.20 | 3.09 |
| 30 | 7.56 | 5.39 | 4.51 | 4.02 | 3.70 | 3.47 | 3.30 | 3.17 | 3.07 |
| 40 | 7.31 | 5.18 | 4.31 | 3.83 | 3.51 | 3.29 | 3.12 | 2.99 | 2.89 |
| 60 | 7.08 | 4.98 | 4.13 | 3.65 | 3.34 | 3.12 | 2.95 | 2.82 | 2.72 |
| 120 | 6.85 | 4.79 | 3.95 | 3.48 | 3.17 | 2.96 | 2.79 | 2.66 | 2.56 |
| inf | 6.63 | 4.61 | 3.78 | 3.32 | 3.02 | 2.80 | 2.64 | 2.51 | 2.41 |

F Distribution

$\alpha = 0.05$

| d_2 | 10 | 12 | 15 | 20 | 24 | 30 | 40 | 60 | 120 | inf |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 6056 | 6106 | 6157 | 6209 | 6235 | 6261 | 6287 | 6313 | 6339 | 6366 |
| 2 | 99.40 | 99.42 | 99.43 | 99.45 | 99.46 | 99.47 | 99.47 | 99.48 | 99.49 | 99.50 |
| 3 | 27.23 | 27.05 | 26.87 | 26.69 | 26.60 | 26.50 | 26.41 | 26.32 | 26.22 | 26.13 |
| 4 | 14.55 | 14.37 | 14.20 | 14.02 | 13.93 | 13.84 | 13.75 | 13.65 | 13.56 | 13.46 |
| 5 | 10.05 | 9.89 | 9.72 | 9.55 | 9.47 | 9.38 | 9.29 | 9.20 | 9.11 | 9.02 |
| 6 | 7.87 | 7.72 | 7.56 | 7.40 | 7.31 | 7.23 | 7.14 | 7.06 | 6.97 | 6.88 |
| 7 | 6.62 | 6.47 | 6.31 | 6.16 | 6.07 | 5.99 | 5.91 | 5.82 | 5.74 | 5.65 |
| 8 | 5.81 | 5.67 | 5.52 | 5.36 | 5.28 | 5.20 | 5.12 | 5.03 | 4.95 | 4.86 |
| 9 | 5.26 | 5.11 | 4.96 | 4.81 | 4.73 | 4.65 | 4.57 | 4.48 | 4.40 | 4.31 |
| 10 | 4.85 | 4.71 | 4.56 | 4.41 | 4.33 | 4.25 | 4.17 | 4.08 | 4.00 | 3.91 |
| 11 | 4.54 | 4.40 | 4.25 | 4.10 | 4.02 | 3.94 | 3.86 | 3.78 | 3.69 | 3.60 |
| 12 | 4.30 | 4.16 | 4.01 | 3.86 | 3.78 | 3.70 | 3.62 | 3.54 | 3.45 | 3.36 |
| 13 | 4.10 | 3.96 | 3.82 | 3.66 | 3.59 | 3.51 | 3.43 | 3.34 | 3.25 | 3.17 |
| 14 | 3.94 | 3.80 | 3.66 | 3.51 | 3.43 | 3.35 | 3.27 | 3.18 | 3.09 | 3.00 |
| 15 | 3.80 | 3.67 | 3.52 | 3.37 | 3.29 | 3.21 | 3.13 | 3.05 | 2.96 | 2.87 |
| 16 | 3.69 | 3.55 | 3.41 | 3.26 | 3.18 | 3.10 | 3.02 | 2.93 | 2.84 | 2.75 |
| 17 | 3.59 | 3.46 | 3.31 | 3.16 | 3.08 | 3.00 | 2.92 | 2.83 | 2.75 | 2.65 |
| 18 | 3.51 | 3.37 | 3.23 | 3.08 | 3.00 | 2.92 | 2.84 | 2.75 | 2.66 | 2.57 |
| 19 | 3.43 | 3.30 | 3.15 | 3.00 | 2.92 | 2.84 | 2.76 | 2.67 | 2.58 | 2.49 |
| 20 | 3.37 | 3.23 | 3.09 | 2.94 | 2.86 | 2.78 | 2.69 | 2.61 | 2.52 | 2.42 |
| 21 | 3.31 | 3.17 | 3.03 | 2.88 | 2.80 | 2.72 | 2.64 | 2.55 | 2.46 | 2.36 |
| 22 | 3.26 | 3.12 | 2.98 | 2.83 | 2.75 | 2.67 | 2.58 | 2.50 | 2.40 | 2.31 |
| 23 | 3.21 | 3.07 | 2.93 | 2.78 | 2.70 | 2.62 | 2.54 | 2.45 | 2.35 | 2.26 |
| 24 | 3.17 | 3.03 | 2.89 | 2.74 | 2.66 | 2.58 | 2.49 | 2.40 | 2.31 | 2.21 |
| 25 | 3.13 | 2.99 | 2.85 | 2.70 | 2.62 | 2.54 | 2.45 | 2.36 | 2.27 | 2.17 |
| 26 | 3.09 | 2.96 | 2.81 | 2.66 | 2.58 | 2.50 | 2.42 | 2.33 | 2.23 | 2.13 |
| 27 | 3.06 | 2.93 | 2.78 | 2.63 | 2.55 | 2.47 | 2.38 | 2.29 | 2.20 | 2.10 |
| 28 | 3.03 | 2.90 | 2.75 | 2.60 | 2.52 | 2.44 | 2.35 | 2.26 | 2.17 | 2.06 |
| 29 | 3.00 | 2.87 | 2.73 | 2.57 | 2.49 | 2.41 | 2.33 | 2.23 | 2.14 | 2.03 |
| 30 | 2.98 | 2.84 | 2.70 | 2.55 | 2.47 | 2.39 | 2.30 | 2.21 | 2.11 | 2.01 |
| 40 | 2.80 | 2.66 | 2.52 | 2.37 | 2.29 | 2.20 | 2.11 | 2.02 | 1.92 | 1.80 |
| 60 | 2.63 | 2.50 | 2.35 | 2.20 | 2.12 | 2.03 | 1.94 | 1.84 | 1.73 | 1.60 |
| 120 | 2.47 | 2.34 | 2.19 | 2.03 | 1.95 | 1.86 | 1.76 | 1.66 | 1.53 | 1.38 |
| inf | 2.32 | 2.18 | 2.04 | 1.88 | 1.79 | 1.70 | 1.59 | 1.47 | 1.32 | 1.00 |

Chi Square Distribution



The shaded area is equal to α for $\chi^2 = \chi^2_{\alpha}$.

| <i>df</i> | $\chi^2_{.995}$ | $\chi^2_{.990}$ | $\chi^2_{.975}$ | $\chi^2_{.950}$ | $\chi^2_{.900}$ | $\chi^2_{.100}$ | $\chi^2_{.050}$ | $\chi^2_{.025}$ | $\chi^2_{.010}$ | $\chi^2_{.005}$ |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1 | 0.000 | 0.000 | 0.001 | 0.004 | 0.016 | 2.706 | 3.841 | 5.024 | 6.635 | 7.879 |
| 2 | 0.010 | 0.020 | 0.051 | 0.103 | 0.211 | 4.605 | 5.991 | 7.378 | 9.210 | 10.597 |
| 3 | 0.072 | 0.115 | 0.216 | 0.352 | 0.584 | 6.251 | 7.815 | 9.348 | 11.345 | 12.838 |
| 4 | 0.207 | 0.297 | 0.484 | 0.711 | 1.064 | 7.779 | 9.488 | 11.143 | 13.277 | 14.860 |
| 5 | 0.412 | 0.554 | 0.831 | 1.145 | 1.610 | 9.236 | 11.070 | 12.833 | 15.086 | 16.750 |
| 6 | 0.676 | 0.872 | 1.237 | 1.635 | 2.204 | 10.645 | 12.592 | 14.449 | 16.812 | 18.548 |
| 7 | 0.989 | 1.239 | 1.690 | 2.167 | 2.833 | 12.017 | 14.067 | 16.013 | 18.475 | 20.278 |
| 8 | 1.344 | 1.646 | 2.180 | 2.733 | 3.490 | 13.362 | 15.507 | 17.535 | 20.090 | 21.955 |
| 9 | 1.735 | 2.088 | 2.700 | 3.325 | 4.168 | 14.684 | 16.919 | 19.023 | 21.666 | 23.589 |
| 10 | 2.156 | 2.558 | 3.247 | 3.940 | 4.865 | 15.987 | 18.307 | 20.483 | 23.209 | 25.188 |
| 11 | 2.603 | 3.053 | 3.816 | 4.575 | 5.578 | 17.275 | 19.675 | 21.920 | 24.725 | 26.757 |
| 12 | 3.074 | 3.571 | 4.404 | 5.226 | 6.304 | 18.549 | 21.026 | 23.337 | 26.217 | 28.300 |
| 13 | 3.565 | 4.107 | 5.009 | 5.892 | 7.042 | 19.812 | 22.362 | 24.736 | 27.688 | 29.819 |
| 14 | 4.075 | 4.660 | 5.629 | 6.571 | 7.790 | 21.064 | 23.685 | 26.119 | 29.141 | 31.319 |
| 15 | 4.601 | 5.229 | 6.262 | 7.261 | 8.547 | 22.307 | 24.996 | 27.488 | 30.578 | 32.801 |
| 16 | 5.142 | 5.812 | 6.908 | 7.962 | 9.312 | 23.542 | 26.296 | 28.845 | 32.000 | 34.267 |
| 17 | 5.697 | 6.408 | 7.564 | 8.672 | 10.085 | 24.769 | 27.587 | 30.191 | 33.409 | 35.718 |
| 18 | 6.265 | 7.015 | 8.231 | 9.390 | 10.865 | 25.989 | 28.869 | 31.526 | 34.805 | 37.156 |
| 19 | 6.844 | 7.633 | 8.907 | 10.117 | 11.651 | 27.204 | 30.144 | 32.852 | 36.191 | 38.582 |
| 20 | 7.434 | 8.260 | 9.591 | 10.851 | 12.443 | 28.412 | 31.410 | 34.170 | 37.566 | 39.997 |
| 21 | 8.034 | 8.897 | 10.283 | 11.591 | 13.240 | 29.615 | 32.671 | 35.479 | 38.932 | 41.401 |
| 22 | 8.643 | 9.542 | 10.982 | 12.338 | 14.041 | 30.813 | 33.924 | 36.781 | 40.289 | 42.796 |
| 23 | 9.260 | 10.196 | 11.689 | 13.091 | 14.848 | 32.007 | 35.172 | 38.076 | 41.638 | 44.181 |
| 24 | 9.886 | 10.856 | 12.401 | 13.848 | 15.659 | 33.196 | 36.415 | 39.364 | 42.980 | 45.559 |
| 25 | 10.520 | 11.524 | 13.120 | 14.611 | 16.473 | 34.382 | 37.652 | 40.646 | 44.314 | 46.928 |
| 26 | 11.160 | 12.198 | 13.844 | 15.379 | 17.292 | 35.563 | 38.885 | 41.923 | 45.642 | 48.290 |
| 27 | 11.808 | 12.879 | 14.573 | 16.151 | 18.114 | 36.741 | 40.113 | 43.195 | 46.963 | 49.645 |
| 28 | 12.461 | 13.565 | 15.308 | 16.928 | 18.939 | 37.916 | 41.337 | 44.461 | 48.278 | 50.993 |
| 29 | 13.121 | 14.256 | 16.047 | 17.708 | 19.768 | 39.087 | 42.557 | 45.722 | 49.588 | 52.336 |
| 30 | 13.787 | 14.953 | 16.791 | 18.493 | 20.599 | 40.256 | 43.773 | 46.979 | 50.892 | 53.672 |
| 40 | 20.707 | 22.164 | 24.433 | 26.509 | 29.051 | 51.805 | 55.758 | 59.342 | 63.691 | 66.766 |
| 50 | 27.991 | 29.707 | 32.357 | 34.764 | 37.689 | 63.167 | 67.505 | 71.420 | 76.154 | 79.490 |
| 60 | 35.534 | 37.485 | 40.482 | 43.188 | 46.459 | 74.397 | 79.082 | 83.298 | 88.379 | 91.952 |
| 70 | 43.275 | 45.442 | 48.758 | 51.739 | 55.329 | 85.527 | 90.531 | 95.023 | 100.425 | 104.215 |
| 80 | 51.172 | 53.540 | 57.153 | 60.391 | 64.278 | 96.578 | 101.879 | 106.629 | 112.329 | 116.321 |
| 90 | 59.196 | 61.754 | 65.647 | 69.126 | 73.291 | 107.565 | 113.145 | 118.136 | 124.116 | 128.299 |
| 100 | 67.328 | 70.065 | 74.222 | 77.929 | 82.358 | 118.498 | 124.342 | 129.561 | 135.807 | 140.169 |

Values for Binomial Distribution

$$P(X = x) = {}^n C_x p^x q^{n-x}$$

| <i>n</i> | <i>x</i> | <i>p</i> | | | | | | | | | | |
|----------|----------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 0.05 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 0.95 |
| 2 | 0 | 0.902 | 0.81 | 0.64 | 0.49 | 0.36 | 0.25 | 0.16 | 0.09 | 0.04 | 0.01 | 0.002 |
| | 1 | 0.095 | 0.18 | 0.32 | 0.42 | 0.48 | 0.5 | 0.48 | 0.42 | 0.32 | 0.18 | 0.095 |
| | 2 | 0.002 | 0.01 | 0.04 | 0.09 | 0.16 | 0.25 | 0.36 | 0.49 | 0.64 | 0.81 | 0.902 |
| 3 | 0 | 0.857 | 0.729 | 0.512 | 0.343 | 0.216 | 0.125 | 0.064 | 0.027 | 0.008 | 0.001 | 0 |
| | 1 | 0.135 | 0.243 | 0.384 | 0.441 | 0.432 | 0.375 | 0.288 | 0.189 | 0.096 | 0.027 | 0.007 |
| | 2 | 0.007 | 0.027 | 0.096 | 0.189 | 0.288 | 0.375 | 0.432 | 0.441 | 0.384 | 0.243 | 0.135 |
| | 3 | 0 | 0.001 | 0.008 | 0.027 | 0.064 | 0.125 | 0.216 | 0.343 | 0.512 | 0.729 | 0.857 |
| 4 | 0 | 0.815 | 0.656 | 0.41 | 0.24 | 0.13 | 0.062 | 0.026 | 0.008 | 0.002 | 0 | 0 |
| | 1 | 0.171 | 0.292 | 0.41 | 0.412 | 0.346 | 0.25 | 0.154 | 0.076 | 0.026 | 0.004 | 0 |
| | 2 | 0.014 | 0.049 | 0.154 | 0.265 | 0.346 | 0.375 | 0.346 | 0.265 | 0.154 | 0.049 | 0.014 |
| | 3 | 0 | 0.004 | 0.026 | 0.076 | 0.154 | 0.25 | 0.346 | 0.412 | 0.41 | 0.292 | 0.171 |
| | 4 | 0 | 0 | 0.002 | 0.008 | 0.026 | 0.062 | 0.13 | 0.24 | 0.41 | 0.656 | 0.815 |
| 5 | 0 | 0.774 | 0.59 | 0.328 | 0.168 | 0.078 | 0.031 | 0.01 | 0.002 | 0 | 0 | 0 |
| | 1 | 0.204 | 0.328 | 0.41 | 0.36 | 0.259 | 0.156 | 0.077 | 0.028 | 0.006 | 0 | 0 |
| | 2 | 0.021 | 0.073 | 0.205 | 0.309 | 0.346 | 0.312 | 0.23 | 0.132 | 0.051 | 0.008 | 0.001 |
| | 3 | 0.001 | 0.008 | 0.051 | 0.132 | 0.23 | 0.312 | 0.346 | 0.309 | 0.205 | 0.073 | 0.021 |
| | 4 | 0 | 0 | 0.006 | 0.028 | 0.077 | 0.156 | 0.259 | 0.36 | 0.41 | 0.328 | 0.204 |
| | 5 | 0 | 0 | 0 | 0.002 | 0.01 | 0.031 | 0.078 | 0.168 | 0.328 | 0.59 | 0.774 |
| 6 | 0 | 0.735 | 0.531 | 0.262 | 0.118 | 0.047 | 0.016 | 0.004 | 0.001 | 0 | 0 | 0 |
| | 1 | 0.232 | 0.354 | 0.393 | 0.303 | 0.187 | 0.094 | 0.037 | 0.01 | 0.002 | 0 | 0 |
| | 2 | 0.031 | 0.098 | 0.246 | 0.324 | 0.311 | 0.234 | 0.138 | 0.06 | 0.015 | 0.001 | 0 |
| | 3 | 0.002 | 0.015 | 0.082 | 0.185 | 0.276 | 0.312 | 0.276 | 0.185 | 0.082 | 0.015 | 0.002 |
| | 4 | 0 | 0.001 | 0.015 | 0.06 | 0.138 | 0.234 | 0.311 | 0.324 | 0.246 | 0.098 | 0.031 |
| | 5 | 0 | 0 | 0.002 | 0.01 | 0.037 | 0.094 | 0.187 | 0.303 | 0.393 | 0.354 | 0.232 |
| | 6 | 0 | 0 | 0 | 0.001 | 0.004 | 0.016 | 0.047 | 0.118 | 0.262 | 0.531 | 0.735 |
| 7 | 0 | 0.698 | 0.478 | 0.21 | 0.082 | 0.028 | 0.008 | 0.002 | 0 | 0 | 0 | 0 |
| | 1 | 0.257 | 0.372 | 0.367 | 0.247 | 0.131 | 0.055 | 0.017 | 0.004 | 0 | 0 | 0 |
| | 2 | 0.041 | 0.124 | 0.275 | 0.318 | 0.261 | 0.164 | 0.077 | 0.025 | 0.004 | 0 | 0 |
| | 3 | 0.004 | 0.023 | 0.115 | 0.227 | 0.29 | 0.273 | 0.194 | 0.097 | 0.029 | 0.003 | 0 |
| | 4 | 0 | 0.003 | 0.029 | 0.097 | 0.194 | 0.273 | 0.29 | 0.227 | 0.115 | 0.023 | 0.004 |
| | 5 | 0 | 0 | 0.004 | 0.025 | 0.077 | 0.164 | 0.261 | 0.318 | 0.275 | 0.124 | 0.041 |
| | 6 | 0 | 0 | 0 | 0.004 | 0.017 | 0.055 | 0.131 | 0.247 | 0.367 | 0.372 | 0.257 |
| | 7 | 0 | 0 | 0 | 0 | 0.002 | 0.008 | 0.028 | 0.082 | 0.21 | 0.478 | 0.698 |

| n | c | p | | | | | | | | | | |
|----|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 0.05 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 0.95 |
| 8 | 0 | 0.663 | 0.43 | 0.168 | 0.058 | 0.017 | 0.004 | 0.001 | 0 | 0 | 0 | 0 |
| | 1 | 0.279 | 0.383 | 0.336 | 0.198 | 0.09 | 0.031 | 0.008 | 0.001 | 0 | 0 | 0 |
| | 2 | 0.051 | 0.149 | 0.294 | 0.296 | 0.209 | 0.109 | 0.041 | 0.01 | 0.001 | 0 | 0 |
| | 3 | 0.005 | 0.033 | 0.147 | 0.254 | 0.279 | 0.219 | 0.124 | 0.047 | 0.009 | 0 | 0 |
| | 4 | 0 | 0.005 | 0.046 | 0.136 | 0.232 | 0.273 | 0.232 | 0.136 | 0.046 | 0.005 | 0 |
| | 5 | 0 | 0 | 0.009 | 0.047 | 0.124 | 0.219 | 0.279 | 0.254 | 0.147 | 0.033 | 0.005 |
| | 6 | 0 | 0 | 0.001 | 0.01 | 0.041 | 0.109 | 0.209 | 0.296 | 0.294 | 0.149 | 0.051 |
| | 7 | 0 | 0 | 0 | 0.001 | 0.008 | 0.031 | 0.09 | 0.198 | 0.336 | 0.383 | 0.279 |
| | 8 | 0 | 0 | 0 | 0 | 0.001 | 0.004 | 0.017 | 0.058 | 0.168 | 0.43 | 0.663 |
| 9 | 0 | 0.63 | 0.387 | 0.134 | 0.04 | 0.01 | 0.002 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 0.299 | 0.387 | 0.302 | 0.156 | 0.06 | 0.018 | 0.004 | 0 | 0 | 0 | 0 |
| | 2 | 0.063 | 0.172 | 0.302 | 0.267 | 0.161 | 0.07 | 0.021 | 0.004 | 0 | 0 | 0 |
| | 3 | 0.008 | 0.045 | 0.176 | 0.267 | 0.251 | 0.164 | 0.074 | 0.021 | 0.003 | 0 | 0 |
| | 4 | 0.001 | 0.007 | 0.066 | 0.172 | 0.251 | 0.246 | 0.167 | 0.074 | 0.017 | 0.001 | 0 |
| | 5 | 0 | 0.001 | 0.017 | 0.074 | 0.167 | 0.246 | 0.251 | 0.172 | 0.066 | 0.007 | 0.001 |
| | 6 | 0 | 0 | 0.003 | 0.021 | 0.074 | 0.164 | 0.251 | 0.267 | 0.176 | 0.045 | 0.008 |
| | 7 | 0 | 0 | 0 | 0.004 | 0.021 | 0.07 | 0.161 | 0.267 | 0.302 | 0.172 | 0.063 |
| | 8 | 0 | 0 | 0 | 0 | 0.004 | 0.018 | 0.06 | 0.156 | 0.302 | 0.387 | 0.299 |
| | 9 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.01 | 0.04 | 0.134 | 0.387 | 0.63 |
| 10 | 0 | 0.599 | 0.349 | 0.107 | 0.028 | 0.006 | 0.001 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 0.315 | 0.387 | 0.268 | 0.121 | 0.04 | 0.01 | 0.002 | 0 | 0 | 0 | 0 |
| | 2 | 0.075 | 0.194 | 0.302 | 0.233 | 0.121 | 0.044 | 0.011 | 0.001 | 0 | 0 | 0 |
| | 3 | 0.01 | 0.057 | 0.201 | 0.267 | 0.215 | 0.117 | 0.042 | 0.009 | 0.001 | 0 | 0 |
| | 4 | 0.001 | 0.011 | 0.088 | 0.2 | 0.251 | 0.205 | 0.111 | 0.037 | 0.006 | 0 | 0 |
| | 5 | 0 | 0.001 | 0.026 | 0.103 | 0.201 | 0.246 | 0.201 | 0.103 | 0.026 | 0.001 | 0 |
| | 6 | 0 | 0 | 0.006 | 0.037 | 0.111 | 0.205 | 0.251 | 0.2 | 0.088 | 0.011 | 0.001 |
| | 7 | 0 | 0 | 0.001 | 0.009 | 0.042 | 0.117 | 0.215 | 0.267 | 0.201 | 0.057 | 0.01 |
| | 8 | 0 | 0 | 0 | 0.001 | 0.011 | 0.044 | 0.121 | 0.233 | 0.302 | 0.194 | 0.07 |
| | 9 | 0 | 0 | 0 | 0 | 0.002 | 0.01 | 0.04 | 0.121 | 0.268 | 0.387 | 0.315 |
| | 10 | 0 | 0 | 0 | 0 | 0 | 0.001 | 0.006 | 0.028 | 0.107 | 0.349 | 0.599 |
| 11 | 0 | 0.569 | 0.314 | 0.086 | 0.02 | 0.004 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 0.329 | 0.384 | 0.236 | 0.093 | 0.027 | 0.005 | 0.001 | 0 | 0 | 0 | 0 |
| | 2 | 0.087 | 0.213 | 0.295 | 0.2 | 0.089 | 0.027 | 0.005 | 0.001 | 0 | 0 | 0 |
| | 3 | 0.014 | 0.071 | 0.221 | 0.257 | 0.177 | 0.081 | 0.023 | 0.004 | 0 | 0 | 0 |
| | 4 | 0.001 | 0.016 | 0.111 | 0.22 | 0.236 | 0.161 | 0.07 | 0.017 | 0.002 | 0 | 0 |
| | 5 | 0 | 0.002 | 0.039 | 0.132 | 0.221 | 0.226 | 0.147 | 0.057 | 0.01 | 0 | 0 |
| | 6 | 0 | 0 | 0.01 | 0.057 | 0.147 | 0.226 | 0.221 | 0.132 | 0.039 | 0.002 | 0 |
| | 7 | 0 | 0 | 0.002 | 0.017 | 0.07 | 0.161 | 0.236 | 0.22 | 0.111 | 0.016 | 0.001 |
| | 8 | 0 | 0 | 0 | 0.004 | 0.023 | 0.081 | 0.177 | 0.257 | 0.221 | 0.071 | 0.014 |

| n | c | P | | | | | | | | | | |
|----|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 0.05 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 0.95 |
| 11 | 9 | 0 | 0 | 0 | 0.001 | 0.005 | 0.027 | 0.089 | 0.2 | 0.295 | 0.213 | 0.087 |
| | 10 | 0 | 0 | 0 | 0 | 0.001 | 0.005 | 0.027 | 0.093 | 0.236 | 0.384 | 0.329 |
| | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0.004 | 0.02 | 0.086 | 0.314 | 0.569 |
| 12 | 0 | 0.54 | 0.282 | 0.069 | 0.014 | 0.002 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 0.341 | 0.377 | 0.206 | 0.071 | 0.017 | 0.003 | 0 | 0 | 0 | 0 | 0 |
| | 2 | 0.099 | 0.23 | 0.283 | 0.168 | 0.064 | 0.016 | 0.002 | 0 | 0 | 0 | 0 |
| | 3 | 0.017 | 0.085 | 0.236 | 0.24 | 0.142 | 0.054 | 0.012 | 0.001 | 0 | 0 | 0 |
| | 4 | 0.002 | 0.021 | 0.133 | 0.231 | 0.213 | 0.121 | 0.042 | 0.008 | 0.001 | 0 | 0 |
| | 5 | 0 | 0.004 | 0.053 | 0.158 | 0.227 | 0.193 | 0.101 | 0.029 | 0.003 | 0 | 0 |
| | 6 | 0 | 0 | 0.016 | 0.079 | 0.177 | 0.226 | 0.177 | 0.079 | 0.016 | 0 | 0 |
| | 7 | 0 | 0 | 0.003 | 0.029 | 0.101 | 0.193 | 0.227 | 0.158 | 0.053 | 0.004 | 0 |
| | 8 | 0 | 0 | 0.001 | 0.008 | 0.042 | 0.121 | 0.213 | 0.231 | 0.133 | 0.021 | 0.002 |
| | 9 | 0 | 0 | 0 | 0.001 | 0.012 | 0.054 | 0.142 | 0.24 | 0.236 | 0.085 | 0.017 |
| | 10 | 0 | 0 | 0 | 0 | 0.002 | 0.016 | 0.064 | 0.168 | 0.283 | 0.23 | 0.099 |
| | 11 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.017 | 0.071 | 0.206 | 0.377 | 0.341 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.014 | 0.069 | 0.282 | 0.54 | |
| 15 | 0 | 0.463 | 0.206 | 0.035 | 0.005 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 0.366 | 0.343 | 0.132 | 0.031 | 0.005 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 2 | 0.135 | 0.267 | 0.231 | 0.092 | 0.022 | 0.003 | 0 | 0 | 0 | 0 | 0 |
| | 3 | 0.031 | 0.129 | 0.25 | 0.17 | 0.063 | 0.014 | 0.002 | 0 | 0 | 0 | 0 |
| | 4 | 0.005 | 0.043 | 0.188 | 0.219 | 0.127 | 0.042 | 0.007 | 0.001 | 0 | 0 | 0 |
| | 5 | 0.001 | 0.01 | 0.103 | 0.206 | 0.186 | 0.092 | 0.024 | 0.003 | 0 | 0 | 0 |
| | 6 | 0 | 0.002 | 0.043 | 0.147 | 0.207 | 0.153 | 0.061 | 0.012 | 0.001 | 0 | 0 |
| | 7 | 0 | 0 | 0.014 | 0.081 | 0.177 | 0.196 | 0.118 | 0.035 | 0.003 | 0 | 0 |
| | 8 | 0 | 0 | 0.003 | 0.035 | 0.118 | 0.196 | 0.177 | 0.081 | 0.014 | 0 | 0 |
| | 9 | 0 | 0 | 0.001 | 0.012 | 0.061 | 0.153 | 0.207 | 0.147 | 0.043 | 0.002 | 0 |
| | 10 | 0 | 0 | 0 | 0.003 | 0.024 | 0.092 | 0.186 | 0.206 | 0.103 | 0.01 | 0.001 |
| | 11 | 0 | 0 | 0 | 0.001 | 0.007 | 0.042 | 0.127 | 0.219 | 0.188 | 0.043 | 0.005 |
| | 12 | 0 | 0 | 0 | 0 | 0.002 | 0.014 | 0.063 | 0.17 | 0.25 | 0.129 | 0.031 |
| | 13 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.022 | 0.092 | 0.231 | 0.267 | 0.135 |
| | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0.005 | 0.031 | 0.132 | 0.343 | 0.366 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.005 | 0.035 | 0.206 | 0.463 | |
| 16 | 0 | 0.44 | 0.185 | 0.028 | 0.003 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 0.371 | 0.329 | 0.113 | 0.023 | 0.003 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 2 | 0.146 | 0.275 | 0.211 | 0.073 | 0.015 | 0.002 | 0 | 0 | 0 | 0 | 0 |
| | 3 | 0.036 | 0.142 | 0.246 | 0.146 | 0.047 | 0.009 | 0.001 | 0 | 0 | 0 | 0 |
| | 4 | 0.006 | 0.051 | 0.2 | 0.204 | 0.101 | 0.028 | 0.004 | 0 | 0 | 0 | 0 |
| | 5 | 0.001 | 0.014 | 0.12 | 0.21 | 0.162 | 0.067 | 0.014 | 0.001 | 0 | 0 | 0 |
| | 6 | 0 | 0.003 | 0.055 | 0.165 | 0.198 | 0.122 | 0.039 | 0.006 | 0 | 0 | 0 |
| | 7 | 0 | 0 | 0.02 | 0.101 | 0.189 | 0.175 | 0.084 | 0.019 | 0.001 | 0 | 0 |
| | 8 | 0 | 0 | 0.006 | 0.049 | 0.142 | 0.196 | 0.142 | 0.049 | 0.006 | 0 | 0 |
| | 9 | 0 | 0 | 0.001 | 0.019 | 0.084 | 0.175 | 0.189 | 0.101 | 0.02 | 0 | 0 |
| | 10 | 0 | 0 | 0 | 0.006 | 0.039 | 0.122 | 0.198 | 0.165 | 0.055 | 0.003 | 0 |
| | 11 | 0 | 0 | 0 | 0.001 | 0.014 | 0.067 | 0.162 | 0.21 | 0.12 | 0.014 | 0.001 |

| <i>n</i> | <i>c</i> | <i>p</i> | | | | | | | | | | |
|----------|----------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 0.05 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 0.95 |
| 16 | 12 | 0 | 0 | 0 | 0 | 0.004 | 0.028 | 0.101 | 0.204 | 0.2 | 0.051 | 0.006 |
| | 13 | 0 | 0 | 0 | 0 | 0.001 | 0.009 | 0.047 | 0.146 | 0.246 | 0.142 | 0.036 |
| | 14 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.015 | 0.073 | 0.211 | 0.275 | 0.146 |
| | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.023 | 0.113 | 0.329 | 0.371 |
| | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.028 | 0.185 | 0.44 |
| 20 | 0 | 0.358 | 0.122 | 0.012 | 0.001 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 0.377 | 0.27 | 0.058 | 0.007 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 2 | 0.189 | 0.285 | 0.137 | 0.028 | 0.003 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 3 | 0.06 | 0.19 | 0.205 | 0.072 | 0.012 | 0.001 | 0 | 0 | 0 | 0 | 0 |
| | 4 | 0.013 | 0.09 | 0.218 | 0.13 | 0.035 | 0.005 | 0 | 0 | 0 | 0 | 0 |
| | 5 | 0.002 | 0.032 | 0.175 | 0.179 | 0.075 | 0.015 | 0.001 | 0 | 0 | 0 | 0 |
| | 6 | 0 | 0.009 | 0.109 | 0.192 | 0.124 | 0.037 | 0.005 | 0 | 0 | 0 | 0 |
| | 7 | 0 | 0.002 | 0.055 | 0.164 | 0.166 | 0.074 | 0.015 | 0.001 | 0 | 0 | 0 |
| | 8 | 0 | 0 | 0.022 | 0.114 | 0.18 | 0.12 | 0.035 | 0.004 | 0 | 0 | 0 |
| | 9 | 0 | 0 | 0.007 | 0.065 | 0.16 | 0.16 | 0.071 | 0.012 | 0 | 0 | 0 |
| | 10 | 0 | 0 | 0.002 | 0.031 | 0.117 | 0.176 | 0.117 | 0.031 | 0.002 | 0 | 0 |
| | 11 | 0 | 0 | 0 | 0.012 | 0.071 | 0.16 | 0.16 | 0.065 | 0.007 | 0 | 0 |
| | 12 | 0 | 0 | 0 | 0.004 | 0.035 | 0.12 | 0.18 | 0.114 | 0.022 | 0 | 0 |
| | 13 | 0 | 0 | 0 | 0.001 | 0.015 | 0.074 | 0.166 | 0.164 | 0.055 | 0.002 | 0 |
| | 14 | 0 | 0 | 0 | 0 | 0.005 | 0.037 | 0.124 | 0.192 | 0.109 | 0.009 | 0 |
| | 15 | 0 | 0 | 0 | 0 | 0.001 | 0.015 | 0.075 | 0.179 | 0.175 | 0.032 | 0.002 |
| | 16 | 0 | 0 | 0 | 0 | 0 | 0.005 | 0.035 | 0.13 | 0.218 | 0.09 | 0.013 |
| | 17 | 0 | 0 | 0 | 0 | 0 | 0.001 | 0.012 | 0.072 | 0.205 | 0.19 | 0.06 |
| | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.028 | 0.137 | 0.285 | 0.189 |
| | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.007 | 0.058 | 0.27 | 0.377 |
| 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.001 | 0.012 | 0.122 | 0.358 | |

Values for Poisson Distribution

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

| X | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1 |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | 0.9048 | 0.8187 | 0.7408 | 0.6703 | 0.6065 | 0.5488 | 0.4966 | 0.4493 | 0.4066 | 0.3679 |
| 1 | 0.0905 | 0.1637 | 0.2222 | 0.2681 | 0.3033 | 0.3293 | 0.3476 | 0.3595 | 0.3659 | 0.3679 |
| 2 | 0.0045 | 0.0164 | 0.0333 | 0.0536 | 0.0758 | 0.0988 | 0.1217 | 0.1438 | 0.1647 | 0.1839 |
| 3 | 0.0002 | 0.0011 | 0.0033 | 0.0072 | 0.0126 | 0.0198 | 0.0284 | 0.0383 | 0.0494 | 0.0613 |
| 4 | 0 | 0.0001 | 0.0003 | 0.0007 | 0.0016 | 0.003 | 0.005 | 0.0077 | 0.0111 | 0.0153 |
| 5 | 0 | 0 | 0 | 0.0001 | 0.0002 | 0.0004 | 0.0007 | 0.0012 | 0.002 | 0.0031 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0001 | 0.0002 | 0.0003 | 0.0005 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0001 |
| X | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2 |
| 0 | 0.3329 | 0.3012 | 0.2725 | 0.2466 | 0.2231 | 0.2019 | 0.1827 | 0.1653 | 0.1496 | 0.1353 |
| 1 | 0.3662 | 0.3614 | 0.3543 | 0.3452 | 0.3347 | 0.323 | 0.3106 | 0.2975 | 0.2842 | 0.2707 |
| 2 | 0.2014 | 0.2169 | 0.2303 | 0.2417 | 0.251 | 0.2584 | 0.264 | 0.2678 | 0.27 | 0.2707 |
| 3 | 0.0738 | 0.0867 | 0.0998 | 0.1128 | 0.1255 | 0.1378 | 0.1496 | 0.1607 | 0.171 | 0.1804 |
| 4 | 0.0203 | 0.026 | 0.0324 | 0.0395 | 0.0471 | 0.0551 | 0.0636 | 0.0723 | 0.0812 | 0.0902 |
| 5 | 0.0045 | 0.0062 | 0.0084 | 0.0111 | 0.0141 | 0.0176 | 0.0216 | 0.026 | 0.0309 | 0.0361 |
| 6 | 0.0008 | 0.0012 | 0.0018 | 0.0026 | 0.0035 | 0.0047 | 0.0061 | 0.0078 | 0.0098 | 0.012 |
| 7 | 0.0001 | 0.0002 | 0.0003 | 0.0005 | 0.0008 | 0.0011 | 0.0015 | 0.002 | 0.0027 | 0.0034 |
| 8 | 0 | 0 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0009 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0001 | 0.0001 | 0.0001 | 0.0002 |
| X | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 | 3 |
| 0 | 0.1225 | 0.1108 | 0.1003 | 0.0907 | 0.0821 | 0.0743 | 0.0672 | 0.0608 | 0.055 | 0.0498 |
| 1 | 0.2572 | 0.2438 | 0.2306 | 0.2177 | 0.2052 | 0.1931 | 0.1815 | 0.1703 | 0.1596 | 0.1494 |
| 2 | 0.27 | 0.2681 | 0.2652 | 0.2613 | 0.2565 | 0.251 | 0.245 | 0.2384 | 0.2314 | 0.224 |
| 3 | 0.189 | 0.1966 | 0.2033 | 0.209 | 0.2138 | 0.2176 | 0.2205 | 0.2225 | 0.2237 | 0.224 |
| 4 | 0.0992 | 0.1082 | 0.1169 | 0.1254 | 0.1336 | 0.1414 | 0.1488 | 0.1557 | 0.1622 | 0.168 |
| 5 | 0.0417 | 0.0476 | 0.0538 | 0.0602 | 0.0668 | 0.0735 | 0.0804 | 0.0872 | 0.094 | 0.1008 |
| 6 | 0.0146 | 0.0174 | 0.0206 | 0.0241 | 0.0278 | 0.0319 | 0.0362 | 0.0407 | 0.0455 | 0.0504 |
| 7 | 0.0044 | 0.0055 | 0.0068 | 0.0083 | 0.0099 | 0.0118 | 0.0139 | 0.0163 | 0.0188 | 0.0216 |
| 8 | 0.0011 | 0.0015 | 0.0019 | 0.0025 | 0.0031 | 0.0038 | 0.0047 | 0.0057 | 0.0068 | 0.0081 |
| 9 | 0.0003 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0018 | 0.0022 | 0.0027 |
| 10 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0008 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0001 |
| X | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 3.9 | 4 |
| 0 | 0.045 | 0.0408 | 0.0369 | 0.0334 | 0.0302 | 0.0273 | 0.0247 | 0.0224 | 0.0202 | 0.0183 |
| 1 | 0.1397 | 0.134 | 0.1217 | 0.1135 | 0.1057 | 0.0984 | 0.0915 | 0.085 | 0.0789 | 0.0733 |
| 2 | 0.2165 | 0.2087 | 0.2008 | 0.1929 | 0.185 | 0.1771 | 0.1692 | 0.1615 | 0.1539 | 0.1465 |
| 3 | 0.2237 | 0.2226 | 0.2209 | 0.2186 | 0.2158 | 0.2125 | 0.2087 | 0.2046 | 0.2001 | 0.1954 |
| 4 | 0.1734 | 0.1781 | 0.1823 | 0.1858 | 0.1888 | 0.1912 | 0.1931 | 0.1944 | 0.1951 | 0.1954 |

| X | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 3.9 | 4 |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 5 | 0.1075 | 0.114 | 0.1203 | 0.1264 | 0.1322 | 0.1377 | 0.1429 | 0.1477 | 0.1522 | 0.1563 |
| 6 | 0.0555 | 0.0608 | 0.0662 | 0.0716 | 0.0771 | 0.0826 | 0.0881 | 0.0936 | 0.0989 | 0.1042 |
| 7 | 0.0246 | 0.0278 | 0.0312 | 0.0348 | 0.0385 | 0.0425 | 0.0466 | 0.0508 | 0.0551 | 0.0595 |
| 8 | 0.0095 | 0.0111 | 0.0129 | 0.0148 | 0.0169 | 0.0191 | 0.0215 | 0.0241 | 0.0269 | 0.0298 |
| 9 | 0.0033 | 0.004 | 0.0047 | 0.0056 | 0.0066 | 0.0076 | 0.0089 | 0.0102 | 0.0116 | 0.0132 |
| 10 | 0.001 | 0.0013 | 0.0016 | 0.0019 | 0.0023 | 0.0028 | 0.0033 | 0.0039 | 0.0045 | 0.0053 |
| 11 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0019 |
| 12 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0004 | 0.0005 | 0.0006 |
| 13 | 0 | 0 | 0 | 0 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0001 |

| X | 4.1 | 4.2 | 4.3 | 4.4 | 4.5 | 4.6 | 4.7 | 4.8 | 4.9 | 5 |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | 0.0166 | 0.015 | 0.0136 | 0.0123 | 0.0111 | 0.0101 | 0.0091 | 0.0082 | 0.0074 | 0.0067 |
| 1 | 0.0679 | 0.063 | 0.0583 | 0.054 | 0.05 | 0.0462 | 0.0427 | 0.0395 | 0.0365 | 0.0337 |
| 2 | 0.1393 | 0.1323 | 0.1254 | 0.1188 | 0.1125 | 0.1063 | 0.1005 | 0.0948 | 0.0894 | 0.0842 |
| 3 | 0.1904 | 0.1852 | 0.1798 | 0.1743 | 0.1687 | 0.1631 | 0.1574 | 0.1517 | 0.146 | 0.1404 |
| 4 | 0.1951 | 0.1944 | 0.1933 | 0.1917 | 0.1898 | 0.1875 | 0.1849 | 0.182 | 0.1789 | 0.1755 |
| 5 | 0.16 | 0.1633 | 0.1662 | 0.1687 | 0.1708 | 0.1725 | 0.1738 | 0.1747 | 0.1753 | 0.1755 |
| 6 | 0.1093 | 0.1143 | 0.1191 | 0.1237 | 0.1281 | 0.1323 | 0.1362 | 0.1398 | 0.1432 | 0.1462 |
| 7 | 0.064 | 0.0686 | 0.0732 | 0.0778 | 0.0824 | 0.0869 | 0.0914 | 0.0959 | 0.1002 | 0.1044 |
| 8 | 0.0328 | 0.036 | 0.0393 | 0.0428 | 0.0463 | 0.05 | 0.0537 | 0.0575 | 0.0614 | 0.0653 |
| 9 | 0.015 | 0.0168 | 0.0188 | 0.0209 | 0.0232 | 0.0255 | 0.028 | 0.0307 | 0.0334 | 0.0363 |
| 10 | 0.0061 | 0.0071 | 0.0081 | 0.0092 | 0.0104 | 0.0118 | 0.0132 | 0.0147 | 0.0164 | 0.0181 |
| 11 | 0.0023 | 0.0027 | 0.0032 | 0.0037 | 0.0043 | 0.0049 | 0.0056 | 0.0064 | 0.0073 | 0.0082 |
| 12 | 0.0008 | 0.0009 | 0.0011 | 0.0014 | 0.0016 | 0.0019 | 0.0022 | 0.0026 | 0.003 | 0.0034 |
| 13 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0013 |
| 14 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0004 | 0.0005 |
| 15 | 0 | 0 | 0 | 0 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 |

| X | 5.1 | 5.2 | 5.3 | 5.4 | 5.5 | 5.6 | 5.7 | 5.8 | 5.9 | 6 |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | 0.0061 | 0.0055 | 0.005 | 0.0045 | 0.0041 | 0.0037 | 0.0033 | 0.003 | 0.0027 | 0.0025 |
| 1 | 0.0311 | 0.0287 | 0.0265 | 0.0244 | 0.0225 | 0.0207 | 0.0191 | 0.0176 | 0.0162 | 0.0149 |
| 2 | 0.0793 | 0.0746 | 0.0701 | 0.0659 | 0.0618 | 0.058 | 0.0544 | 0.0509 | 0.0477 | 0.0446 |
| 3 | 0.1348 | 0.1293 | 0.1239 | 0.1185 | 0.1133 | 0.1082 | 0.1033 | 0.0985 | 0.0938 | 0.0892 |
| 4 | 0.1719 | 0.1681 | 0.1641 | 0.16 | 0.1558 | 0.1515 | 0.1472 | 0.1428 | 0.1383 | 0.1339 |
| 5 | 0.1753 | 0.1748 | 0.174 | 0.1728 | 0.1714 | 0.1697 | 0.1678 | 0.1656 | 0.1632 | 0.1606 |
| 6 | 0.149 | 0.1515 | 0.1537 | 0.1555 | 0.1571 | 0.1584 | 0.1594 | 0.1601 | 0.1605 | 0.1606 |
| 7 | 0.1086 | 0.1125 | 0.1163 | 0.12 | 0.1234 | 0.1267 | 0.1298 | 0.1326 | 0.1353 | 0.1377 |
| 8 | 0.0692 | 0.0731 | 0.0771 | 0.081 | 0.0849 | 0.0887 | 0.0925 | 0.0962 | 0.0998 | 0.1033 |
| 9 | 0.0392 | 0.0423 | 0.0454 | 0.0486 | 0.0519 | 0.0552 | 0.0586 | 0.062 | 0.0654 | 0.0688 |
| 10 | 0.02 | 0.022 | 0.0241 | 0.0262 | 0.0285 | 0.0309 | 0.0334 | 0.0359 | 0.0386 | 0.0413 |
| 11 | 0.0093 | 0.0104 | 0.0116 | 0.0129 | 0.0143 | 0.0157 | 0.0173 | 0.019 | 0.0207 | 0.0225 |
| 12 | 0.0039 | 0.0045 | 0.0051 | 0.0058 | 0.0065 | 0.0073 | 0.0082 | 0.0092 | 0.0102 | 0.0113 |
| 13 | 0.0015 | 0.0018 | 0.0021 | 0.0024 | 0.0028 | 0.0032 | 0.0036 | 0.0041 | 0.0046 | 0.0052 |
| 14 | 0.0006 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0015 | 0.0017 | 0.0019 | 0.0022 |
| 15 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0007 | 0.0008 | 0.0009 |
| 16 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0002 | 0.0003 | 0.0003 |
| 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |

| X | 6.1 | 6.2 | 6.3 | 6.4 | 6.5 | 6.6 | 6.7 | 6.8 | 6.9 | 7 |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | 0.0022 | 0.002 | 0.0018 | 0.0017 | 0.0015 | 0.0014 | 0.0012 | 0.0011 | 0.001 | 0.0009 |
| 1 | 0.0137 | 0.0126 | 0.0116 | 0.0106 | 0.0098 | 0.009 | 0.0082 | 0.0076 | 0.007 | 0.0064 |
| 2 | 0.0417 | 0.039 | 0.0364 | 0.034 | 0.0318 | 0.0296 | 0.0276 | 0.0258 | 0.024 | 0.0223 |
| 3 | 0.0848 | 0.0806 | 0.0765 | 0.0726 | 0.0688 | 0.0652 | 0.0617 | 0.0584 | 0.0552 | 0.0521 |
| 4 | 0.1294 | 0.1249 | 0.1205 | 0.1162 | 0.1118 | 0.1076 | 0.1034 | 0.0992 | 0.0952 | 0.0912 |
| 5 | 0.1579 | 0.1549 | 0.1519 | 0.1487 | 0.1454 | 0.142 | 0.1385 | 0.1349 | 0.1314 | 0.1277 |
| 6 | 0.1605 | 0.1601 | 0.1595 | 0.1586 | 0.1575 | 0.1562 | 0.1546 | 0.1529 | 0.1511 | 0.149 |
| 7 | 0.1399 | 0.1418 | 0.1435 | 0.145 | 0.1462 | 0.1472 | 0.148 | 0.1486 | 0.1489 | 0.149 |
| 8 | 0.1066 | 0.1099 | 0.113 | 0.116 | 0.1188 | 0.1215 | 0.124 | 0.1263 | 0.1284 | 0.1304 |
| 9 | 0.0723 | 0.0757 | 0.0791 | 0.0825 | 0.0858 | 0.0891 | 0.0923 | 0.0954 | 0.0985 | 0.1014 |
| 10 | 0.0441 | 0.0469 | 0.0498 | 0.0528 | 0.0558 | 0.0588 | 0.0618 | 0.0649 | 0.0679 | 0.071 |
| 11 | 0.0245 | 0.0265 | 0.0285 | 0.0307 | 0.033 | 0.0353 | 0.0377 | 0.0401 | 0.0426 | 0.0452 |
| 12 | 0.0124 | 0.0137 | 0.015 | 0.0164 | 0.0179 | 0.0194 | 0.021 | 0.0277 | 0.0245 | 0.0264 |
| 13 | 0.0058 | 0.0065 | 0.0073 | 0.0081 | 0.0089 | 0.0098 | 0.0108 | 0.0119 | 0.013 | 0.0142 |
| 14 | 0.0025 | 0.0029 | 0.0033 | 0.0037 | 0.0041 | 0.0046 | 0.0052 | 0.0058 | 0.0064 | 0.0071 |
| 15 | 0.001 | 0.0012 | 0.0014 | 0.0016 | 0.0018 | 0.002 | 0.0023 | 0.0026 | 0.0029 | 0.0033 |
| 16 | 0.0004 | 0.0005 | 0.0005 | 0.0006 | 0.0007 | 0.0008 | 0.001 | 0.0011 | 0.0013 | 0.0014 |
| 17 | 0.0001 | 0.0002 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0004 | 0.0004 | 0.0005 | 0.0006 |
| 18 | 0 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0002 |
| 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0001 | 0.0001 | 0.0001 |

| X | 7.1 | 7.2 | 7.3 | 7.4 | 7.5 | 7.6 | 7.7 | 7.8 | 7.9 | 8 |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | 0.0008 | 0.0007 | 0.0007 | 0.0006 | 0.0006 | 0.0005 | 0.0005 | 0.0004 | 0.0004 | 0.0003 |
| 1 | 0.0059 | 0.0054 | 0.0049 | 0.0045 | 0.0041 | 0.0038 | 0.0035 | 0.0032 | 0.0029 | 0.0027 |
| 2 | 0.0208 | 0.0194 | 0.018 | 0.0167 | 0.0156 | 0.0145 | 0.0134 | 0.0125 | 0.0116 | 0.0107 |
| 3 | 0.0492 | 0.0464 | 0.0438 | 0.0413 | 0.0389 | 0.0366 | 0.0345 | 0.0324 | 0.0305 | 0.0286 |
| 4 | 0.0874 | 0.0836 | 0.0799 | 0.0764 | 0.0729 | 0.0696 | 0.0663 | 0.0632 | 0.0602 | 0.0573 |
| 5 | 0.1241 | 0.1204 | 0.1167 | 0.113 | 0.1094 | 0.1057 | 0.1021 | 0.0986 | 0.0951 | 0.0916 |
| 6 | 0.1468 | 0.1445 | 0.142 | 0.1394 | 0.1367 | 0.1339 | 0.1311 | 0.1282 | 0.1252 | 0.1221 |
| 7 | 0.1489 | 0.1486 | 0.1481 | 0.1474 | 0.1465 | 0.1454 | 0.1442 | 0.1428 | 0.1413 | 0.1396 |
| 8 | 0.1321 | 0.1337 | 0.1351 | 0.1363 | 0.1373 | 0.1382 | 0.1388 | 0.1392 | 0.1395 | 0.1396 |
| 9 | 0.1042 | 0.107 | 0.1096 | 0.1121 | 0.1144 | 0.1167 | 0.1187 | 0.1207 | 0.1224 | 0.1241 |
| 10 | 0.074 | 0.077 | 0.08 | 0.0829 | 0.0858 | 0.0887 | 0.0914 | 0.0941 | 0.0967 | 0.0993 |
| 11 | 0.0478 | 0.0504 | 0.0531 | 0.0558 | 0.0585 | 0.0613 | 0.064 | 0.0667 | 0.0695 | 0.0722 |
| 12 | 0.0283 | 0.0303 | 0.0323 | 0.0344 | 0.0366 | 0.0388 | 0.0411 | 0.0434 | 0.0457 | 0.0481 |
| 13 | 0.0154 | 0.0168 | 0.0181 | 0.0196 | 0.0211 | 0.0227 | 0.0243 | 0.026 | 0.0278 | 0.0296 |
| 14 | 0.0078 | 0.0086 | 0.0095 | 0.0104 | 0.0113 | 0.0123 | 0.0134 | 0.0145 | 0.0157 | 0.0169 |
| 15 | 0.0037 | 0.0041 | 0.0046 | 0.0051 | 0.0057 | 0.0062 | 0.0069 | 0.0075 | 0.0083 | 0.009 |
| 16 | 0.0016 | 0.0019 | 0.0021 | 0.0024 | 0.0026 | 0.003 | 0.0033 | 0.0037 | 0.0041 | 0.0045 |
| 17 | 0.0007 | 0.0008 | 0.0009 | 0.001 | 0.0012 | 0.0013 | 0.0015 | 0.0017 | 0.0019 | 0.0021 |
| 18 | 0.0003 | 0.0003 | 0.0004 | 0.0004 | 0.0005 | 0.0006 | 0.0006 | 0.0007 | 0.0008 | 0.0009 |
| 19 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0003 | 0.0004 |
| 20 | 0 | 0 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 |
| 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0001 | 0.0001 |

| | | | | | | | | | | |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.6 | 8.7 | 8.8 | 8.9 | 9 |
| 0 | 0.0003 | 0.0003 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0001 | 0.0001 |
| 1 | 0.0025 | 0.0023 | 0.0021 | 0.0019 | 0.0017 | 0.0016 | 0.0014 | 0.0013 | 0.0012 | 0.0011 |
| 2 | 0.01 | 0.0092 | 0.0086 | 0.0079 | 0.0074 | 0.0068 | 0.0063 | 0.0058 | 0.0054 | 0.005 |
| 3 | 0.0269 | 0.0252 | 0.0237 | 0.0222 | 0.0208 | 0.0195 | 0.0183 | 0.0171 | 0.016 | 0.015 |
| 4 | 0.0544 | 0.0517 | 0.0491 | 0.0466 | 0.0443 | 0.042 | 0.0398 | 0.0377 | 0.0357 | 0.0337 |
| 5 | 0.0882 | 0.0849 | 0.0816 | 0.0784 | 0.0752 | 0.0722 | 0.0692 | 0.0663 | 0.0635 | 0.0607 |
| 6 | 0.1191 | 0.116 | 0.1128 | 0.1097 | 0.1066 | 0.1034 | 0.1003 | 0.0972 | 0.0941 | 0.0911 |
| 7 | 0.1378 | 0.1358 | 0.1338 | 0.1317 | 0.1294 | 0.1271 | 0.1247 | 0.1222 | 0.1197 | 0.1171 |
| 8 | 0.1395 | 0.1392 | 0.1388 | 0.1382 | 0.1375 | 0.1366 | 0.1356 | 0.1344 | 0.1332 | 0.1318 |
| 9 | 0.1256 | 0.1269 | 0.128 | 0.129 | 0.1299 | 0.1306 | 0.1311 | 0.1315 | 0.1317 | 0.1318 |
| 10 | 0.1017 | 0.104 | 0.1063 | 0.1084 | 0.1104 | 0.1123 | 0.114 | 0.1157 | 0.1172 | 0.1186 |
| 11 | 0.0749 | 0.0776 | 0.0802 | 0.0828 | 0.0853 | 0.0878 | 0.0902 | 0.0925 | 0.0948 | 0.097 |
| 12 | 0.0505 | 0.053 | 0.0555 | 0.0579 | 0.0604 | 0.0629 | 0.0654 | 0.0679 | 0.0703 | 0.0728 |
| 13 | 0.0315 | 0.0334 | 0.0354 | 0.0374 | 0.0395 | 0.0416 | 0.0438 | 0.0459 | 0.0481 | 0.0504 |
| 14 | 0.0182 | 0.0196 | 0.021 | 0.0225 | 0.024 | 0.0256 | 0.0272 | 0.0289 | 0.0306 | 0.0324 |
| 15 | 0.0098 | 0.0107 | 0.0116 | 0.0126 | 0.0136 | 0.0147 | 0.0158 | 0.0169 | 0.0182 | 0.0194 |
| 16 | 0.005 | 0.0055 | 0.006 | 0.0066 | 0.0072 | 0.0079 | 0.0086 | 0.0093 | 0.0101 | 0.0109 |
| 17 | 0.0024 | 0.0026 | 0.0029 | 0.0033 | 0.0036 | 0.004 | 0.0044 | 0.0048 | 0.0053 | 0.0058 |
| 18 | 0.0011 | 0.0012 | 0.0014 | 0.0015 | 0.0017 | 0.0019 | 0.0021 | 0.0024 | 0.0026 | 0.0029 |
| 19 | 0.0005 | 0.0005 | 0.0006 | 0.0007 | 0.0008 | 0.0009 | 0.001 | 0.0011 | 0.0012 | 0.0014 |
| 20 | 0.0002 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0004 | 0.0004 | 0.0005 | 0.0005 | 0.0006 |
| 21 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0003 |
| 22 | 0 | 0 | 0 | 0 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| X | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 | 9.6 | 9.7 | 9.8 | 9.9 | 10 |
| 0 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0 |
| 1 | 0.001 | 0.0009 | 0.0009 | 0.0008 | 0.0007 | 0.0007 | 0.0006 | 0.0005 | 0.0005 | 0.0005 |
| 2 | 0.0046 | 0.0043 | 0.004 | 0.0037 | 0.0034 | 0.0031 | 0.0029 | 0.0027 | 0.0025 | 0.0023 |
| 3 | 0.014 | 0.0131 | 0.0123 | 0.0115 | 0.0107 | 0.01 | 0.0093 | 0.0087 | 0.0081 | 0.0076 |
| 4 | 0.0319 | 0.0302 | 0.0285 | 0.0269 | 0.0254 | 0.024 | 0.0226 | 0.0213 | 0.0201 | 0.0189 |
| 5 | 0.0581 | 0.0555 | 0.053 | 0.0506 | 0.0483 | 0.046 | 0.0439 | 0.0418 | 0.0398 | 0.0378 |
| 6 | 0.0881 | 0.0851 | 0.0822 | 0.0793 | 0.0764 | 0.0736 | 0.0709 | 0.0682 | 0.0656 | 0.0631 |
| 7 | 0.1145 | 0.1118 | 0.1091 | 0.1064 | 0.1037 | 0.101 | 0.0982 | 0.0955 | 0.0928 | 0.0901 |
| 8 | 0.1302 | 0.1286 | 0.1269 | 0.1251 | 0.1232 | 0.1212 | 0.1191 | 0.117 | 0.1148 | 0.1126 |
| 9 | 0.1317 | 0.1315 | 0.1311 | 0.1306 | 0.13 | 0.1293 | 0.1284 | 0.1274 | 0.1263 | 0.1251 |
| 10 | 0.1198 | 0.121 | 0.1219 | 0.1228 | 0.1235 | 0.1241 | 0.1245 | 0.1249 | 0.125 | 0.1251 |
| 11 | 0.0991 | 0.1012 | 0.1031 | 0.1049 | 0.1067 | 0.1083 | 0.1098 | 0.1112 | 0.1125 | 0.1137 |
| 12 | 0.0752 | 0.0776 | 0.0799 | 0.0822 | 0.0844 | 0.0866 | 0.0888 | 0.0908 | 0.0928 | 0.0948 |
| 13 | 0.0526 | 0.0549 | 0.0572 | 0.0594 | 0.0617 | 0.064 | 0.0662 | 0.0685 | 0.0707 | 0.0729 |
| 14 | 0.0342 | 0.0361 | 0.038 | 0.0399 | 0.0419 | 0.0439 | 0.0459 | 0.0479 | 0.05 | 0.0521 |
| 15 | 0.0208 | 0.0221 | 0.0235 | 0.025 | 0.0265 | 0.0281 | 0.0297 | 0.0313 | 0.033 | 0.0347 |
| 16 | 0.0118 | 0.0127 | 0.0137 | 0.0147 | 0.0157 | 0.0168 | 0.018 | 0.0192 | 0.0204 | 0.0217 |
| 17 | 0.0063 | 0.0069 | 0.0075 | 0.0081 | 0.0088 | 0.0095 | 0.0103 | 0.0111 | 0.0119 | 0.0128 |
| 18 | 0.0032 | 0.0035 | 0.0039 | 0.0042 | 0.0046 | 0.0051 | 0.0055 | 0.006 | 0.0065 | 0.0071 |
| 19 | 0.0015 | 0.0017 | 0.0019 | 0.0021 | 0.0023 | 0.0026 | 0.0028 | 0.0031 | 0.0034 | 0.0037 |
| 20 | 0.0007 | 0.0008 | 0.0009 | 0.001 | 0.0011 | 0.0012 | 0.0014 | 0.0015 | 0.0017 | 0.0019 |
| 21 | 0.0003 | 0.0003 | 0.0004 | 0.0004 | 0.0005 | 0.0006 | 0.0006 | 0.0007 | 0.0008 | 0.0009 |
| 22 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0004 | 0.0004 |
| 23 | 0 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 |
| 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0001 | 0.0001 | 0.0001 |