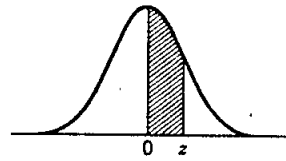


ตารางสถิติ

| | |
|---|---------------|
| 1. การแจกแจงแบบ Z | 390, 391 |
| 2. การแจกแจงแบบ t | 395, 396 |
| 3. การแจกแจงแบบ X^2 | 392, 393, 394 |
| 4. การแจกแจงแบบ f | 397 |
| 5. การแจกแจงแบบทวินาม (แบบไม่สะสม ($f(x)$)) | 401 |
| 6. การแจกแจงแบบทวินามแบบสะสม ($f(x)$) | 407 |
| 7. การแจกแจงแบบปัวซอง ($f(x)$) | 411 |
| 8. การแจกแจงแบบเอ็กซ์โพเนนเชียลแบบสะสม ($f(x)$) | 416 |
| 9. ตารางเลขสุ่ม | 417 |

AREAS UNDER THE NORMAL CURVE

An entry in the table is the proportion under the entire curve which is between $z = 0$ and a positive value of z . Areas for negative values of z are obtained by symmetry.



| z | Second decimal place of z | | | | | | | | | |
|-----|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | .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 | .2703 | .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 |

CUMULATIVE STANDARD NORMAL DISTRIBUTION

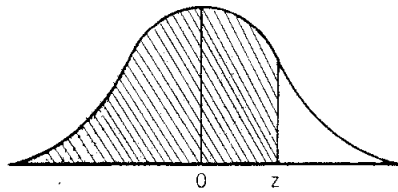


Table entries are cumulative probabilities represented in the shaded area above

| z | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|------|-------|-------|-------|-------|-------|-------|-------|--------|---------|------|
| 0 | 5000 | 5040 | 5080 | 5120 | 5160 | 5199 | 5239 | 5279 | 5319 | 5359 |
| .1 | 5398 | 5438 | 5478 | 5517 | 5557 | 5596 | 5636 | 5675 | 5714 | 5753 |
| .2 | 5793 | 5832 | 5871 | 5910 | 5948 | 5987 | 6026 | 6064 | 6103 | 6141 |
| .3 | 6179 | 6217 | 6255 | 6293 | 6331 | 6368 | 6406 | 6443 | 6480 | 6517 |
| .4 | 6554 | 6591 | 6628 | 6664 | 6700 | 6736 | 6772 | 6808 | 6844 | 6879 |
| .5 | 6915 | 6950 | 6985 | 7019 | 7054 | 7088 | 7123 | 7157 | 7190 | 7224 |
| .6 | 7257 | 7291 | 7324 | 7357 | 7389 | 7422 | 7454 | 7486 | 7517 | 7549 |
| .7 | 7580 | 7611 | 7642 | 7673 | 7704 | 7734 | 7764 | 7794 | 7823 | 7852 |
| .8 | 7881 | 7910 | 7939 | 7967 | 7995 | 8023 | 8051 | 8078 | 8106 | 8133 |
| .9 | 8159 | 8186 | 8212 | 8238 | 8264 | 8289 | 8315 | 8340 | 8365 | 8389 |
| 1.0 | 8413 | 8438 | 8461 | 8485 | 8508 | 8531 | 8554 | 8577 | 8599 | 8621 |
| 1.1 | 8643 | 8665 | 8686 | 8708 | 8729 | 8749 | 8770 | 8790 | 8810 | 8830 |
| 1.2 | 8849 | 8869 | 8888 | 8907 | 8925 | 8944 | 8962 | 8980 | 8997 | 9015 |
| 1.3 | 9032 | 9049 | 9066 | 9082 | 9099 | 9115 | 9131 | 9147 | 9162 | 9177 |
| 1.4 | 9192 | 9207 | 9222 | 9236 | 9251 | 9265 | 9279 | 9292 | 9306 | 9319 |
| 1.5 | 9332 | 9345 | 9357 | 9370 | 9382 | 9394 | 9406 | 9418 | 9429 | 9441 |
| 1.6 | 9452 | 9463 | 9474 | 9484 | 9495 | 9505 | 9515 | 9525 | 9535 | 9545 |
| 1.7 | 9554 | 9564 | 9573 | 9582 | 9591 | 9599 | 9608 | 9616 | 9625 | 9633 |
| 1.8 | 9641 | 9649 | 9656 | 9664 | 9671 | 9678 | 9686 | 9693 | 9699 | 9706 |
| 1.9 | 9713 | 9719 | 9726 | 9732 | 9738 | 9744 | 9750 | 9756 | 9761 | 9767 |
| 2.0 | 9772 | 9778 | 9783 | 9788 | 9793 | 9798 | 9803 | 9808 | 9812 | 9817 |
| 2.1 | 9821 | 9826 | 9830 | 9834 | 9838 | 9842 | 9846 | 9850 | 9854 | 9857 |
| 2.2 | 9861 | 9864 | 9868 | 9871 | 9875 | 9878 | 9881 | 9884 | 9887 | 9890 |
| 2.3 | 9893 | 9896 | 9898 | 9901 | 9904 | 9906 | 9909 | 9911 | 9913 | 9916 |
| 2.4 | 9918 | 9920 | 9922 | 9925 | 9927 | 9929 | 9931 | 9932 | 9934 | 9936 |
| 2.5 | 9938 | 9940 | 9941 | 9943 | 9945 | 9946 | 9948 | 9949 | 9951 | 9952 |
| 2.6 | 9953 | 9955 | 9956 | 9957 | 9959 | 9960 | 9961 | 9962 | 9963 | 9964 |
| 2.7 | 9965 | 9966 | 9967 | 9968 | 9969 | 9970 | 9971 | 9972 | 9973 | 9974 |
| 2.8 | 9974 | 9975 | 9976 | 9977 | 9977 | 9978 | 9979 | 9979 | 9980 | 9981 |
| 2.9 | 9981 | 9982 | 9982 | 9983 | 9984 | 9984 | 9985 | 9985 | 9986 | 9986 |
| 3.0 | 9987 | 9987 | 9987 | 9988 | 9988 | 9989 | 9989 | 9989 | 9990 | 9990 |
| 3.1 | 9990 | 9991 | 9991 | 9991 | 9992 | 9992 | 9992 | 9992 | 9993 | 9993 |
| 3.2 | 9993 | 9993 | 9994 | 9994 | 9994 | 9994 | 9994 | 9995 | 9995 | 9995 |
| 3.3 | 9995 | 9995 | 9995 | 9996 | 9996 | 9996 | 9996 | 9996 | 9996 | 9997 |
| 3.4 | 9997 | 9997 | 9997 | 9997 | 9997 | 9997 | 9997 | 9997 | 9997 | 9998 |
| z | 1.282 | 1.645 | 1.960 | 2.326 | 2.575 | 3.090 | 3.291 | 3.981 | 4.417 | |
| F(z) | .90 | .95 | .975 | .99 | .995 | .999 | .9995 | .99995 | .999995 | |

Source: Adapted by permission from A. M. Mood, *Introduction to the Theory of Statistics*, Table II. New York: McGraw-Hill Book Company, 1950

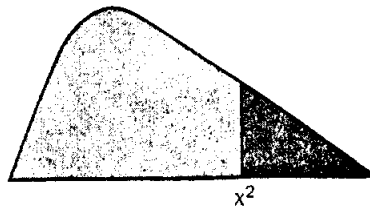
VALUES OF CHI SQUARE (χ^2)

the black area:



| d.f. | 0.99 | 0.98 | 0.95 | 0.90 | 0.80 | 0.70 | 0.50 | 0.30 | 0.20 | 0.10 | 0.05 | 0.02 | 0.01 |
|------|----------|----------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 0.000157 | 0.000628 | 0.00393 | 0.0158 | 0.0642 | 0.148 | 0.455 | 1.074 | 1.642 | 2.706 | 3.841 | 5.412 | 6.635 |
| 2 | 0.0201 | 0.0404 | 0.103 | 0.211 | 0.445 | 0.713 | 1.386 | 2.408 | 3.219 | 4.605 | 5.991 | 7.879 | 9.210 |
| 3 | 0.115 | 0.185 | 0.352 | 0.584 | 1.005 | 1.424 | 2.366 | 3.665 | 4.642 | 6.251 | 7.815 | 9.837 | 11.345 |
| 4 | 0.297 | 0.429 | 0.711 | 1.064 | 1.649 | 2.195 | 3.357 | 4.878 | 5.989 | 7.779 | 9.488 | 11.668 | 13.277 |
| 5 | 0.554 | 0.752 | 1.145 | 1.610 | 2.343 | 3.000 | 4.351 | 6.064 | 7.289 | 9.236 | 11.070 | 13.388 | 15.086 |
| 6 | 0.872 | 1.134 | 1.635 | 2.204 | 3.070 | 3.828 | 5.348 | 7.231 | 8.558 | 10.645 | 12.592 | 15.033 | 16.812 |
| 7 | 1.239 | 1.564 | 2.167 | 2.833 | 3.822 | 4.671 | 6.346 | 8.383 | 9.803 | 12.017 | 14.067 | 16.622 | 18.475 |
| 8 | 1.646 | 2.032 | 2.733 | 3.490 | 4.594 | 5.527 | 7.344 | 9.524 | 11.030 | 13.362 | 15.507 | 18.168 | 20.090 |
| 9 | 2.088 | 2.532 | 3.325 | 4.168 | 5.390 | 6.393 | 8.343 | 10.656 | 12.242 | 14.684 | 16.919 | 19.579 | 21.666 |
| 10 | 2.558 | 3.059 | 3.940 | 4.865 | 6.179 | 7.267 | 9.342 | 11.781 | 13.442 | 15.987 | 18.307 | 21.161 | 23.209 |
| 11 | 3.053 | 3.609 | 4.575 | 5.578 | 6.989 | 8.148 | 10.341 | 12.899 | 14.631 | 17.275 | 19.675 | 22.618 | 24.725 |
| 12 | 3.571 | 4.178 | 5.226 | 6.304 | 7.807 | 9.034 | 11.340 | 14.011 | 15.812 | 18.549 | 21.026 | 24.054 | 26.217 |
| 13 | 4.107 | 4.765 | 5.892 | 7.042 | 8.674 | 9.926 | 12.340 | 15.119 | 16.985 | 19.812 | 22.362 | 25.472 | 27.688 |
| 14 | 4.660 | 5.368 | 6.571 | 7.790 | 9.457 | 10.821 | 13.339 | 16.222 | 18.151 | 21.064 | 23.685 | 26.873 | 29.141 |
| 15 | 5.229 | 5.985 | 7.261 | 8.547 | 10.307 | 11.721 | 14.339 | 17.322 | 19.311 | 22.307 | 24.996 | 28.259 | 30.578 |
| 16 | 5.812 | 6.614 | 7.962 | 9.312 | 11.152 | 12.624 | 15.338 | 18.418 | 20.465 | 23.542 | 26.296 | 29.633 | 32.000 |
| 17 | 6.408 | 7.255 | 8.672 | 10.085 | 12.002 | 13.531 | 16.338 | 19.511 | 21.515 | 24.769 | 27.587 | 30.995 | 33.409 |
| 18 | 7.015 | 7.906 | 9.390 | 10.865 | 12.857 | 14.440 | 17.338 | 20.601 | 22.760 | 25.989 | 28.869 | 32.346 | 34.805 |
| 19 | 7.633 | 8.567 | 10.117 | 11.651 | 13.716 | 15.352 | 18.338 | 21.589 | 23.900 | 27.204 | 30.144 | 33.687 | 35.191 |
| 20 | 8.260 | 9.237 | 10.851 | 12.443 | 14.578 | 16.266 | 19.337 | 22.775 | 25.038 | 28.412 | 31.410 | 35.020 | 37.566 |
| 21 | 8.897 | 9.915 | 11.591 | 13.240 | 15.445 | 17.182 | 20.337 | 23.858 | 26.171 | 29.615 | 32.671 | 36.343 | 38.932 |
| 22 | 9.542 | 10.600 | 12.338 | 14.041 | 16.314 | 18.101 | 21.337 | 24.939 | 27.301 | 30.813 | 33.924 | 37.559 | 40.289 |
| 23 | 10.196 | 11.293 | 13.091 | 14.848 | 17.187 | 19.021 | 22.337 | 26.018 | 28.429 | 32.007 | 35.172 | 38.968 | 41.638 |
| 24 | 10.856 | 11.992 | 13.848 | 15.659 | 18.062 | 19.943 | 23.337 | 27.096 | 29.553 | 33.196 | 36.415 | 40.270 | 42.980 |
| 25 | 11.524 | 12.697 | 14.611 | 16.473 | 18.940 | 20.867 | 24.337 | 28.172 | 30.675 | 34.382 | 37.652 | 41.566 | 44.314 |
| 26 | 12.198 | 13.409 | 15.379 | 17.292 | 19.820 | 21.792 | 25.336 | 29.246 | 31.795 | 35.563 | 38.885 | 42.856 | 45.642 |
| 27 | 12.879 | 14.125 | 16.151 | 18.114 | 20.703 | 22.719 | 26.336 | 30.319 | 32.912 | 36.741 | 40.113 | 44.140 | 46.963 |
| 28 | 13.565 | 14.847 | 16.928 | 18.939 | 21.588 | 23.647 | 27.336 | 31.391 | 34.027 | 37.916 | 41.337 | 45.419 | 48.278 |
| 29 | 14.256 | 15.574 | 17.708 | 19.768 | 22.475 | 24.577 | 28.336 | 32.461 | 35.139 | 39.087 | 42.557 | 46.693 | 49.588 |
| 30 | 14.953 | 16.306 | 18.493 | 20.599 | 23.364 | 25.508 | 29.336 | 33.530 | 36.250 | 40.256 | 43.773 | 47.962 | 50.892 |

PERCENTAGE POINTS OF THE χ^2 DISTRIBUTION



| ν \ Q | 0.995 | 0.990 | 0.975 | 0.950 | 0.900 | 0.750 | 0.500 |
|-----------|-------------------------|------------------------|------------------------|------------------------|-----------|-----------|----------|
| 1 | $392704 \cdot 10^{-10}$ | $157088 \cdot 10^{-9}$ | $982069 \cdot 10^{-9}$ | $393214 \cdot 10^{-8}$ | 0.0157908 | 0.1015308 | 0.454936 |
| 2 | 0.0100251 | 0.0201007 | 0.0506356 | 0.102587 | 0.210721 | 0.575364 | 1.38629 |
| 3 | 0.0717218 | 0.114832 | 0.215795 | 0.351846 | 0.584374 | 1.212534 | 2.36597 |
| 4 | 0.206989 | 0.297109 | 0.484419 | 0.710723 | 1.063623 | 1.92256 | 3.35669 |
| 5 | 0.411742 | 0.554298 | 0.831212 | 1.145476 | 1.61031 | 2.67460 | 4.35146 |
| 6 | 0.675727 | 0.872090 | 1.23734 | 1.63538 | 2.20413 | 3.45460 | 5.34812 |
| 7 | 0.989256 | 1.239043 | 1.68987 | 2.16735 | 2.83311 | 4.25485 | 6.34581 |
| 8 | 1.34441 | 1.64650 | 2.17973 | 2.73264 | 3.48954 | 5.07064 | 7.34412 |
| 9 | 1.73493 | 2.08790 | 2.70039 | 3.32511 | 4.16816 | 5.89883 | 8.34283 |
| 10 | 2.15586 | 2.55821 | 3.24697 | 3.94030 | 4.86518 | 6.73720 | 9.34182 |
| 11 | 2.60322 | 3.05348 | 3.81575 | 4.57481 | 5.57778 | 7.58414 | 10.3410 |
| 12 | 3.07382 | 3.57057 | 4.40379 | 5.22603 | 6.30380 | 8.43842 | 11.3403 |
| 13 | 3.56503 | 4.10692 | 5.00875 | 5.89186 | 7.04150 | 9.29907 | 12.3398 |
| 14 | 4.07467 | 4.66043 | 5.62873 | 6.57063 | 7.78953 | 10.1653 | 13.3393 |
| 15 | 4.60092 | 5.22935 | 6.26214 | 7.26094 | 8.54676 | 11.0365 | 14.3389 |
| 16 | 5.14221 | 5.81221 | 6.90766 | 7.96165 | 9.31224 | 11.9122 | 15.3385 |
| 17 | 5.69722 | 6.40776 | 7.56419 | 8.67176 | 10.0852 | 12.7919 | 16.3382 |
| 18 | 6.26480 | 7.01491 | 8.23075 | 9.39046 | 10.8649 | 13.6753 | 17.3379 |
| 19 | 6.84397 | 7.63273 | 8.90652 | 10.1170 | 11.6509 | 14.5620 | 18.3377 |
| 20 | 7.43384 | 8.26040 | 9.59078 | 10.8508 | 12.4426 | 15.4518 | 19.3374 |
| 21 | 8.03365 | 8.89720 | 10.28293 | 11.5913 | 13.2396 | 16.3444 | 20.3372 |
| 22 | 8.64272 | 9.54249 | 10.9823 | 12.3380 | 14.0415 | 17.2396 | 21.3370 |
| 23 | 9.26043 | 10.19567 | 11.6886 | 13.0905 | 14.8480 | 18.1373 | 22.3369 |
| 24 | 9.88623 | 10.8564 | 12.4012 | 13.8484 | 15.6587 | 19.0373 | 23.3367 |
| 25 | 10.5197 | 11.5240 | 13.1197 | 14.6114 | 16.4734 | 19.9393 | 24.3366 |
| 26 | 11.1602 | 12.1981 | 13.8439 | 15.3792 | 17.2919 | 20.8434 | 25.3365 |
| 27 | 11.8076 | 12.8785 | 14.5734 | 16.1514 | 18.1139 | 21.7494 | 26.3363 |
| 28 | 12.4613 | 13.5647 | 15.3079 | 16.9279 | 18.9392 | 22.6572 | 27.3362 |
| 29 | 13.1211 | 14.2565 | 16.0471 | 17.7084 | 19.7677 | 23.5666 | 28.3361 |
| 30 | 13.7867 | 14.9535 | 16.7908 | 18.4927 | 20.5992 | 24.4776 | 29.3360 |
| 40 | 20.7065 | 22.1643 | 24.4330 | 26.5093 | 29.0505 | 33.6603 | 39.3353 |
| 50 | 27.9907 | 29.7067 | 32.3574 | 34.7643 | 37.6886 | 42.9421 | 49.3349 |
| 60 | 35.5345 | 37.4849 | 40.4817 | 43.1880 | 46.4589 | 52.2938 | 59.3347 |
| 70 | 43.2752 | 45.4417 | 48.7576 | 51.7393 | 55.3289 | 61.6983 | 69.3345 |
| 80 | 51.1719 | 53.5401 | 57.1532 | 60.3915 | 64.2778 | 71.1445 | 79.3343 |
| 90 | 59.1963 | 61.7541 | 65.6466 | 69.1260 | 73.2911 | 80.6247 | 89.3342 |
| 100 | 67.3276 | 70.0649 | 74.2219 | 77.9295 | 82.3581 | 90.1332 | 99.3341 |
| X | -2.5758 | -2.3263 | -1.9600 | -1.6449 | -1.2816 | -0.6745 | 0.0000 |

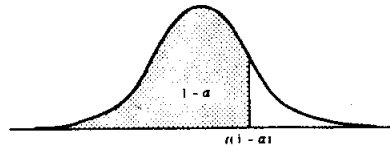
PERCENTAGE POINTS OF THE χ^2 DISTRIBUTION

| ν \ Q | 0.250 | 0.100 | 0.050 | 0.025 | 0.010 | 0.005 | 0.001 |
|-----------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 1.32330 | 2.70554 | 3.84146 | 5.02389 | 6.63490 | 7.87944 | 10.828 |
| 2 | 2.77259 | 4.60517 | 5.99146 | 7.37776 | 9.21034 | 10.5966 | 13.816 |
| 3 | 4.10834 | 6.25139 | 7.81473 | 9.34840 | 11.3449 | 12.8382 | 16.266 |
| 4 | 5.38527 | 7.77944 | 9.48773 | 11.1433 | 13.2767 | 14.8603 | 18.467 |
| 5 | 6.62568 | 9.23636 | 11.0705 | 12.8325 | 15.0863 | 16.7496 | 20.515 |
| 6 | 7.84080 | 10.6446 | 12.5916 | 14.4494 | 16.8119 | 18.5476 | 22.458 |
| 7 | 9.03715 | 12.0170 | 14.0671 | 16.0128 | 18.4753 | 20.2777 | 24.322 |
| 8 | 10.2189 | 13.3616 | 15.5073 | 17.5345 | 20.0902 | 21.9550 | 26.125 |
| 9 | 11.3888 | 14.6837 | 16.9190 | 19.0228 | 21.6660 | 23.5894 | 27.877 |
| 10 | 12.5489 | 15.9872 | 18.3070 | 20.4832 | 23.2093 | 25.1882 | 29.588 |
| 11 | 13.7007 | 17.2750 | 19.6751 | 21.9200 | 24.7250 | 26.7568 | 31.264 |
| 12 | 14.8454 | 18.5493 | 21.0261 | 23.3367 | 26.2170 | 28.2995 | 32.909 |
| 13 | 15.9839 | 19.8119 | 22.3620 | 24.7356 | 27.6882 | 29.8195 | 34.528 |
| 14 | 17.1169 | 21.0641 | 23.6848 | 26.1189 | 29.1412 | 31.3194 | 36.123 |
| 15 | 18.2451 | 22.3071 | 24.9958 | 27.4884 | 30.5779 | 32.8013 | 37.697 |
| 16 | 19.3689 | 23.5418 | 26.2962 | 28.8454 | 31.9999 | 34.2672 | 39.252 |
| 17 | 20.4887 | 24.7690 | 27.5871 | 30.1910 | 33.4087 | 35.7185 | 40.790 |
| 18 | 21.6049 | 25.9894 | 28.8693 | 31.5264 | 34.8053 | 37.1565 | 42.312 |
| 19 | 22.7178 | 27.2036 | 30.1435 | 32.8523 | 36.1909 | 38.5823 | 43.820 |
| 20 | 23.8277 | 28.4120 | 31.4104 | 34.1696 | 37.5662 | 39.9968 | 45.315 |
| 21 | 24.9348 | 29.6151 | 32.6706 | 35.4789 | 38.9322 | 41.4011 | 46.797 |
| 22 | 26.0393 | 30.8133 | 33.9244 | 36.7807 | 40.2894 | 42.7957 | 48.268 |
| 23 | 27.1413 | 32.0069 | 35.1725 | 38.0756 | 41.6384 | 44.1813 | 49.728 |
| 24 | 28.2412 | 33.1962 | 36.4150 | 39.3641 | 42.9798 | 45.5585 | 51.179 |
| 25 | 29.3389 | 34.3816 | 37.6525 | 40.6465 | 44.3141 | 46.9279 | 52.618 |
| 26 | 30.4346 | 35.5632 | 38.8851 | 41.9232 | 45.6417 | 48.2899 | 54.052 |
| 27 | 31.5284 | 36.7412 | 40.1133 | 43.1945 | 46.9629 | 49.6449 | 55.476 |
| 28 | 32.6205 | 37.9159 | 41.3371 | 44.4608 | 48.2782 | 50.9934 | 56.892 |
| 29 | 33.7109 | 39.0875 | 42.5570 | 45.7223 | 49.5879 | 52.3356 | 58.301 |
| 30 | 34.7997 | 40.2560 | 43.7730 | 46.9792 | 50.8922 | 53.6720 | 59.703 |
| 40 | 45.6160 | 51.8051 | 55.7585 | 59.3417 | 63.6907 | 66.7660 | 73.402 |
| 50 | 56.3336 | 63.1671 | 67.5048 | 71.4202 | 76.1539 | 79.4900 | 86.661 |
| 60 | 66.9815 | 74.3970 | 79.0819 | 83.2977 | 88.3794 | 91.9517 | 99.607 |
| 70 | 77.5767 | 85.5270 | 90.5312 | 95.0232 | 100.425 | 104.215 | 112.317 |
| 80 | 88.1303 | 96.5782 | 101.879 | 106.629 | 112.329 | 116.321 | 124.839 |
| 90 | 98.6499 | 107.565 | 113.145 | 118.136 | 124.116 | 128.299 | 137.208 |
| 100 | 109.141 | 118.498 | 124.342 | 129.561 | 135.807 | 140.169 | 149.449 |
| X | +0.6745 | +1.2816 | +1.6449 | +1.9600 | +2.3263 | +2.5758 | +3.0902 |

Source: This table is reproduced with the kind permission of the Trustees of Biometrika from E. S. Pearson and H. O. Hartley (eds.), *The Biometrika Tables for Statisticians*, vol. 1, 3rd ed., Biometrika, 1966.

Table B-3 Percentiles of the *t* distribution

Entry is $t(1 - \alpha; \nu)$ where $P\{t(\nu) \leq t(1 - \alpha; \nu)\} = 1 - \alpha$



| ν | $1 - \alpha$ | | | | | | |
|----------|--------------|-------|-------|-------|-------|-------|-------|
| | .55 | .60 | .65 | .70 | .75 | .80 | .85 |
| 1 | 0.158 | 0.325 | 0.510 | 0.727 | 1.000 | 1.376 | 1.963 |
| 2 | 0.142 | 0.289 | 0.445 | 0.617 | 0.816 | 1.061 | 1.386 |
| 3 | 0.137 | 0.277 | 0.424 | 0.584 | 0.765 | 0.978 | 1.250 |
| 4 | 0.134 | 0.271 | 0.414 | 0.569 | 0.741 | 0.941 | 1.190 |
| 5 | 0.132 | 0.267 | 0.408 | 0.559 | 0.727 | 0.920 | 1.156 |
| 6 | 0.131 | 0.265 | 0.404 | 0.553 | 0.718 | 0.906 | 1.134 |
| 7 | 0.130 | 0.263 | 0.402 | 0.549 | 0.711 | 0.896 | 1.119 |
| 8 | 0.130 | 0.262 | 0.399 | 0.546 | 0.706 | 0.889 | 1.108 |
| 9 | 0.129 | 0.261 | 0.398 | 0.543 | 0.703 | 0.883 | 1.100 |
| 10 | 0.129 | 0.260 | 0.397 | 0.542 | 0.700 | 0.879 | 1.093 |
| 11 | 0.129 | 0.260 | 0.396 | 0.540 | 0.697 | 0.876 | 1.088 |
| 12 | 0.128 | 0.259 | 0.395 | 0.539 | 0.695 | 0.873 | 1.083 |
| 13 | 0.128 | 0.259 | 0.394 | 0.538 | 0.694 | 0.870 | 1.079 |
| 14 | 0.128 | 0.258 | 0.393 | 0.537 | 0.692 | 0.868 | 1.076 |
| 15 | 0.128 | 0.258 | 0.393 | 0.536 | 0.691 | 0.866 | 1.074 |
| 16 | 0.128 | 0.258 | 0.392 | 0.535 | 0.690 | 0.865 | 1.071 |
| 17 | 0.128 | 0.257 | 0.392 | 0.534 | 0.689 | 0.863 | 1.069 |
| 18 | 0.127 | 0.257 | 0.392 | 0.534 | 0.688 | 0.862 | 1.067 |
| 19 | 0.127 | 0.257 | 0.391 | 0.533 | 0.688 | 0.861 | 1.066 |
| 20 | 0.127 | 0.257 | 0.391 | 0.533 | 0.687 | 0.860 | 1.064 |
| 21 | 0.127 | 0.257 | 0.391 | 0.532 | 0.686 | 0.859 | 1.063 |
| 22 | 0.127 | 0.256 | 0.390 | 0.532 | 0.686 | 0.858 | 1.061 |
| 23 | 0.127 | 0.256 | 0.390 | 0.532 | 0.685 | 0.858 | 1.060 |
| 24 | 0.127 | 0.256 | 0.390 | 0.531 | 0.685 | 0.857 | 1.059 |
| 25 | 0.127 | 0.256 | 0.390 | 0.531 | 0.684 | 0.856 | 1.058 |
| 26 | 0.127 | 0.256 | 0.390 | 0.531 | 0.684 | 0.856 | 1.058 |
| 27 | 0.127 | 0.256 | 0.389 | 0.531 | 0.684 | 0.855 | 1.057 |
| 28 | 0.127 | 0.256 | 0.389 | 0.530 | 0.683 | 0.855 | 1.056 |
| 29 | 0.127 | 0.256 | 0.389 | 0.530 | 0.683 | 0.854 | 1.055 |
| 30 | 0.127 | 0.256 | 0.389 | 0.530 | 0.683 | 0.854 | 1.055 |
| 40 | 0.126 | 0.255 | 0.388 | 0.529 | 0.681 | 0.851 | 1.050 |
| 60 | 0.126 | 0.254 | 0.387 | 0.527 | 0.679 | 0.848 | 1.046 |
| 120 | 0.126 | 0.254 | 0.386 | 0.526 | 0.677 | 0.845 | 1.041 |
| ∞ | 0.126 | 0.253 | 0.385 | 0.524 | 0.674 | 0.842 | 1.036 |

Table B-3 Percentiles of the t distribution (Continued)

| ν | $1 - \alpha$ | | | | | |
|----------|--------------|-------|--------|--------|--------|---------|
| | .90 | .95 | .975 | .99 | .995 | .9995 |
| 1 | 3.078 | 6.314 | 12.706 | 31.821 | 63.657 | 636.619 |
| 2 | 1.886 | 2.920 | 4.303 | 6.965 | 9.925 | 31.598 |
| 3 | 1.638 | 2.353 | 3.182 | 4.541 | 5.841 | 12.924 |
| 4 | 1.533 | 2.132 | 2.776 | 3.747 | 4.604 | 8.610 |
| 5 | 1.476 | 2.015 | 2.571 | 3.365 | 4.032 | 6.869 |
| 6 | 1.440 | 1.943 | 2.447 | 3.143 | 3.707 | 5.959 |
| 7 | 1.415 | 1.895 | 2.365 | 2.998 | 3.499 | 5.408 |
| 8 | 1.397 | 1.860 | 2.306 | 2.896 | 3.355 | 5.041 |
| 9 | 1.383 | 1.833 | 2.262 | 2.821 | 3.250 | 4.781 |
| 10 | 1.372 | 1.812 | 2.228 | 2.764 | 3.169 | 4.587 |
| 11 | 1.363 | 1.796 | 2.201 | 2.718 | 3.106 | 4.437 |
| 12 | 1.356 | 1.782 | 2.179 | 2.681 | 3.055 | 4.318 |
| 13 | 1.350 | 1.771 | 2.160 | 2.650 | 3.012 | 4.221 |
| 14 | 1.345 | 1.761 | 2.145 | 2.624 | 2.977 | 4.140 |
| 15 | 1.341 | 1.753 | 2.131 | 2.602 | 2.947 | 4.073 |
| 16 | 1.337 | 1.746 | 2.120 | 2.583 | 2.921 | 4.015 |
| 17 | 1.333 | 1.740 | 2.110 | 2.567 | 2.898 | 3.965 |
| 18 | 1.330 | 1.734 | 2.101 | 2.552 | 2.878 | 3.922 |
| 19 | 1.328 | 1.729 | 2.093 | 2.539 | 2.861 | 3.883 |
| 20 | 1.325 | 1.725 | 2.086 | 2.528 | 2.845 | 3.850 |
| 21 | 1.323 | 1.721 | 2.080 | 2.518 | 2.831 | 3.819 |
| 22 | 1.321 | 1.717 | 2.074 | 2.508 | 2.819 | 3.792 |
| 23 | 1.319 | 1.714 | 2.069 | 2.500 | 2.807 | 3.767 |
| 24 | 1.318 | 1.711 | 2.064 | 2.492 | 2.797 | 3.745 |
| 25 | 1.316 | 1.708 | 2.060 | 2.485 | 2.787 | 3.725 |
| 26 | 1.315 | 1.706 | 2.056 | 2.479 | 2.779 | 3.707 |
| 27 | 1.314 | 1.703 | 2.052 | 2.473 | 2.771 | 3.690 |
| 28 | 1.313 | 1.701 | 2.048 | 2.467 | 2.763 | 3.674 |
| 29 | 1.311 | 1.699 | 2.045 | 2.462 | 2.756 | 3.659 |
| 30 | 1.310 | 1.697 | 2.042 | 2.457 | 2.750 | 3.646 |
| 40 | 1.303 | 1.684 | 2.021 | 2.423 | 2.704 | 3.551 |
| 60 | 1.296 | 1.671 | 2.000 | 2.390 | 2.660 | 3.460 |
| 120 | 1.289 | 1.658 | 1.980 | 2.358 | 2.617 | 3.373 |
| ∞ | 1.282 | 1.645 | 1.960 | 2.326 | 2.576 | 3.291 |

SOURCE: Taken from Table III of Fisher and Yates: *Statistical Tables for Biological, Agricultural and Medical Research*, 6th ed., 1974, published by Longman Group Ltd., London, and by permission of the authors and publishers.

EXAMPLE: $t(.95; 10) = 1.812$ so $P(t(10) \leq 1.812) = .95$.

TEXT REFERENCE: Use of this table is discussed on pp. 167-168.

PERCENTAGE POINTS OF
THE f DISTRIBUTION

Table of Percentage Points of the F-Distribution

Table B-4 Percentiles of the *F* distribution (Continued)

$$1 - \alpha = .99$$

| denominator <i>df</i> | numerator <i>df</i> | | | | | | | | |
|--------------------------|---------------------|--------|-------|-------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1 | 4052 | 4999.5 | 5403 | 5625 | 5764 | 5859 | 5928 | 5981 | 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 | 5.20 | 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 | 4.19 |
| 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 |
| ∞ | 6.63 | 4.61 | 3.78 | 3.32 | 3.02 | 2.80 | 2.64 | 2.51 | 2.41 |

Table B-4 Percentiles of the *F* distribution (Continued)

$1 - \alpha = .99$

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

SOURCE: Tabulated values adapted from Table 5 of Pearson and Hartley, *Biometrika Tables for Statisticians*, Volume 2, 1972, published by the Cambridge University Press for the Biometrika Trustees, with the permission of the authors and publishers.

EXAMPLE: $F(.99; 8, 24) = 3.36$ so $P\{F(8,24) \leq 3.36\} = .99$

TEXT REFERENCE: Use of this table is discussed on pp. 170-171.

Table VII* Critical Values of the F Distribution

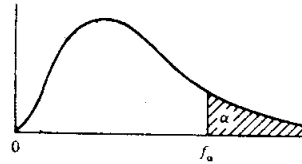


Table VII Critical Values of the F Distribution (Continued)

$\alpha = .05$

$f_{0.05}(\nu_1, \nu_2)$

| ν_2 | ν_1 | | | | | | | | |
|----------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 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 | 19.30 | 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 |
| ∞ | 3.84 | 3.00 | 2.60 | 2.37 | 2.21 | 2.10 | 2.01 | 1.94 | 1.88 |

$f_{0.05}(\nu_1, \nu_2)$

| ν_2 | ν_1 | | | | | | | | | |
|----------|---------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
| | 10 | 12 | 15 | 20 | 24 | 30 | 40 | 60 | 120 | ∞ |
| 1 | 241.9 | 243.9 | 245.9 | 248.0 | 249.1 | 250.1 | 251.1 | 252.2 | 253.3 | 254.3 |
| 2 | 19.40 | 19.41 | 19.43 | 19.45 | 19.46 | 19.47 | 19.48 | 19.49 | 19.49 | 19.50 |
| 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 | 1.61 | 1.55 | 1.50 | 1.43 | 1.35 | 1.25 |
| ∞ | 1.83 | 1.75 | 1.67 | 1.57 | 1.52 | 1.46 | 1.39 | 1.32 | 1.22 | 1.00 |

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BINOMIAL PROBABILITY DISTRIBUTIONS

Table B-5 Binomial probabilities

Entry is probability mass $f(x)$ corresponding to $X = x$, where $f(x) = \binom{n}{x} p^x (1-p)^{n-x}$

| n \ x | p | | | | | | | | | x |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|
| | .01 | .02 | .03 | .04 | .05 | .06 | .07 | .08 | .09 | |
| 2 0 | 0.9801 | 0.9604 | 0.9409 | 0.9216 | 0.9025 | 0.8836 | 0.8649 | 0.8464 | 0.8281 | 2 |
| 1 | 0.0198 | 0.0392 | 0.0582 | 0.0768 | 0.0950 | 0.1128 | 0.1302 | 0.1472 | 0.1638 | 1 |
| 2 | 0.0001 | 0.0004 | 0.0009 | 0.0016 | 0.0025 | 0.0036 | 0.0049 | 0.0064 | 0.0081 | 0 2 |
| 3 0 | 0.9703 | 0.9412 | 0.9127 | 0.8847 | 0.8574 | 0.8306 | 0.8044 | 0.7787 | 0.7536 | 3 |
| 1 | 0.0294 | 0.0576 | 0.0847 | 0.1106 | 0.1354 | 0.1590 | 0.1816 | 0.2031 | 0.2236 | 2 |
| 2 | 0.0003 | 0.0012 | 0.0026 | 0.0046 | 0.0071 | 0.0102 | 0.0137 | 0.0177 | 0.0221 | 1 |
| 3 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0 3 |
| 4 0 | 0.9606 | 0.9224 | 0.8853 | 0.8493 | 0.8145 | 0.7807 | 0.7481 | 0.7164 | 0.6857 | 4 |
| 1 | 0.0388 | 0.0753 | 0.1095 | 0.1416 | 0.1715 | 0.1993 | 0.2252 | 0.2492 | 0.2713 | 3 |
| 2 | 0.0006 | 0.0023 | 0.0051 | 0.0088 | 0.0135 | 0.0191 | 0.0254 | 0.0325 | 0.0402 | 2 |
| 3 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0.0005 | 0.0008 | 0.0013 | 0.0019 | 0.0027 | 1 |
| 4 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0 4 |
| 5 0 | 0.9510 | 0.9039 | 0.8587 | 0.8154 | 0.7738 | 0.7339 | 0.6957 | 0.6591 | 0.6240 | 5 |
| 1 | 0.0480 | 0.0922 | 0.1328 | 0.1699 | 0.2036 | 0.2342 | 0.2618 | 0.2866 | 0.3086 | 4 |
| 2 | 0.0010 | 0.0038 | 0.0082 | 0.0142 | 0.0214 | 0.0299 | 0.0394 | 0.0498 | 0.0610 | 3 |
| 3 | 0.0000 | 0.0001 | 0.0003 | 0.0006 | 0.0011 | 0.0019 | 0.0030 | 0.0043 | 0.0060 | 2 |
| 4 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0002 | 0.0003 | 1 |
| 5 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0 5 |
| 6 0 | 0.9415 | 0.8858 | 0.8330 | 0.7828 | 0.7351 | 0.6899 | 0.6470 | 0.6064 | 0.5679 | 6 |
| 1 | 0.0571 | 0.1085 | 0.1546 | 0.1957 | 0.2321 | 0.2642 | 0.2922 | 0.3164 | 0.3370 | 5 |
| 2 | 0.0014 | 0.0055 | 0.0120 | 0.0204 | 0.0305 | 0.0422 | 0.0550 | 0.0688 | 0.0833 | 4 |
| 3 | 0.0000 | 0.0002 | 0.0005 | 0.0011 | 0.0021 | 0.0036 | 0.0055 | 0.0080 | 0.0110 | 3 |
| 4 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0.0003 | 0.0005 | 0.0008 | 2 |
| 5 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1 |
| 6 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0 6 |
| 7 0 | 0.9321 | 0.8681 | 0.8080 | 0.7514 | 0.6983 | 0.6485 | 0.6017 | 0.5578 | 0.5168 | 7 |
| 1 | 0.0659 | 0.1240 | 0.1749 | 0.2192 | 0.2573 | 0.2897 | 0.3170 | 0.3396 | 0.3578 | 6 |
| 2 | 0.0020 | 0.0076 | 0.0162 | 0.0274 | 0.0406 | 0.0555 | 0.0716 | 0.0886 | 0.1061 | 5 |
| 3 | 0.0000 | 0.0003 | 0.0008 | 0.0019 | 0.0036 | 0.0059 | 0.0090 | 0.0128 | 0.0175 | 4 |
| 4 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0.0004 | 0.0007 | 0.0011 | 0.0017 | 3 |
| 5 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 2 |
| 6 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1 |
| 7 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0 7 |
| 8 0 | 0.9227 | 0.8508 | 0.7837 | 0.7214 | 0.6634 | 0.6096 | 0.5596 | 0.5132 | 0.4703 | 8 |
| 1 | 0.0746 | 0.1389 | 0.1939 | 0.2405 | 0.2793 | 0.3113 | 0.3370 | 0.3570 | 0.3721 | 7 |
| 2 | 0.0026 | 0.0099 | 0.0210 | 0.0351 | 0.0515 | 0.0695 | 0.0888 | 0.1087 | 0.1288 | 6 |
| 3 | 0.0001 | 0.0004 | 0.0013 | 0.0029 | 0.0054 | 0.0089 | 0.0134 | 0.0189 | 0.0255 | 5 |
| 4 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0.0004 | 0.0007 | 0.0013 | 0.0021 | 0.0031 | 4 |
| 5 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0002 | 3 |
| 6 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2 |
| 7 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1 |
| 8 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0 8 |
| 9 0 | 0.9135 | 0.8337 | 0.7602 | 0.6925 | 0.6302 | 0.5730 | 0.5204 | 0.4722 | 0.4279 | 9 |
| 1 | 0.0830 | 0.1531 | 0.2116 | 0.2597 | 0.2985 | 0.3292 | 0.3525 | 0.3695 | 0.3809 | 8 |
| 2 | 0.0034 | 0.0125 | 0.0262 | 0.0433 | 0.0629 | 0.0840 | 0.1061 | 0.1285 | 0.1507 | 7 |
| 3 | 0.0001 | 0.0006 | 0.0019 | 0.0042 | 0.0077 | 0.0125 | 0.0186 | 0.0261 | 0.0348 | 6 |
| 4 | 0.0000 | 0.0000 | 0.0001 | 0.0003 | 0.0006 | 0.0012 | 0.0021 | 0.0034 | 0.0052 | 5 |
| 5 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0.0003 | 0.0005 | 4 |
| 6 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3 |
| 7 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2 |
| 8 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1 |
| 9 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0 9 |
| | .99 | .98 | .97 | .96 | .95 | .94 | .93 | .92 | .91 | x n |
| | p | | | | | | | | | |

Table B-5 Binomial probabilities (Continued)

| n | x | p | | | | | | | | | n | x |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|----|
| | | .01 | .02 | .03 | .04 | .05 | .06 | .07 | .08 | .09 | | |
| 10 | 0 | 0.9044 | 0.8171 | 0.7374 | 0.6648 | 0.5987 | 0.5386 | 0.4840 | 0.4344 | 0.3894 | 10 | 0 |
| | 1 | 0.0914 | 0.1667 | 0.2281 | 0.2770 | 0.3151 | 0.3438 | 0.3643 | 0.3777 | 0.3851 | 9 | 1 |
| | 2 | 0.0042 | 0.0153 | 0.0317 | 0.0519 | 0.0746 | 0.0988 | 0.1234 | 0.1478 | 0.1714 | 8 | 2 |
| | 3 | 0.0001 | 0.0008 | 0.0026 | 0.0058 | 0.0105 | 0.0168 | 0.0248 | 0.0343 | 0.0452 | 7 | 3 |
| | 4 | 0.0000 | 0.0000 | 0.0001 | 0.0004 | 0.0010 | 0.0019 | 0.0033 | 0.0052 | 0.0078 | 6 | 4 |
| | 5 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0003 | 0.0005 | 0.0009 | 5 | 5 |
| | 6 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 4 | 6 |
| | 7 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3 | 7 |
| | 8 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2 | 8 |
| | 9 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1 | 9 |
| 10 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0 | 10 | |
| 12 | 0 | 0.8864 | 0.7847 | 0.6938 | 0.6127 | 0.5404 | 0.4759 | 0.4186 | 0.3677 | 0.3225 | 12 | 0 |
| | 1 | 0.1074 | 0.1922 | 0.2575 | 0.3064 | 0.3413 | 0.3645 | 0.3781 | 0.3837 | 0.3827 | 11 | 1 |
| | 2 | 0.0060 | 0.0216 | 0.0438 | 0.0702 | 0.0988 | 0.1280 | 0.1565 | 0.1835 | 0.2082 | 10 | 2 |
| | 3 | 0.0002 | 0.0015 | 0.0045 | 0.0098 | 0.0173 | 0.0272 | 0.0393 | 0.0532 | 0.0686 | 9 | 3 |
| | 4 | 0.0000 | 0.0001 | 0.0003 | 0.0009 | 0.0021 | 0.0039 | 0.0067 | 0.0104 | 0.0153 | 8 | 4 |
| | 5 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0.0004 | 0.0008 | 0.0014 | 0.0024 | 7 | 5 |
| | 6 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0003 | 6 | 6 |
| | 7 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5 | 7 |
| | 8 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4 | 8 |
| | 9 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3 | 9 |
| | 10 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2 | 10 |
| | 11 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1 | 11 |
| 12 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0 | 12 | |
| 15 | 0 | 0.8601 | 0.7386 | 0.6333 | 0.5421 | 0.4633 | 0.3953 | 0.3367 | 0.2863 | 0.2430 | 15 | 0 |
| | 1 | 0.1303 | 0.2261 | 0.2938 | 0.3388 | 0.3658 | 0.3785 | 0.3801 | 0.3734 | 0.3605 | 14 | 1 |
| | 2 | 0.0092 | 0.0323 | 0.0636 | 0.0988 | 0.1348 | 0.1691 | 0.2003 | 0.2273 | 0.2496 | 13 | 2 |
| | 3 | 0.0004 | 0.0029 | 0.0085 | 0.0178 | 0.0307 | 0.0468 | 0.0653 | 0.0857 | 0.1070 | 12 | 3 |
| | 4 | 0.0000 | 0.0002 | 0.0008 | 0.0022 | 0.0049 | 0.0090 | 0.0148 | 0.0223 | 0.0317 | 11 | 4 |
| | 5 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0.0006 | 0.0013 | 0.0024 | 0.0043 | 0.0069 | 10 | 5 |
| | 6 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0003 | 0.0006 | 0.0011 | 9 | 6 |
| | 7 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 8 | 7 |
| | 8 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 7 | 8 |
| | 9 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6 | 9 |
| | 10 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5 | 10 |
| | 11 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4 | 11 |
| | 12 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3 | 12 |
| | 13 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2 | 13 |
| | 14 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1 | 14 |
| 15 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0 | 15 | |
| 20 | 0 | 0.8179 | 0.6676 | 0.5438 | 0.4420 | 0.3585 | 0.2901 | 0.2342 | 0.1887 | 0.1516 | 20 | 0 |
| | 1 | 0.1652 | 0.2725 | 0.3364 | 0.3683 | 0.3774 | 0.3703 | 0.3526 | 0.3282 | 0.3000 | 19 | 1 |
| | 2 | 0.0159 | 0.0528 | 0.0988 | 0.1458 | 0.1887 | 0.2246 | 0.2521 | 0.2711 | 0.2818 | 18 | 2 |
| | 3 | 0.0010 | 0.0065 | 0.0183 | 0.0364 | 0.0596 | 0.0860 | 0.1139 | 0.1414 | 0.1672 | 17 | 3 |
| | 4 | 0.0000 | 0.0006 | 0.0024 | 0.0065 | 0.0133 | 0.0233 | 0.0364 | 0.0523 | 0.0703 | 16 | 4 |
| | 5 | 0.0000 | 0.0000 | 0.0002 | 0.0009 | 0.0022 | 0.0048 | 0.0088 | 0.0145 | 0.0222 | 15 | 5 |
| | 6 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0003 | 0.0008 | 0.0017 | 0.0032 | 0.0055 | 14 | 6 |
| | 7 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0.0005 | 0.0011 | 13 | 7 |
| | 8 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 12 | 8 |
| | 9 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 11 | 9 |
| | 10 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 10 | 10 |
| | 11 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 9 | 11 |
| | 12 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 8 | 12 |
| | 13 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 7 | 13 |
| | 14 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6 | 14 |
| | 15 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5 | 15 |
| | 16 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4 | 16 |
| | 17 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3 | 17 |
| | 18 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2 | 18 |
| | 19 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1 | 19 |
| 20 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0 | 20 | |
| | | .99 | .98 | .97 | .96 | .95 | .94 | .93 | .92 | .91 | x | n |
| | | p | | | | | | | | | | |

Table B-5 Binomial probabilities (Continued)

| n | x | p | | | | | | | | | x | n |
|---|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|---|
| | | 10 | .15 | .20 | .25 | .30 | .35 | .40 | .45 | .50 | | |
| 2 | 0 | 0.8100 | 0.7225 | 0.6400 | 0.5625 | 0.4900 | 0.4225 | 0.3600 | 0.3025 | 0.2500 | 2 | 2 |
| | 1 | 0.1800 | 0.2550 | 0.3200 | 0.3750 | 0.4200 | 0.4550 | 0.4800 | 0.4950 | 0.5000 | 1 | 1 |
| | 2 | 0.0100 | 0.0225 | 0.0400 | 0.0625 | 0.0900 | 0.1225 | 0.1600 | 0.2025 | 0.2500 | 0 | 2 |
| 3 | 0 | 0.7290 | 0.6141 | 0.5120 | 0.4219 | 0.3430 | 0.2746 | 0.2160 | 0.1664 | 0.1250 | 3 | 3 |
| | 1 | 0.2430 | 0.3251 | 0.3840 | 0.4219 | 0.4410 | 0.4436 | 0.4320 | 0.4084 | 0.3750 | 2 | 2 |
| | 2 | 0.0270 | 0.0574 | 0.0960 | 0.1406 | 0.1890 | 0.2389 | 0.2880 | 0.3341 | 0.3750 | 1 | 1 |
| | 3 | 0.0010 | 0.0034 | 0.0080 | 0.0156 | 0.0270 | 0.0429 | 0.0640 | 0.0911 | 0.1250 | 0 | 3 |
| 4 | 0 | 0.6561 | 0.5220 | 0.4096 | 0.3164 | 0.2401 | 0.1785 | 0.1296 | 0.0915 | 0.0625 | 4 | 4 |
| | 1 | 0.2916 | 0.3685 | 0.4096 | 0.4219 | 0.4116 | 0.3845 | 0.3456 | 0.2995 | 0.2500 | 3 | 3 |
| | 2 | 0.0486 | 0.0975 | 0.1536 | 0.2109 | 0.2646 | 0.3105 | 0.3456 | 0.3675 | 0.3750 | 2 | 2 |
| | 3 | 0.0036 | 0.0115 | 0.0256 | 0.0469 | 0.0756 | 0.1115 | 0.1536 | 0.2005 | 0.2500 | 1 | 1 |
| | 4 | 0.0001 | 0.0005 | 0.0016 | 0.0039 | 0.0081 | 0.0150 | 0.0256 | 0.0410 | 0.0625 | 0 | 4 |
| 5 | 0 | 0.5905 | 0.4437 | 0.3277 | 0.2373 | 0.1681 | 0.1160 | 0.0778 | 0.0503 | 0.0312 | 5 | 5 |
| | 1 | 0.3280 | 0.3915 | 0.4096 | 0.3955 | 0.3601 | 0.3124 | 0.2592 | 0.2059 | 0.1562 | 4 | 4 |
| | 2 | 0.0729 | 0.1382 | 0.2048 | 0.2637 | 0.3087 | 0.3364 | 0.3456 | 0.3369 | 0.3125 | 3 | 3 |
| | 3 | 0.0081 | 0.0244 | 0.0512 | 0.0879 | 0.1323 | 0.1811 | 0.2304 | 0.2757 | 0.3125 | 2 | 2 |
| | 4 | 0.0004 | 0.0022 | 0.0064 | 0.0146 | 0.0283 | 0.0488 | 0.0768 | 0.1128 | 0.1562 | 1 | 1 |
| | 5 | 0.0000 | 0.0001 | 0.0003 | 0.0010 | 0.0024 | 0.0053 | 0.0102 | 0.0185 | 0.0312 | 0 | 5 |
| 6 | 0 | 0.5314 | 0.3771 | 0.2621 | 0.1780 | 0.1176 | 0.0754 | 0.0467 | 0.0277 | 0.0156 | 6 | 6 |
| | 1 | 0.3543 | 0.3993 | 0.3932 | 0.3560 | 0.3025 | 0.2437 | 0.1866 | 0.1359 | 0.0938 | 5 | 5 |
| | 2 | 0.0984 | 0.1762 | 0.2458 | 0.2966 | 0.3241 | 0.3280 | 0.3110 | 0.2780 | 0.2344 | 4 | 4 |
| | 3 | 0.0146 | 0.0415 | 0.0819 | 0.1318 | 0.1852 | 0.2355 | 0.2765 | 0.3032 | 0.3125 | 3 | 3 |
| | 4 | 0.0012 | 0.0055 | 0.0154 | 0.0330 | 0.0595 | 0.0951 | 0.1382 | 0.1861 | 0.2344 | 2 | 2 |
| | 5 | 0.0001 | 0.0004 | 0.0015 | 0.0044 | 0.0102 | 0.0205 | 0.0369 | 0.0609 | 0.0938 | 1 | 1 |
| | 6 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0.0007 | 0.0018 | 0.0041 | 0.0083 | 0.0156 | 0 | 6 |
| 7 | 0 | 0.4783 | 0.3206 | 0.2097 | 0.1335 | 0.0824 | 0.0490 | 0.0280 | 0.0152 | 0.0078 | 7 | 7 |
| | 1 | 0.3720 | 0.3960 | 0.3670 | 0.3115 | 0.2471 | 0.1848 | 0.1306 | 0.0872 | 0.0547 | 6 | 6 |
| | 2 | 0.1240 | 0.2097 | 0.2753 | 0.3115 | 0.3177 | 0.2985 | 0.2613 | 0.2140 | 0.1641 | 5 | 5 |
| | 3 | 0.0230 | 0.0617 | 0.1147 | 0.1730 | 0.2269 | 0.2679 | 0.2903 | 0.2918 | 0.2734 | 4 | 4 |
| | 4 | 0.0026 | 0.0109 | 0.0287 | 0.0577 | 0.0972 | 0.1442 | 0.1935 | 0.2388 | 0.2734 | 3 | 3 |
| | 5 | 0.0002 | 0.0012 | 0.0043 | 0.0115 | 0.0250 | 0.0466 | 0.0774 | 0.1172 | 0.1641 | 2 | 2 |
| | 6 | 0.0000 | 0.0001 | 0.0004 | 0.0013 | 0.0036 | 0.0084 | 0.0172 | 0.0320 | 0.0547 | 1 | 1 |
| | 7 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0.0006 | 0.0016 | 0.0037 | 0.0078 | 0 | 7 |
| 8 | 0 | 0.4305 | 0.2725 | 0.1678 | 0.1001 | 0.0576 | 0.0319 | 0.0168 | 0.0084 | 0.0039 | 8 | 8 |
| | 1 | 0.3826 | 0.3847 | 0.3355 | 0.2670 | 0.1977 | 0.1373 | 0.0896 | 0.0548 | 0.0312 | 7 | 7 |
| | 2 | 0.1488 | 0.2376 | 0.2936 | 0.3115 | 0.2965 | 0.2587 | 0.2090 | 0.1569 | 0.1094 | 6 | 6 |
| | 3 | 0.0331 | 0.0839 | 0.1468 | 0.2076 | 0.2541 | 0.2786 | 0.2787 | 0.2568 | 0.2188 | 5 | 5 |
| | 4 | 0.0046 | 0.0185 | 0.0459 | 0.0865 | 0.1361 | 0.1875 | 0.2322 | 0.2627 | 0.2734 | 4 | 4 |
| | 5 | 0.0004 | 0.0026 | 0.0092 | 0.0231 | 0.0467 | 0.0808 | 0.1239 | 0.1719 | 0.2188 | 3 | 3 |
| | 6 | 0.0000 | 0.0002 | 0.0011 | 0.0038 | 0.0100 | 0.0217 | 0.0413 | 0.0703 | 0.1094 | 2 | 2 |
| | 7 | 0.0000 | 0.0000 | 0.0001 | 0.0004 | 0.0012 | 0.0033 | 0.0079 | 0.0164 | 0.0312 | 1 | 1 |
| | 8 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0.0007 | 0.0017 | 0.0039 | 0 | 8 |
| 9 | 0 | 0.3874 | 0.2316 | 0.1342 | 0.0751 | 0.0404 | 0.0207 | 0.0101 | 0.0046 | 0.0020 | 9 | 9 |
| | 1 | 0.3874 | 0.3679 | 0.3020 | 0.2253 | 0.1556 | 0.1004 | 0.0605 | 0.0339 | 0.0176 | 8 | 8 |
| | 2 | 0.1722 | 0.2597 | 0.3020 | 0.3003 | 0.2668 | 0.2162 | 0.1612 | 0.1110 | 0.0703 | 7 | 7 |
| | 3 | 0.0446 | 0.1069 | 0.1762 | 0.2336 | 0.2668 | 0.2716 | 0.2508 | 0.2119 | 0.1641 | 6 | 6 |
| | 4 | 0.0074 | 0.0283 | 0.0661 | 0.1168 | 0.1715 | 0.2194 | 0.2508 | 0.2600 | 0.2461 | 5 | 5 |
| | 5 | 0.0008 | 0.0050 | 0.0155 | 0.0389 | 0.0735 | 0.1181 | 0.1672 | 0.2128 | 0.2461 | 4 | 4 |
| | 6 | 0.0001 | 0.0006 | 0.0028 | 0.0087 | 0.0210 | 0.0424 | 0.0743 | 0.1160 | 0.1641 | 3 | 3 |
| | 7 | 0.0000 | 0.0000 | 0.0003 | 0.0012 | 0.0039 | 0.0098 | 0.0212 | 0.0407 | 0.0703 | 2 | 2 |
| | 8 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0004 | 0.0013 | 0.0035 | 0.0083 | 0.0176 | 1 | 1 |
| | 9 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0003 | 0.0008 | 0.0020 | 0 | 9 |
| | | .90 | .85 | .80 | .75 | .70 | .65 | .60 | .55 | .50 | x | n |
| | | p | | | | | | | | | | |

Table B-5 Binomial probabilities (Continued)

| n | x | p | | | | | | | | | n |
|----|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|
| | | .10 | .15 | .20 | .25 | .30 | .35 | .40 | .45 | .50 | |
| 10 | 0 | 0.3487 | 0.1969 | 0.1074 | 0.0563 | 0.0282 | 0.0135 | 0.0060 | 0.0025 | 0.0010 | 10 |
| | 1 | 0.3874 | 0.3474 | 0.2684 | 0.1877 | 0.1211 | 0.0725 | 0.0403 | 0.0207 | 0.0098 | 9 |
| | 2 | 0.1937 | 0.2759 | 0.3020 | 0.2816 | 0.2335 | 0.1757 | 0.1209 | 0.0763 | 0.0439 | 8 |
| | 3 | 0.0574 | 0.1298 | 0.2013 | 0.2503 | 0.2668 | 0.2522 | 0.2150 | 0.1665 | 0.1172 | 7 |
| | 4 | 0.0112 | 0.0401 | 0.0881 | 0.1460 | 0.2001 | 0.2377 | 0.2508 | 0.2384 | 0.2051 | 6 |
| | 5 | 0.0015 | 0.0085 | 0.0264 | 0.0584 | 0.1029 | 0.1536 | 0.2007 | 0.2340 | 0.2461 | 5 |
| | 6 | 0.0001 | 0.0012 | 0.0055 | 0.0162 | 0.0368 | 0.0689 | 0.1115 | 0.1596 | 0.2051 | 4 |
| | 7 | 0.0000 | 0.0001 | 0.0008 | 0.0031 | 0.0099 | 0.0212 | 0.0425 | 0.0746 | 0.1172 | 3 |
| | 8 | 0.0000 | 0.0000 | 0.0001 | 0.0004 | 0.0014 | 0.0043 | 0.0106 | 0.0229 | 0.0439 | 2 |
| | 9 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0005 | 0.0016 | 0.0042 | 0.0098 | 1 |
| | 10 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0003 | 0.0010 | 0 |
| 12 | 0 | 0.2824 | 0.1422 | 0.0687 | 0.0317 | 0.0138 | 0.0057 | 0.0022 | 0.0008 | 0.0002 | 12 |
| | 1 | 0.3766 | 0.3012 | 0.2062 | 0.1267 | 0.0712 | 0.0368 | 0.0174 | 0.0075 | 0.0029 | 11 |
| | 2 | 0.2301 | 0.2924 | 0.2835 | 0.2323 | 0.1678 | 0.1088 | 0.0639 | 0.0339 | 0.0161 | 10 |
| | 3 | 0.0852 | 0.1720 | 0.2362 | 0.2581 | 0.2397 | 0.1954 | 0.1419 | 0.0923 | 0.0537 | 9 |
| | 4 | 0.0213 | 0.0683 | 0.1329 | 0.1936 | 0.2311 | 0.2367 | 0.2128 | 0.1700 | 0.1208 | 8 |
| | 5 | 0.0038 | 0.0193 | 0.0532 | 0.1032 | 0.1585 | 0.2039 | 0.2270 | 0.2225 | 0.1934 | 7 |
| | 6 | 0.0005 | 0.0040 | 0.0155 | 0.0401 | 0.0792 | 0.1281 | 0.1766 | 0.2124 | 0.2256 | 6 |
| | 7 | 0.0000 | 0.0006 | 0.0033 | 0.0115 | 0.0291 | 0.0591 | 0.1009 | 0.1489 | 0.1934 | 5 |
| | 8 | 0.0000 | 0.0001 | 0.0005 | 0.0024 | 0.0078 | 0.0199 | 0.0420 | 0.0762 | 0.1208 | 4 |
| | 9 | 0.0000 | 0.0000 | 0.0001 | 0.0004 | 0.0015 | 0.0048 | 0.0125 | 0.0277 | 0.0537 | 3 |
| | 10 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0008 | 0.0025 | 0.0068 | 0.0161 | 2 |
| | 11 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0003 | 0.0010 | 0.0029 | 1 |
| | 12 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0 |
| 15 | 0 | 0.2059 | 0.0874 | 0.0352 | 0.0134 | 0.0047 | 0.0016 | 0.0005 | 0.0001 | 0.0000 | 15 |
| | 1 | 0.3432 | 0.2312 | 0.1319 | 0.0668 | 0.0305 | 0.0126 | 0.0047 | 0.0016 | 0.0005 | 14 |
| | 2 | 0.2669 | 0.2856 | 0.2309 | 0.1559 | 0.0916 | 0.0476 | 0.0219 | 0.0090 | 0.0032 | 13 |
| | 3 | 0.1285 | 0.2184 | 0.2501 | 0.2252 | 0.1700 | 0.1110 | 0.0634 | 0.0318 | 0.0139 | 12 |
| | 4 | 0.0428 | 0.1156 | 0.1876 | 0.2252 | 0.2186 | 0.1792 | 0.1268 | 0.0780 | 0.0417 | 11 |
| | 5 | 0.0105 | 0.0449 | 0.1032 | 0.1651 | 0.2061 | 0.2123 | 0.1859 | 0.1404 | 0.0916 | 10 |
| | 6 | 0.0019 | 0.0132 | 0.0430 | 0.0917 | 0.1472 | 0.1906 | 0.2066 | 0.1914 | 0.1527 | 9 |
| | 7 | 0.0003 | 0.0030 | 0.0138 | 0.0393 | 0.0811 | 0.1319 | 0.1771 | 0.2013 | 0.1964 | 8 |
| | 8 | 0.0000 | 0.0005 | 0.0035 | 0.0131 | 0.0348 | 0.0710 | 0.1181 | 0.1647 | 0.1964 | 7 |
| | 9 | 0.0000 | 0.0001 | 0.0007 | 0.0034 | 0.0116 | 0.0298 | 0.0612 | 0.1048 | 0.1527 | 6 |
| | 10 | 0.0000 | 0.0000 | 0.0001 | 0.0007 | 0.0030 | 0.0096 | 0.0245 | 0.0515 | 0.0916 | 5 |
| | 11 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0006 | 0.0024 | 0.0074 | 0.0191 | 0.0417 | 4 |
| | 12 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0004 | 0.0016 | 0.0052 | 0.0139 | 3 |
| | 13 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0003 | 0.0010 | 0.0032 | 2 |
| | 14 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0005 | 1 |
| | 15 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0 |
| 20 | 0 | 0.1216 | 0.0388 | 0.0115 | 0.0032 | 0.0008 | 0.0002 | 0.0000 | 0.0000 | 0.0000 | 20 |
| | 1 | 0.2702 | 0.1368 | 0.0576 | 0.0211 | 0.0068 | 0.0020 | 0.0005 | 0.0001 | 0.0000 | 19 |
| | 2 | 0.2852 | 0.2293 | 0.1369 | 0.0669 | 0.0278 | 0.0100 | 0.0031 | 0.0008 | 0.0002 | 18 |
| | 3 | 0.1901 | 0.2428 | 0.2054 | 0.1339 | 0.0716 | 0.0323 | 0.0123 | 0.0040 | 0.0011 | 17 |
| | 4 | 0.0898 | 0.1821 | 0.2182 | 0.1897 | 0.1304 | 0.0738 | 0.0350 | 0.0139 | 0.0046 | 16 |
| | 5 | 0.0319 | 0.1028 | 0.1746 | 0.2023 | 0.1789 | 0.1272 | 0.0746 | 0.0365 | 0.0148 | 15 |
| | 6 | 0.0089 | 0.0454 | 0.1091 | 0.1686 | 0.1916 | 0.1712 | 0.1244 | 0.0746 | 0.0370 | 14 |
| | 7 | 0.0020 | 0.0160 | 0.0545 | 0.1124 | 0.1643 | 0.1844 | 0.1659 | 0.1221 | 0.0739 | 13 |
| | 8 | 0.0004 | 0.0046 | 0.0222 | 0.0609 | 0.1144 | 0.1614 | 0.1797 | 0.1623 | 0.1201 | 12 |
| | 9 | 0.0001 | 0.0011 | 0.0074 | 0.0271 | 0.0654 | 0.1158 | 0.1597 | 0.1771 | 0.1602 | 11 |
| | 10 | 0.0000 | 0.0002 | 0.0020 | 0.0099 | 0.0308 | 0.0686 | 0.1171 | 0.1593 | 0.1762 | 10 |
| | 11 | 0.0000 | 0.0000 | 0.0005 | 0.0030 | 0.0120 | 0.0336 | 0.0710 | 0.1185 | 0.1602 | 9 |
| | 12 | 0.0000 | 0.0000 | 0.0001 | 0.0008 | 0.0039 | 0.0136 | 0.0355 | 0.0727 | 0.1201 | 8 |
| | 13 | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0010 | 0.0045 | 0.0146 | 0.0366 | 0.0739 | 7 |
| | 14 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0012 | 0.0049 | 0.0150 | 0.0370 | 6 |
| | 15 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0003 | 0.0013 | 0.0049 | 0.0148 | 5 |
| | 16 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0003 | 0.0013 | 0.0046 | 4 |
| | 17 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0011 | 3 |
| | 18 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 2 |
| | 19 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1 |
| | 20 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0 |
| | | .90 | .85 | .80 | .75 | .70 | .65 | .60 | .55 | .50 | x |
| | | p | | | | | | | | | n |

EXAMPLE: For $n = 12$, $p = .25$ and $x = 3$, $f(3) = .2581$. For $n = 15$, $p = .55$ and $x = 10$, $f(10) = .1404$.

TEXT REFERENCE: Use of this table is discussed on pp. 137-139.

CUMULATIVE PROBABILITIES FOR BINOMIAL DISTRIBUTIONS

$$CP(x) = \sum_{k=0}^x \binom{n}{k} p^k q^{n-k}$$

| n = 5 | | | | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| x | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 |
| 0 | .59049 | .32768 | .16807 | .07776 | .03125 | .01024 | .00243 | .00032 | .00001 |
| 1 | .91854 | .73728 | .52822 | .33696 | .18750 | .08704 | .03078 | .00672 | .00046 |
| 2 | .99144 | .94208 | .83692 | .68256 | .50000 | .31744 | .16308 | .05792 | .00856 |
| 3 | .99954 | .99328 | .96922 | .91296 | .81250 | .66304 | .47178 | .26272 | .08146 |
| 4 | .99999 | .99968 | .99757 | .98976 | .96875 | .92224 | .83193 | .67232 | .40951 |
| 5 | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| n = 10 | | | | | | | | | |
| x | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 |
| 0 | .34868 | .10737 | .02825 | .00605 | .00098 | .00010 | .00001 | .00000 | .00000 |
| 1 | .73610 | .37581 | .14931 | .04636 | .01074 | .00168 | .00014 | .00000 | .00000 |
| 2 | .92981 | .67780 | .38278 | .16729 | .05469 | .01229 | .00159 | .00008 | .00000 |
| 3 | .98720 | .87913 | .64961 | .38228 | .17187 | .05476 | .01059 | .00086 | .00001 |
| 4 | .99836 | .96721 | .84973 | .63310 | .37695 | .16624 | .04735 | .00637 | .00015 |
| 5 | .99985 | .99363 | .95265 | .83376 | .62305 | .36690 | .15027 | .03279 | .00163 |
| 6 | .99999 | .99913 | .98941 | .94524 | .82812 | .61772 | .35039 | .12087 | .01280 |
| 7 | ***** | .99992 | .99841 | .98770 | .94531 | .83271 | .61722 | .32220 | .07019 |
| 8 | ***** | .99999 | .99985 | .99832 | .98926 | .95364 | .85069 | .62419 | .26390 |
| 9 | ***** | ***** | .99999 | .99989 | .99902 | .99395 | .97175 | .89262 | .65132 |
| 10 | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| n = 15 | | | | | | | | | |
| x | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 |
| 0 | .20589 | .03518 | .00475 | .00047 | .00003 | .00000 | .00000 | .00000 | .00000 |
| 1 | .54904 | .16713 | .03527 | .00517 | .00049 | .00003 | .00000 | .00000 | .00000 |
| 2 | .81594 | .39802 | .12683 | .02711 | .00369 | .00028 | .00001 | .00000 | .00000 |
| 3 | .94444 | .64816 | .29687 | .09050 | .01758 | .00193 | .00009 | .00000 | .00000 |
| 4 | .98728 | .83577 | .51549 | .21728 | .05923 | .00935 | .00067 | .00001 | .00000 |
| 5 | .99775 | .93895 | .72162 | .40321 | .15088 | .03383 | .00365 | .00011 | .00000 |
| 6 | .99969 | .98194 | .86885 | .60981 | .30362 | .09505 | .01524 | .00078 | .00000 |
| 7 | .99996 | .99576 | .94998 | .78689 | .50000 | .21310 | .05001 | .00424 | .00003 |
| 8 | ***** | .99921 | .98475 | .90495 | .69638 | .39019 | .13114 | .01806 | .00031 |
| 9 | ***** | .99989 | .99634 | .96616 | .84912 | .59678 | .27838 | .06105 | .00225 |
| 10 | ***** | .99999 | .99932 | .99065 | .94076 | .78272 | .48451 | .16423 | .01272 |
| 11 | ***** | ***** | .99991 | .99807 | .98242 | .90949 | .70313 | .35184 | .05556 |
| 12 | ***** | ***** | .99999 | .99972 | .99631 | .97288 | .87317 | .60197 | .18406 |
| 13 | ***** | ***** | ***** | .99997 | .99951 | .99482 | .96473 | .83287 | .45096 |
| 14 | ***** | ***** | ***** | ***** | .99997 | .99953 | .99525 | .96481 | .79411 |
| 15 | ***** | ***** | ***** | ***** | ***** | ***** | .99999 | ***** | ***** |

Asterisks mean 1.00000 throughout Appendix C

CUMULATIVE PROBABILITIES FOR BINOMIAL DISTRIBUTIONS

$n = 20$

| | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | .12158 | .01153 | .00080 | .00004 | .00000 | .00000 | .00000 | .00000 | .00000 |
| 1 | .39175 | .06918 | .00764 | .00052 | .00002 | .00000 | .00000 | .00000 | .00000 |
| 2 | .67693 | .20608 | .03548 | .00361 | .00020 | .00001 | .00000 | .00000 | .00000 |
| 3 | .86705 | .41145 | .10709 | .01596 | .00129 | .00005 | .00000 | .00000 | .00000 |
| 4 | .95682 | .62965 | .23751 | .05095 | .00591 | .00032 | .00001 | .00000 | .00000 |
| 5 | .98875 | .80421 | .41637 | .12560 | .02069 | .00161 | .00004 | .00000 | .00000 |
| 6 | .99761 | .91331 | .60801 | .25001 | .05766 | .00647 | .00026 | .00000 | .00000 |
| 7 | .99958 | .96786 | .77227 | .41589 | .13159 | .02103 | .00128 | .00002 | .00000 |
| 8 | .99994 | .99002 | .88667 | .59560 | .25172 | .05653 | .00514 | .00010 | .00000 |
| 9 | .99999 | .99740 | .95203 | .75533 | .41190 | .12752 | .01714 | .00056 | .00000 |
| 10 | ***** | .99943 | .98285 | .87248 | .58810 | .24466 | .04796 | .00259 | .00001 |
| 11 | ***** | .99990 | .99486 | .94347 | .74828 | .40440 | .11333 | .00998 | .00006 |
| 12 | ***** | .99998 | .99872 | .97897 | .86841 | .58410 | .22773 | .03214 | .00042 |
| 13 | ***** | ***** | .99973 | .99353 | .94234 | .74999 | .39199 | .08669 | .00239 |
| 14 | ***** | ***** | .99995 | .99838 | .97930 | .87440 | .58363 | .19579 | .01125 |
| 15 | ***** | ***** | .99999 | .99968 | .99409 | .94904 | .76249 | .37035 | .04317 |
| 16 | ***** | ***** | ***** | .99995 | .99871 | .98403 | .89291 | .58855 | .13295 |
| 17 | ***** | ***** | ***** | .99999 | .99980 | .99638 | .96451 | .79391 | .32307 |
| 18 | ***** | ***** | ***** | ***** | .99998 | .99947 | .99236 | .93082 | .60825 |
| 19 | ***** | ***** | ***** | ***** | ***** | .99996 | .99920 | .98847 | .87842 |
| 20 | ***** | ***** | ***** | ***** | ***** | ***** | .99999 | .99999 | .99999 |

$n = 25$

| x | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | .07179 | .00378 | .00013 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 |
| 1 | .27121 | .02739 | .00157 | .00005 | .00000 | .00000 | .00000 | .00000 | .00000 |
| 2 | .53709 | .09822 | .00896 | .00043 | .00001 | .00000 | .00000 | .00000 | .00000 |
| 3 | .76359 | .23339 | .03324 | .00237 | .00008 | .00000 | .00000 | .00000 | .00000 |
| 4 | .90200 | .42067 | .09047 | .00947 | .00046 | .00001 | .00000 | .00000 | .00000 |
| 5 | .96660 | .61669 | .19349 | .02936 | .00204 | .00005 | .00000 | .00000 | .00000 |
| 6 | .99052 | .78003 | .34065 | .07357 | .00732 | .00028 | .00000 | .00000 | .00000 |
| 7 | .99774 | .89088 | .51185 | .15355 | .02164 | .00121 | .00002 | .00000 | .00000 |
| 8 | .99954 | .95322 | .67693 | .27353 | .05388 | .00433 | .00010 | .00000 | .00000 |
| 9 | .99992 | .98267 | .81056 | .42462 | .11476 | .01317 | .00045 | .00000 | .00000 |
| 10 | .99999 | .99444 | .90220 | .58577 | .21218 | .03439 | .00178 | .00001 | .00000 |
| 11 | ***** | .99846 | .95575 | .73228 | .34502 | .07780 | .00599 | .00008 | .00000 |
| 12 | ***** | .99963 | .98252 | .84623 | .50000 | .15377 | .01747 | .00037 | .00000 |
| 13 | ***** | .99992 | .99400 | .92219 | .65498 | .26772 | .04425 | .00154 | .00000 |
| 14 | ***** | .99998 | .99822 | .96560 | .78762 | .41422 | .09780 | .00555 | .00001 |
| 15 | ***** | .99999 | .99954 | .98683 | .88524 | .57538 | .18943 | .01733 | .00008 |

CUMULATIVE PROBABILITIES FOR BINOMIAL DISTRIBUTIONS 683

| n = 25 | | | | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| x | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 |
| 16 | ***** | ***** | .99990 | .99567 | .94612 | .72646 | .32307 | .04677 | .00046 |
| 17 | ***** | ***** | .99998 | .99879 | .97835 | .84644 | .48815 | .10912 | .00226 |
| 18 | ***** | ***** | .99999 | .99971 | .99268 | .92643 | .65934 | .21996 | .00948 |
| 19 | ***** | ***** | .99999 | .99994 | .99796 | .97063 | .80650 | .38331 | .03340 |
| 20 | ***** | ***** | .99999 | .99999 | .99954 | .99052 | .90952 | .57932 | .09799 |
| 21 | ***** | ***** | .99999 | .99999 | .99992 | .99763 | .96675 | .76600 | .23641 |
| 22 | ***** | ***** | .99999 | .99999 | .99999 | .99956 | .99103 | .90177 | .46290 |
| 23 | ***** | ***** | .99999 | .99999 | .99999 | .99994 | .98842 | .97260 | .72879 |
| 24 | ***** | ***** | .99999 | .99999 | ***** | .99999 | .99986 | .99621 | .92820 |
| 25 | ***** | ***** | .99999 | .99999 | ***** | .99999 | .99999 | .99999 | .99999 |
| n = 30 | | | | | | | | | |
| x | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 |
| 0 | .04239 | .00124 | .00002 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 |
| 1 | .18369 | .01052 | .00031 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 |
| 2 | .41135 | .04418 | .00211 | .00005 | .00000 | .00000 | .00000 | .00000 | .00000 |
| 3 | .64744 | .12271 | .00932 | .00031 | .00000 | .00000 | .00000 | .00000 | .00000 |
| 4 | .82450 | .25523 | .03015 | .00151 | .00003 | .00000 | .00000 | .00000 | .00000 |
| 5 | .92681 | .42751 | .07659 | .00566 | .00016 | .00000 | .00000 | .00000 | .00000 |
| 6 | .97417 | .60697 | .15952 | .01718 | .00072 | .00001 | .00000 | .00000 | .00000 |
| 7 | .99221 | .76079 | .28138 | .04352 | .00261 | .00005 | .00000 | .00000 | .00000 |
| 8 | .99798 | .87135 | .43152 | .09401 | .00806 | .00022 | .00000 | .00000 | .00000 |
| 9 | .99954 | .93891 | .58881 | .17629 | .02139 | .00086 | .00001 | .00000 | .00000 |
| 10 | .99991 | .97438 | .73037 | .29147 | .04937 | .00285 | .00004 | .00000 | .00000 |
| 11 | .99998 | .99050 | .84067 | .43109 | .10024 | .00830 | .00016 | .00000 | .00000 |
| 12 | ***** | .99689 | .91552 | .57846 | .18080 | .02124 | .00063 | .00000 | .00000 |
| 13 | ***** | .99909 | .95994 | .71450 | .29233 | .04811 | .00212 | .00001 | .00000 |
| 14 | ***** | .99977 | .98306 | .82463 | .42777 | .09706 | .00637 | .00005 | .00000 |
| 15 | ***** | .99994 | .99362 | .90294 | .57223 | .17537 | .01694 | .00023 | .00000 |
| 16 | ***** | .99999 | .99787 | .95188 | .70767 | .28549 | .04005 | .00090 | .00000 |
| 17 | ***** | .99999 | .99937 | .97875 | .81920 | .42153 | .08447 | .00311 | .00000 |
| 18 | ***** | ***** | .99983 | .99169 | .89975 | .56891 | .15932 | .00949 | .00002 |
| 19 | ***** | ***** | .99996 | .99714 | .95063 | .70852 | .26963 | .02562 | .00009 |
| 20 | ***** | ***** | .99999 | .99914 | .97861 | .82371 | .41119 | .06109 | .00045 |
| 21 | ***** | ***** | .99999 | .99977 | .99193 | .90598 | .56648 | .12865 | .00202 |
| 22 | ***** | ***** | .99999 | .99994 | .99738 | .95647 | .71862 | .23921 | .00778 |
| 23 | ***** | ***** | .99999 | .99998 | .99928 | .98281 | .84047 | .39303 | .02583 |
| 24 | ***** | ***** | .99999 | .99999 | .99983 | .99433 | .92340 | .57248 | .07319 |
| 25 | ***** | ***** | .99999 | .99999 | .99997 | .99848 | .96984 | .74476 | .17549 |
| 26 | ***** | ***** | .99999 | .99999 | .99999 | .99968 | .99067 | .87728 | .35256 |
| 27 | ***** | ***** | .99999 | .99999 | ***** | .99994 | .99788 | .95581 | .58864 |
| 28 | ***** | ***** | .99999 | .99999 | ***** | .99999 | .99968 | .98947 | .81630 |
| 29 | ***** | ***** | .99999 | .99999 | ***** | .99999 | .99997 | .99875 | .95760 |
| 30 | ***** | ***** | .99999 | .99999 | ***** | .99999 | .99999 | .99999 | .99999 |

POISSON DISTRIBUTION
VALUES OF $e^{-\mu} \frac{\mu^x}{x!}$

| $\mu \backslash x$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1.0 |
|--------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | 90484 | .81873 | .74082 | .67032 | .60653 | .54881 | .49659 | .44933 | .40657 | .36788 |
| 1 | 09048 | .16375 | .22225 | .26813 | .30327 | .32929 | .34761 | .35946 | .36591 | .36788 |
| 2 | 00452 | .01637 | .03334 | .05363 | .07582 | .09879 | .12166 | .14379 | .16466 | .18394 |
| 3 | 00015 | .00109 | .00333 | .00715 | .01264 | .01976 | .02839 | .03834 | .04940 | .06131 |
| 4 | 00000 | .00005 | .00025 | .00072 | .00158 | .00296 | .00497 | .00767 | .01111 | .01533 |
| 5 | 00000 | 00000 | .00002 | .00006 | .00016 | .00036 | .00070 | .00123 | .00200 | .00307 |
| 6 | | 00000 | 00000 | .00000 | .00001 | .00004 | .00008 | .00016 | .00030 | .00051 |
| 7 | | | | | .00000 | .00000 | .00001 | .00002 | .00004 | .00007 |
| 8 | | | | | | .00000 | .00000 | .00000 | .00000 | .00001 |
| 9 | | | | | | | | .00000 | .00000 | .00000 |

| $\mu \backslash x$ | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.0 |
|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | .33287 | .30119 | .27253 | .24660 | .22313 | .20190 | .18268 | .16530 | .14957 | .13534 |
| 1 | .36616 | .36143 | .35429 | .34524 | .33470 | .32303 | .31056 | .29754 | .28418 | .27067 |
| 2 | .20139 | .21686 | .23029 | .24166 | .25102 | .25843 | .26398 | .26778 | .26997 | .27067 |
| 3 | .07384 | .08674 | .09979 | .11278 | .12551 | .13783 | .14959 | .16067 | .17098 | .18045 |
| 4 | .02031 | .02602 | .03243 | .03947 | .04707 | .05513 | .06357 | .07230 | .08122 | .09022 |
| 5 | .00447 | .00625 | .00843 | .01105 | .01412 | .01764 | .02162 | .02603 | .03086 | .03609 |
| 6 | .00082 | .00125 | .00183 | .00258 | .00353 | .00470 | .00612 | .00781 | .00977 | .01203 |
| 7 | .00013 | .00021 | .00034 | .00052 | .00076 | .00108 | .00149 | .00201 | .00265 | .00344 |
| 8 | .00002 | .00003 | .00006 | .00009 | .00014 | .00022 | .00032 | .00045 | .00063 | .00086 |
| 9 | .00000 | .00000 | .00001 | .00001 | .00002 | .00004 | .00006 | .00009 | .00013 | .00019 |
| 10 | .00000 | .00000 | .00000 | .00000 | .00000 | .00001 | .00001 | .00002 | .00003 | .00004 |
| 11 | | | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00001 |
| 12 | | | | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 |
| 13 | | | | | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 |

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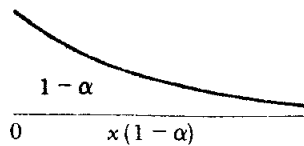
| $\mu \backslash x$ | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 | 3.0 |
|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | .12246 | .11080 | .10026 | .09072 | .08209 | .07427 | .06721 | .06081 | .05502 | .04979 |
| 1 | .25716 | .24377 | .23060 | .21772 | .20521 | .19311 | .18146 | .17027 | .15957 | .14936 |
| 2 | .27002 | .26814 | .26518 | .26127 | .25652 | .25105 | .24496 | .23838 | .23137 | .22404 |
| 3 | .18901 | .19664 | .20331 | .20901 | .21376 | .21757 | .22047 | .22248 | .22366 | .22404 |
| 4 | .09923 | .10815 | .11690 | .12541 | .13360 | .14142 | .14881 | .15574 | .16215 | .16803 |
| 5 | .04168 | .04759 | .05377 | .06020 | .06680 | .07354 | .08036 | .08721 | .09405 | .10082 |
| 6 | .01459 | .01745 | .02061 | .02408 | .02783 | .03187 | .03616 | .04070 | .04546 | .05041 |
| 7 | .00438 | .00548 | .00677 | .00826 | .00994 | .01184 | .01395 | .01628 | .01883 | .02160 |
| 8 | .00115 | .00151 | .00195 | .00248 | .00311 | .00385 | .00471 | .00570 | .00683 | .00810 |
| 9 | .00027 | .00037 | .00050 | .00066 | .00086 | .00111 | .00141 | .00177 | .00220 | .00270 |
| 10 | .00006 | .00008 | .00011 | .00016 | .00022 | .00029 | .00038 | .00050 | .00064 | .00081 |
| 11 | .00001 | .00002 | .00002 | .00003 | .00005 | .00007 | .00009 | .00013 | .00017 | .00022 |
| 12 | .00000 | .00000 | .00000 | .00001 | .00001 | .00001 | .00002 | .00003 | .00004 | .00006 |
| 13 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00001 | .00001 | .00001 |
| 14 | | | | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 |

| $\mu \backslash x$ | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 3.9 | 4.0 |
|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | .04505 | .04076 | .03688 | .03337 | .03020 | .02732 | .02472 | .02237 | .02024 | .01832 |
| 1 | .13965 | .13044 | .12172 | .11347 | .10569 | .09837 | .09148 | .08501 | .07894 | .07326 |
| 2 | .21646 | .20870 | .20083 | .19290 | .18496 | .17706 | .16923 | .16152 | .15394 | .14653 |
| 3 | .22368 | .22262 | .22091 | .21862 | .21579 | .21247 | .20872 | .20459 | .20012 | .19537 |
| 4 | .17335 | .17809 | .18225 | .18582 | .18881 | .19122 | .19307 | .19436 | .19512 | .19537 |
| 5 | .10748 | .11398 | .12029 | .12636 | .13217 | .13768 | .14287 | .14771 | .15219 | .15629 |
| 6 | .05553 | .06079 | .06616 | .07160 | .07710 | .08261 | .08810 | .09355 | .09892 | .10419 |
| 7 | .02459 | .02779 | .03119 | .03478 | .03855 | .04248 | .04657 | .05078 | .05511 | .05954 |
| 8 | .00953 | .01112 | .01287 | .01478 | .01686 | .01912 | .02154 | .02412 | .02687 | .02977 |
| 9 | .00328 | .00395 | .00472 | .00558 | .00656 | .00765 | .00885 | .01018 | .01164 | .01323 |
| 10 | .00102 | .00126 | .00156 | .00190 | .00230 | .00275 | .00328 | .00387 | .00454 | .00529 |
| 11 | .00029 | .00037 | .00047 | .00059 | .00073 | .00090 | .00110 | .00134 | .00161 | .00192 |
| 12 | .00007 | .00010 | .00013 | .00017 | .00021 | .00027 | .00034 | .00042 | .00052 | .00064 |
| 13 | .00002 | .00002 | .00003 | .00004 | .00006 | .00007 | .00010 | .00012 | .00016 | .00020 |
| 14 | .00000 | .00001 | .00001 | .00001 | .00001 | .00002 | .00003 | .00003 | .00004 | .00006 |
| 15 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00001 | .00001 | .00001 | .00002 |
| 16 | | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 |

| μ x | 4.1 | 4.2 | 4.3 | 4.4 | 4.5 | 4.6 | 4.7 | 4.8 | 4.9 | 5.0 |
|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | .01657 | .01500 | .01357 | .01228 | .01111 | .01005 | .00910 | .00823 | .00745 | .00674 |
| 1 | .06785 | .06298 | .05835 | .05402 | .04999 | .04624 | .04275 | .03950 | .03649 | .03369 |
| 2 | .13929 | .13226 | .12544 | .11885 | .11248 | .10635 | .10046 | .09481 | .08940 | .08422 |
| 3 | .19037 | .18517 | .17980 | .17431 | .16872 | .16307 | .15738 | .15169 | .14602 | .14037 |
| 4 | .19513 | .19442 | .19328 | .19174 | .18981 | .18753 | .18493 | .18203 | .17887 | .17747 |
| 5 | .16000 | .16331 | .16622 | .16873 | .17083 | .17252 | .17383 | .17475 | .17529 | .17547 |
| 6 | .10933 | .11432 | .11913 | .12373 | .12812 | .13227 | .13617 | .13980 | .14315 | .14622 |
| 7 | .06404 | .06859 | .07318 | .07777 | .08236 | .08692 | .09143 | .09586 | .10021 | .10444 |
| 8 | .03282 | .03601 | .03933 | .04278 | .04633 | .04998 | .05371 | .05752 | .06138 | .06528 |
| 9 | .01495 | .01680 | .01879 | .02091 | .02316 | .02554 | .02805 | .03068 | .03342 | .03627 |
| 10 | .00613 | .00706 | .00808 | .00920 | .01042 | .01175 | .01318 | .01472 | .01637 | .01813 |
| 11 | .00228 | .00269 | .00316 | .00368 | .00426 | .00491 | .00563 | .00642 | .00729 | .00824 |
| 12 | .00078 | .00094 | .00113 | .00135 | .00160 | .00188 | .00221 | .00257 | .00298 | .00343 |
| 13 | .00025 | .00030 | .00037 | .00046 | .00055 | .00067 | .00080 | .00095 | .00112 | .00132 |
| 14 | .00007 | .00009 | .00011 | .00014 | .00018 | .00022 | .00027 | .00033 | .00039 | .00047 |
| 15 | .00002 | .00003 | .00003 | .00004 | .00005 | .00007 | .00008 | .00010 | .00013 | .00016 |
| 16 | .00001 | .00001 | .00001 | .00001 | .00002 | .00002 | .00002 | .00003 | .00004 | .00005 |
| 17 | .00000 | .00000 | .00000 | .00000 | .00000 | .00001 | .00001 | .00001 | .00001 | .00001 |
| 18 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 |
| 19 | | | | | | .00000 | .00000 | .00000 | .00000 | .00000 |

| μ | 6.0 | 7.0 | 8.0 | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | .00248 | .00091 | .00034 | .00012 | .00005 | .00002 | .00001 | .00000 | .00000 | .00000 |
| 1 | .01487 | .00638 | .00268 | .00111 | .00045 | .00018 | .00007 | .00003 | .00001 | .00000 |
| 2 | .04462 | .02234 | .01073 | .00500 | .00227 | .00101 | .00044 | .00019 | .00008 | .00003 |
| 3 | .08924 | .05213 | .02873 | .01499 | .00757 | .00370 | .00177 | .00083 | .00038 | .00017 |
| 4 | .13385 | .09123 | .05725 | .03374 | .01892 | .01019 | .00531 | .00269 | .00133 | .00065 |
| 5 | .16062 | .12772 | .09160 | .06073 | .03783 | .02242 | .01274 | .00699 | .00373 | .00194 |
| 6 | .16062 | .14900 | .12214 | .09109 | .06306 | .04109 | .02548 | .01515 | .00870 | .00484 |
| 7 | .13768 | .14900 | .13959 | .11712 | .09008 | .06458 | .04368 | .02814 | .01739 | .01037 |
| 8 | .10326 | .13038 | .13959 | .13175 | .11260 | .08879 | .06552 | .04573 | .03044 | .01944 |
| 9 | .06884 | .10140 | .12408 | .13175 | .12511 | .10852 | .08736 | .06605 | .04734 | .03241 |
| 10 | .04130 | .07098 | .09926 | .11858 | .12511 | .11938 | .10484 | .08587 | .06628 | .04861 |
| 11 | .02253 | .04517 | .07219 | .09702 | .11374 | .11938 | .11437 | .10148 | .08436 | .06629 |
| 12 | .01126 | .02635 | .04813 | .07276 | .09478 | .10943 | .11437 | .10994 | .09842 | .08286 |
| 13 | .00520 | .01419 | .02962 | .05038 | .07291 | .09259 | .10557 | .10994 | .10599 | .09561 |
| 14 | .00223 | .00709 | .01692 | .03238 | .05208 | .07275 | .09049 | .10209 | .10599 | .10243 |
| 15 | .00089 | .00331 | .00903 | .01943 | .03472 | .05335 | .07239 | .08847 | .09892 | .10243 |
| 16 | .00033 | .00145 | .00451 | .01093 | .02170 | .03668 | .05429 | .07189 | .08656 | .09603 |
| 17 | .00012 | .00060 | .00212 | .00579 | .01276 | .02373 | .03832 | .05497 | .07128 | .08473 |
| 18 | .00004 | .00023 | .00094 | .00289 | .00709 | .01450 | .02555 | .03970 | .05544 | .07061 |
| 19 | .00001 | .00009 | .00040 | .00137 | .00373 | .00840 | .01614 | .02716 | .04085 | .05575 |
| 20 | .00000 | .00003 | .00016 | .00062 | .00187 | .00462 | .00968 | .01766 | .02860 | .04181 |
| 21 | .00000 | .00001 | .00006 | .00026 | .00089 | .00242 | .00553 | .01093 | .01906 | .02986 |
| 22 | .00000 | .00000 | .00002 | .00011 | .00040 | .00121 | .00302 | .00646 | .01213 | .02036 |
| 23 | | .00000 | .00001 | .00004 | .00018 | .00058 | .00157 | .00365 | .00738 | .01328 |
| 24 | | | .00000 | .00002 | .00007 | .00027 | .00079 | .00198 | .00431 | .00830 |
| 25 | | | .00000 | .00001 | .00003 | .00012 | .00038 | .00103 | .00241 | .00498 |
| 26 | | | | .00000 | .00001 | .00005 | .00017 | .00051 | .00130 | .00287 |
| 27 | | | | .00000 | .00000 | .00002 | .00008 | .00025 | .00067 | .00160 |
| 28 | | | | | .00000 | .00001 | .00003 | .00011 | .00034 | .00086 |
| 29 | | | | | | .00000 | .00001 | .00005 | .00016 | .00044 |
| 30 | | | | | | | .00000 | .00002 | .00008 | .00022 |
| 31 | | | | | | | .00000 | .00001 | .00003 | .00011 |
| 32 | | | | | | | .00000 | .00000 | .00001 | .00005 |
| 33 | | | | | | | | .00000 | .00001 | .00002 |
| 34 | | | | | | | | .00000 | .00000 | .00001 |
| 35 | | | | | | | | | .00000 | .00000 |

Table B-7 Cumulative probabilities of the exponential probability distribution



Entry is area $1 - \alpha$ under the exponential probability curve from 0 to $x(1 - \alpha)$

| λx | .00 | .01 | .02 | .03 | .04 | .05 | .06 | .07 | .08 | .09 |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.0 | 0.0000 | 0.0100 | 0.0198 | 0.0296 | 0.0392 | 0.0488 | 0.0582 | 0.0676 | 0.0769 | 0.0861 |
| 0.1 | 0.0952 | 0.1042 | 0.1131 | 0.1219 | 0.1306 | 0.1393 | 0.1479 | 0.1563 | 0.1647 | 0.1730 |
| 0.2 | 0.1813 | 0.1894 | 0.1975 | 0.2055 | 0.2134 | 0.2212 | 0.2289 | 0.2366 | 0.2442 | 0.2517 |
| 0.3 | 0.2592 | 0.2666 | 0.2739 | 0.2811 | 0.2882 | 0.2953 | 0.3023 | 0.3093 | 0.3161 | 0.3229 |
| 0.4 | 0.3297 | 0.3363 | 0.3430 | 0.3495 | 0.3560 | 0.3624 | 0.3687 | 0.3750 | 0.3812 | 0.3874 |
| 0.5 | 0.3935 | 0.3995 | 0.4055 | 0.4114 | 0.4173 | 0.4231 | 0.4288 | 0.4345 | 0.4401 | 0.4457 |
| 0.6 | 0.4512 | 0.4566 | 0.4621 | 0.4674 | 0.4727 | 0.4780 | 0.4831 | 0.4883 | 0.4934 | 0.4984 |
| 0.7 | 0.5034 | 0.5084 | 0.5132 | 0.5181 | 0.5229 | 0.5276 | 0.5323 | 0.5370 | 0.5416 | 0.5462 |
| 0.8 | 0.5507 | 0.5551 | 0.5596 | 0.5640 | 0.5683 | 0.5726 | 0.5768 | 0.5810 | 0.5852 | 0.5893 |
| 0.9 | 0.5934 | 0.5975 | 0.6015 | 0.6054 | 0.6094 | 0.6133 | 0.6171 | 0.6209 | 0.6247 | 0.6284 |
| 1.0 | 0.6321 | 0.6358 | 0.6394 | 0.6430 | 0.6465 | 0.6501 | 0.6535 | 0.6570 | 0.6604 | 0.6638 |
| 1.1 | 0.6671 | 0.6704 | 0.6737 | 0.6770 | 0.6802 | 0.6834 | 0.6865 | 0.6896 | 0.6927 | 0.6958 |
| 1.2 | 0.6988 | 0.7018 | 0.7048 | 0.7077 | 0.7106 | 0.7135 | 0.7163 | 0.7192 | 0.7220 | 0.7247 |
| 1.3 | 0.7275 | 0.7302 | 0.7329 | 0.7355 | 0.7382 | 0.7408 | 0.7433 | 0.7459 | 0.7484 | 0.7509 |
| 1.4 | 0.7534 | 0.7559 | 0.7583 | 0.7607 | 0.7631 | 0.7654 | 0.7678 | 0.7701 | 0.7724 | 0.7746 |
| 1.5 | 0.7769 | 0.7791 | 0.7813 | 0.7835 | 0.7856 | 0.7878 | 0.7899 | 0.7920 | 0.7940 | 0.7961 |
| 1.6 | 0.7981 | 0.8001 | 0.8021 | 0.8041 | 0.8060 | 0.8080 | 0.8099 | 0.8118 | 0.8136 | 0.8155 |
| 1.7 | 0.8173 | 0.8191 | 0.8209 | 0.8227 | 0.8245 | 0.8262 | 0.8280 | 0.8297 | 0.8314 | 0.8330 |
| 1.8 | 0.8347 | 0.8363 | 0.8380 | 0.8396 | 0.8412 | 0.8428 | 0.8443 | 0.8459 | 0.8474 | 0.8489 |
| 1.9 | 0.8504 | 0.8519 | 0.8534 | 0.8549 | 0.8563 | 0.8577 | 0.8591 | 0.8605 | 0.8619 | 0.8633 |
| 2.0 | 0.8647 | 0.8660 | 0.8673 | 0.8687 | 0.8700 | 0.8713 | 0.8725 | 0.8738 | 0.8751 | 0.8763 |
| 2.1 | 0.8775 | 0.8788 | 0.8800 | 0.8812 | 0.8823 | 0.8835 | 0.8847 | 0.8858 | 0.8870 | 0.8881 |
| 2.2 | 0.8892 | 0.8903 | 0.8914 | 0.8925 | 0.8935 | 0.8946 | 0.8956 | 0.8967 | 0.8977 | 0.8987 |
| 2.3 | 0.8997 | 0.9007 | 0.9017 | 0.9027 | 0.9037 | 0.9046 | 0.9056 | 0.9065 | 0.9074 | 0.9084 |
| 2.4 | 0.9093 | 0.9102 | 0.9111 | 0.9120 | 0.9128 | 0.9137 | 0.9146 | 0.9154 | 0.9163 | 0.9171 |
| 2.5 | 0.9179 | 0.9187 | 0.9195 | 0.9203 | 0.9211 | 0.9219 | 0.9227 | 0.9235 | 0.9242 | 0.9250 |
| 2.6 | 0.9257 | 0.9265 | 0.9272 | 0.9279 | 0.9286 | 0.9293 | 0.9301 | 0.9307 | 0.9314 | 0.9321 |
| 2.7 | 0.9328 | 0.9335 | 0.9341 | 0.9348 | 0.9354 | 0.9361 | 0.9367 | 0.9373 | 0.9380 | 0.9386 |
| 2.8 | 0.9392 | 0.9398 | 0.9404 | 0.9410 | 0.9416 | 0.9422 | 0.9427 | 0.9433 | 0.9439 | 0.9444 |
| 2.9 | 0.9450 | 0.9455 | 0.9461 | 0.9466 | 0.9471 | 0.9477 | 0.9482 | 0.9487 | 0.9492 | 0.9497 |
| 3.0 | 0.9502 | 0.9507 | 0.9512 | 0.9517 | 0.9522 | 0.9526 | 0.9531 | 0.9536 | 0.9540 | 0.9545 |
| 3.1 | 0.9550 | 0.9554 | 0.9558 | 0.9563 | 0.9567 | 0.9571 | 0.9576 | 0.9580 | 0.9584 | 0.9588 |
| 3.2 | 0.9592 | 0.9596 | 0.9600 | 0.9604 | 0.9608 | 0.9612 | 0.9616 | 0.9620 | 0.9624 | 0.9627 |
| 3.3 | 0.9631 | 0.9635 | 0.9638 | 0.9642 | 0.9646 | 0.9649 | 0.9653 | 0.9656 | 0.9660 | 0.9663 |
| 3.4 | 0.9666 | 0.9670 | 0.9673 | 0.9676 | 0.9679 | 0.9683 | 0.9686 | 0.9689 | 0.9692 | 0.9695 |
| 3.5 | 0.9698 | 0.9701 | 0.9704 | 0.9707 | 0.9710 | 0.9713 | 0.9716 | 0.9718 | 0.9721 | 0.9724 |
| 3.6 | 0.9727 | 0.9729 | 0.9732 | 0.9735 | 0.9737 | 0.9740 | 0.9743 | 0.9745 | 0.9748 | 0.9750 |
| 3.7 | 0.9753 | 0.9755 | 0.9758 | 0.9760 | 0.9762 | 0.9765 | 0.9767 | 0.9769 | 0.9772 | 0.9774 |
| 3.8 | 0.9776 | 0.9779 | 0.9781 | 0.9783 | 0.9785 | 0.9787 | 0.9789 | 0.9791 | 0.9793 | 0.9796 |
| 3.9 | 0.9798 | 0.9800 | 0.9802 | 0.9804 | 0.9805 | 0.9807 | 0.9809 | 0.9811 | 0.9813 | 0.9815 |

| λx | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 4.0 | 0.9817 | 0.9834 | 0.9850 | 0.9864 | 0.9877 | 0.9889 | 0.9899 | 0.9909 | 0.9918 | 0.9926 |
| 5.0 | 0.9933 | 0.9939 | 0.9945 | 0.9950 | 0.9955 | 0.9959 | 0.9963 | 0.9967 | 0.9970 | 0.9973 |
| 6.0 | 0.9975 | 0.9976 | 0.9980 | 0.9982 | 0.9983 | 0.9985 | 0.9986 | 0.9988 | 0.9989 | 0.9990 |
| 7.0 | 0.9991 | 0.9992 | 0.9993 | 0.9993 | 0.9994 | 0.9994 | 0.9995 | 0.9995 | 0.9996 | 0.9996 |
| 8.0 | 0.9997 | 0.9997 | 0.9997 | 0.9998 | 0.9998 | 0.9998 | 0.9998 | 0.9998 | 0.9998 | 0.9999 |
| 9.0 | 0.9999 | 0.9999 | 0.9999 | 0.9999 | 0.9999 | 0.9999 | 0.9999 | 0.9999 | 0.9999 | 0.9999 |

EXAMPLE: For $\lambda = .6$ and $x = 1.3$, $\lambda x = .78$ so $P(X \leq 1.3; \lambda = .6) = .4116$.

TEXT REFERENCE: Use of this table is discussed on pp. 156-157.

Table B-8 Table of random digits

| <i>Line</i> | <i>(1)-(5)</i> | <i>(6)-(10)</i> | <i>(11)-(15)</i> | <i>(16)-(20)</i> | <i>(21)-(25)</i> | <i>(26)-(30)</i> | <i>(31)-(35)</i> |
|-------------|----------------|-----------------|------------------|------------------|------------------|------------------|------------------|
| 101 | 13284 | 16834 | 74151 | 92027 | 24670 | 36665 | 00770 |
| 102 | 21224 | 00370 | 30420 | 03883 | 94648 | 89428 | 41583 |
| 103 | 99052 | 47887 | 81085 | 64933 | 66279 | 80432 | 65793 |
| 104 | 00199 | 50993 | 98603 | 38452 | 87890 | 94624 | 69721 |
| 105 | 60578 | 06483 | 28733 | 37867 | 07936 | 98710 | 98539 |
| 106 | 91240 | 18312 | 17441 | 01929 | 18163 | 69201 | 31211 |
| 107 | 97458 | 14229 | 12063 | 59611 | 32249 | 90466 | 33216 |
| 108 | 35249 | 38646 | 34475 | 72417 | 60514 | 69257 | 12489 |
| 109 | 38980 | 46600 | 11759 | 11900 | 46743 | 27860 | 77940 |
| 110 | 10750 | 52745 | 38749 | 87365 | 58959 | 53731 | 89295 |
| 111 | 36247 | 27850 | 73958 | 20673 | 37800 | 63835 | 71051 |
| 112 | 70994 | 66986 | 99744 | 72438 | 01174 | 42159 | 11392 |
| 113 | 99638 | 94702 | 11463 | 18148 | 81386 | 80431 | 90628 |
| 114 | 72055 | 15774 | 43857 | 99805 | 10419 | 76939 | 25993 |
| 115 | 24038 | 65541 | 85788 | 55835 | 38835 | 59399 | 13790 |
| 116 | 74976 | 14631 | 35908 | 28221 | 39470 | 91548 | 12854 |
| 117 | 35553 | 71628 | 70189 | 26436 | 63407 | 91178 | 90348 |
| 118 | 35676 | 12797 | 51434 | 82976 | 42010 | 26344 | 92920 |
| 119 | 74815 | 67523 | 72985 | 23183 | 02446 | 63594 | 98924 |
| 120 | 45246 | 88048 | 65173 | 50989 | 91060 | 89894 | 36036 |
| 121 | 76509 | 47069 | 86378 | 41797 | 11910 | 49672 | 88575 |
| 122 | 19689 | 90332 | 04315 | 21358 | 97248 | 11188 | 39062 |
| 123 | 42751 | 35318 | 97513 | 61537 | 54955 | 08159 | 00337 |
| 124 | 11946 | 22681 | 45045 | 13964 | 57517 | 59419 | 58045 |
| 125 | 96518 | 48688 | 20996 | 11090 | 48396 | 57177 | 83867 |
| 126 | 35726 | 58643 | 76869 | 84622 | 39098 | 36083 | 72505 |
| 127 | 39737 | 42750 | 48968 | 70536 | 84864 | 64952 | 38404 |
| 128 | 97025 | 66492 | 56177 | 04049 | 80312 | 48028 | 26408 |
| 129 | 62814 | 08075 | 09788 | 56350 | 76787 | 51591 | 54509 |
| 130 | 25578 | 22950 | 15227 | 83291 | 41737 | 59599 | 96191 |
| 131 | 68763 | 69576 | 88991 | 49662 | 46704 | 63362 | 56625 |
| 132 | 17900 | 00813 | 64361 | 60725 | 88974 | 61005 | 99709 |
| 133 | 71944 | 60227 | 63551 | 71109 | 05624 | 43836 | 58254 |
| 134 | 54684 | 93691 | 85132 | 64399 | 29182 | 44324 | 14491 |
| 135 | 25946 | 27623 | 11258 | 65204 | 52832 | 50880 | 22273 |
| 136 | 01353 | 39318 | 44961 | 44972 | 91766 | 90262 | 56073 |
| 137 | 99083 | 88191 | 27662 | 99113 | 57174 | 35571 | 99884 |
| 138 | 52021 | 45406 | 37945 | 75234 | 24327 | 86978 | 22644 |
| 139 | 78755 | 47744 | 43776 | 83098 | 03225 | 14281 | 83637 |
| 140 | 25282 | 69106 | 59180 | 16257 | 22810 | 43609 | 12224 |
| 141 | 11959 | 94202 | 02743 | 86847 | 79725 | 51811 | 12998 |
| 142 | 11644 | 13792 | 98190 | 01424 | 30078 | 28197 | 55583 |
| 143 | 06307 | 97912 | 68110 | 59812 | 95448 | 43244 | 31262 |
| 144 | 76285 | 75714 | 89585 | 99296 | 52640 | 46518 | 55486 |
| 145 | 55322 | 07598 | 39600 | 60866 | 63007 | 20007 | 66819 |
| 146 | 78017 | 90928 | 90220 | 92503 | 83375 | 26986 | 74399 |
| 147 | 44768 | 43342 | 20696 | 26331 | 43140 | 69744 | 82928 |
| 148 | 25100 | 19336 | 14605 | 86603 | 51680 | 97678 | 24261 |
| 149 | 83612 | 46623 | 62876 | 85197 | 07824 | 91392 | 58317 |
| 150 | 41347 | 81666 | 82961 | 60413 | 71020 | 83658 | 02415 |

SOURCE: Excerpt from *Table of 195,000 Random Decimal Digits*, Interstate Commerce Commission, Bureau of Transport Economics and Statistics, May 1949.

TEXT REFERENCE: This table is discussed on pp. 185-187.



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