





**TABLE B t Distribution Critical Values**

| df       | Confidence Level       |            |            |            |            |            |
|----------|------------------------|------------|------------|------------|------------|------------|
|          | 80%                    | 90%        | 95%        | 98%        | 99%        | 99.8%      |
|          | Right-Tail Probability |            |            |            |            |            |
|          | $t_{.100}$             | $t_{.050}$ | $t_{.025}$ | $t_{.010}$ | $t_{.005}$ | $t_{.001}$ |
| 1        | 3.078                  | 6.314      | 12.706     | 31.821     | 63.656     | 318.289    |
| 2        | 1.886                  | 2.920      | 4.303      | 6.965      | 9.925      | 22.328     |
| 3        | 1.638                  | 2.353      | 3.182      | 4.541      | 5.841      | 10.214     |
| 4        | 1.533                  | 2.132      | 2.776      | 3.747      | 4.604      | 7.173      |
| 5        | 1.476                  | 2.015      | 2.571      | 3.365      | 4.032      | 5.894      |
| 6        | 1.440                  | 1.943      | 2.447      | 3.143      | 3.707      | 5.208      |
| 7        | 1.415                  | 1.895      | 2.365      | 2.998      | 3.499      | 4.785      |
| 8        | 1.397                  | 1.860      | 2.306      | 2.896      | 3.355      | 4.501      |
| 9        | 1.383                  | 1.833      | 2.262      | 2.821      | 3.250      | 4.297      |
| 10       | 1.372                  | 1.812      | 2.228      | 2.764      | 3.169      | 4.144      |
| 11       | 1.363                  | 1.796      | 2.201      | 2.718      | 3.106      | 4.025      |
| 12       | 1.356                  | 1.782      | 2.179      | 2.681      | 3.055      | 3.930      |
| 13       | 1.350                  | 1.771      | 2.160      | 2.650      | 3.012      | 3.852      |
| 14       | 1.345                  | 1.761      | 2.145      | 2.624      | 2.977      | 3.787      |
| 15       | 1.341                  | 1.753      | 2.131      | 2.602      | 2.947      | 3.733      |
| 16       | 1.337                  | 1.746      | 2.120      | 2.583      | 2.921      | 3.686      |
| 17       | 1.333                  | 1.740      | 2.110      | 2.567      | 2.898      | 3.646      |
| 18       | 1.330                  | 1.734      | 2.101      | 2.552      | 2.878      | 3.611      |
| 19       | 1.328                  | 1.729      | 2.093      | 2.539      | 2.861      | 3.579      |
| 20       | 1.325                  | 1.725      | 2.086      | 2.528      | 2.845      | 3.552      |
| 21       | 1.323                  | 1.721      | 2.080      | 2.518      | 2.831      | 3.527      |
| 22       | 1.321                  | 1.717      | 2.074      | 2.508      | 2.819      | 3.505      |
| 23       | 1.319                  | 1.714      | 2.069      | 2.500      | 2.807      | 3.485      |
| 24       | 1.318                  | 1.711      | 2.064      | 2.492      | 2.797      | 3.467      |
| 25       | 1.316                  | 1.708      | 2.060      | 2.485      | 2.787      | 3.450      |
| 26       | 1.315                  | 1.706      | 2.056      | 2.479      | 2.779      | 3.435      |
| 27       | 1.314                  | 1.703      | 2.052      | 2.473      | 2.771      | 3.421      |
| 28       | 1.313                  | 1.701      | 2.048      | 2.467      | 2.763      | 3.408      |
| 29       | 1.311                  | 1.699      | 2.045      | 2.462      | 2.756      | 3.396      |
| 30       | 1.310                  | 1.697      | 2.042      | 2.457      | 2.750      | 3.385      |
| 40       | 1.303                  | 1.684      | 2.021      | 2.423      | 2.704      | 3.307      |
| 50       | 1.299                  | 1.676      | 2.009      | 2.403      | 2.678      | 3.261      |
| 60       | 1.296                  | 1.671      | 2.000      | 2.390      | 2.660      | 3.232      |
| 80       | 1.292                  | 1.664      | 1.990      | 2.374      | 2.639      | 3.195      |
| 100      | 1.290                  | 1.660      | 1.984      | 2.364      | 2.626      | 3.174      |
| $\infty$ | 1.282                  | 1.645      | 1.960      | 2.326      | 2.576      | 3.091      |

**TABLE E Table of Random Numbers**

| Line/Col. | (1)   | (2)   | (3)   | (4)   | (5)   | (6)   | (7)   | (8)   |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1         | 10480 | 15011 | 01536 | 02011 | 81647 | 91646 | 69179 | 14194 |
| 2         | 22368 | 46573 | 25595 | 85393 | 30995 | 89198 | 27982 | 53402 |
| 3         | 24130 | 48360 | 22527 | 97265 | 76393 | 64809 | 15179 | 24830 |
| 4         | 42167 | 93093 | 06243 | 61680 | 07856 | 16376 | 39440 | 53537 |
| 5         | 37570 | 39975 | 81837 | 16656 | 06121 | 91782 | 60468 | 81305 |
| 6         | 77921 | 06907 | 11008 | 42751 | 27756 | 53498 | 18602 | 70659 |
| 7         | 99562 | 72905 | 56420 | 69994 | 98872 | 31016 | 71194 | 18738 |
| 8         | 96301 | 91977 | 05463 | 07972 | 18876 | 20922 | 94595 | 56869 |
| 9         | 89579 | 14342 | 63661 | 10281 | 17453 | 18103 | 57740 | 84378 |
| 10        | 85475 | 36857 | 53342 | 53988 | 53060 | 59533 | 38867 | 62300 |
| 11        | 28918 | 69578 | 88231 | 33276 | 70997 | 79936 | 56865 | 05859 |
| 12        | 63553 | 40961 | 48235 | 03427 | 49626 | 69445 | 18663 | 72695 |
| 13        | 09429 | 93969 | 52636 | 92737 | 88974 | 33488 | 36320 | 17617 |
| 14        | 10365 | 61129 | 87529 | 85689 | 48237 | 52267 | 67689 | 93394 |
| 15        | 07119 | 97336 | 71048 | 08178 | 77233 | 13916 | 47564 | 81056 |
| 16        | 51085 | 12765 | 51821 | 51259 | 77452 | 16308 | 60756 | 92144 |
| 17        | 02368 | 21382 | 52404 | 60268 | 89368 | 19885 | 55322 | 44819 |
| 18        | 01011 | 54092 | 33362 | 94904 | 31273 | 04146 | 18594 | 29852 |
| 19        | 52162 | 53916 | 46369 | 58586 | 23216 | 14513 | 83149 | 98736 |
| 20        | 07056 | 97628 | 33787 | 09998 | 42698 | 06691 | 76988 | 13602 |

| $\alpha$     | 0.10  | 0.05  | 0.025 | 0.01  | 0.005 | 0.001 |
|--------------|-------|-------|-------|-------|-------|-------|
| $z_{\alpha}$ | 1.282 | 1.645 | 1.960 | 2.326 | 2.576 | 3.091 |