

Critical Values of the Spearman's Ranked Correlation Coefficient (r_s)

Taken from Zar, 1984 Table B.19

| $\alpha(2)$: $\alpha(1)$: | 0.50 0.25 | 0.20 0.10 | 0.10 0.05 | 0.05 0.025 | 0.02 0.01 | 0.01 0.005 | 0.005 0.0025 | 0.002 0.001 | 0.001 0.0005 |
|--------------------------------|--------------|--------------|--------------|---------------|--------------|---------------|-----------------|----------------|-----------------|
| 4 | 0.600 | 1.000 | 1.000 | | | | | | |
| 5 | 0.500 | 0.800 | 0.900 | 1.000 | 1.000 | | | | |
| 6 | 0.371 | 0.657 | 0.829 | 0.886 | 0.943 | 1.000 | 1.000 | | |
| 7 | 0.321 | 0.571 | 0.714 | 0.786 | 0.833 | 0.929 | 0.964 | 1.000 | 1.000 |
| 8 | 0.310 | 0.524 | 0.643 | 0.738 | 0.833 | 0.881 | 0.905 | 0.952 | 0.976 |
| 9 | 0.267 | 0.483 | 0.600 | 0.700 | 0.783 | 0.833 | 0.867 | 0.917 | 0.933 |
| 10 | 0.248 | 0.455 | 0.564 | 0.648 | 0.745 | 0.794 | 0.830 | 0.879 | 0.903 |
| 11 | 0.236 | 0.427 | 0.536 | 0.618 | 0.709 | 0.755 | 0.800 | 0.845 | 0.873 |
| 12 | 0.217 | 0.406 | 0.503 | 0.587 | 0.678 | 0.727 | 0.769 | 0.818 | 0.846 |
| 13 | 0.209 | 0.385 | 0.484 | 0.560 | 0.648 | 0.703 | 0.747 | 0.791 | 0.824 |
| 14 | 0.200 | 0.367 | 0.464 | 0.538 | 0.626 | 0.679 | 0.723 | 0.771 | 0.802 |
| 15 | 0.189 | 0.354 | 0.446 | 0.521 | 0.604 | 0.654 | 0.700 | 0.750 | 0.779 |
| 16 | 0.182 | 0.341 | 0.429 | 0.503 | 0.582 | 0.635 | 0.679 | 0.729 | 0.762 |
| 17 | 0.176 | 0.328 | 0.414 | 0.485 | 0.566 | 0.615 | 0.662 | 0.713 | 0.748 |
| 18 | 0.170 | 0.317 | 0.401 | 0.472 | 0.550 | 0.600 | 0.643 | 0.695 | 0.728 |
| 19 | 0.165 | 0.309 | 0.391 | 0.460 | 0.535 | 0.584 | 0.628 | 0.677 | 0.712 |
| 20 | 0.161 | 0.299 | 0.380 | 0.447 | 0.520 | 0.570 | 0.612 | 0.662 | 0.696 |
| 21 | 0.156 | 0.292 | 0.370 | 0.435 | 0.508 | 0.556 | 0.599 | 0.648 | 0.681 |
| 22 | 0.152 | 0.284 | 0.361 | 0.425 | 0.496 | 0.544 | 0.586 | 0.634 | 0.667 |
| 23 | 0.148 | 0.278 | 0.353 | 0.415 | 0.486 | 0.532 | 0.573 | 0.622 | 0.654 |
| 24 | 0.144 | 0.271 | 0.344 | 0.406 | 0.476 | 0.521 | 0.562 | 0.610 | 0.642 |
| 25 | 0.142 | 0.265 | 0.337 | 0.398 | 0.466 | 0.511 | 0.551 | 0.598 | 0.630 |
| 26 | 0.138 | 0.259 | 0.331 | 0.390 | 0.457 | 0.501 | 0.541 | 0.587 | 0.619 |
| 27 | 0.136 | 0.255 | 0.324 | 0.382 | 0.448 | 0.491 | 0.531 | 0.577 | 0.608 |
| 28 | 0.133 | 0.250 | 0.317 | 0.375 | 0.440 | 0.483 | 0.522 | 0.567 | 0.598 |
| 29 | 0.130 | 0.245 | 0.312 | 0.368 | 0.433 | 0.475 | 0.513 | 0.558 | 0.589 |
| 30 | 0.128 | 0.240 | 0.306 | 0.362 | 0.425 | 0.467 | 0.504 | 0.549 | 0.580 |
| 31 | 0.126 | 0.236 | 0.301 | 0.356 | 0.418 | 0.459 | 0.496 | 0.541 | 0.571 |
| 32 | 0.124 | 0.232 | 0.296 | 0.350 | 0.412 | 0.452 | 0.489 | 0.533 | 0.563 |
| 33 | 0.121 | 0.229 | 0.291 | 0.345 | 0.405 | 0.446 | 0.482 | 0.525 | 0.554 |
| 34 | 0.120 | 0.225 | 0.287 | 0.340 | 0.399 | 0.439 | 0.475 | 0.517 | 0.547 |
| 35 | 0.118 | 0.222 | 0.283 | 0.335 | 0.394 | 0.433 | 0.468 | 0.510 | 0.539 |
| 36 | 0.116 | 0.219 | 0.279 | 0.330 | 0.388 | 0.427 | 0.462 | 0.504 | 0.533 |
| 37 | 0.114 | 0.216 | 0.275 | 0.325 | 0.383 | 0.421 | 0.456 | 0.497 | 0.526 |
| 38 | 0.113 | 0.212 | 0.271 | 0.321 | 0.378 | 0.415 | 0.450 | 0.491 | 0.519 |
| 39 | 0.111 | 0.210 | 0.267 | 0.317 | 0.373 | 0.410 | 0.444 | 0.485 | 0.513 |
| 40 | 0.110 | 0.207 | 0.264 | 0.313 | 0.368 | 0.405 | 0.439 | 0.479 | 0.507 |
| 41 | 0.108 | 0.204 | 0.261 | 0.309 | 0.364 | 0.400 | 0.433 | 0.473 | 0.501 |
| 42 | 0.107 | 0.202 | 0.257 | 0.305 | 0.359 | 0.395 | 0.428 | 0.468 | 0.495 |
| 43 | 0.105 | 0.199 | 0.254 | 0.301 | 0.355 | 0.391 | 0.423 | 0.463 | 0.490 |
| 44 | 0.104 | 0.197 | 0.251 | 0.298 | 0.351 | 0.386 | 0.419 | 0.458 | 0.484 |
| 45 | 0.103 | 0.194 | 0.248 | 0.294 | 0.347 | 0.382 | 0.414 | 0.453 | 0.479 |
| 46 | 0.102 | 0.192 | 0.246 | 0.291 | 0.343 | 0.378 | 0.410 | 0.448 | 0.474 |
| 47 | 0.101 | 0.190 | 0.243 | 0.288 | 0.340 | 0.374 | 0.405 | 0.443 | 0.469 |
| 48 | 0.100 | 0.188 | 0.240 | 0.285 | 0.336 | 0.370 | 0.401 | 0.439 | 0.465 |
| 49 | 0.098 | 0.186 | 0.238 | 0.282 | 0.333 | 0.366 | 0.397 | 0.434 | 0.460 |
| 50 | 0.097 | 0.184 | 0.235 | 0.279 | 0.329 | 0.363 | 0.393 | 0.430 | 0.456 |

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|--------------------------------|--------------|--------------|--------------|---------------|--------------|---------------|-----------------|----------------|-----------------|
| 51 | 0.096 | 0.182 | 0.233 | 0.276 | 0.326 | 0.359 | 0.390 | 0.426 | 0.451 |
| 52 | 0.095 | 0.180 | 0.231 | 0.274 | 0.323 | 0.356 | 0.386 | 0.422 | 0.447 |
| 53 | 0.095 | 0.179 | 0.228 | 0.271 | 0.320 | 0.352 | 0.382 | 0.418 | 0.443 |
| 54 | 0.094 | 0.177 | 0.226 | 0.268 | 0.317 | 0.349 | 0.379 | 0.414 | 0.439 |
| 55 | 0.093 | 0.175 | 0.224 | 0.266 | 0.314 | 0.346 | 0.375 | 0.411 | 0.435 |
| 56 | 0.092 | 0.174 | 0.222 | 0.264 | 0.311 | 0.343 | 0.372 | 0.407 | 0.432 |
| 57 | 0.091 | 0.172 | 0.220 | 0.261 | 0.308 | 0.340 | 0.369 | 0.404 | 0.428 |
| 58 | 0.090 | 0.171 | 0.218 | 0.259 | 0.306 | 0.337 | 0.366 | 0.400 | 0.424 |
| 59 | 0.089 | 0.169 | 0.216 | 0.257 | 0.303 | 0.334 | 0.363 | 0.397 | 0.421 |
| 60 | 0.089 | 0.168 | 0.214 | 0.255 | 0.300 | 0.331 | 0.360 | 0.394 | 0.418 |
| 61 | 0.088 | 0.166 | 0.213 | 0.252 | 0.298 | 0.329 | 0.357 | 0.391 | 0.414 |
| 62 | 0.087 | 0.165 | 0.211 | 0.250 | 0.296 | 0.326 | 0.354 | 0.388 | 0.411 |
| 63 | 0.086 | 0.163 | 0.209 | 0.248 | 0.293 | 0.323 | 0.351 | 0.385 | 0.408 |
| 64 | 0.086 | 0.162 | 0.207 | 0.246 | 0.291 | 0.321 | 0.348 | 0.382 | 0.405 |
| 65 | 0.085 | 0.161 | 0.206 | 0.244 | 0.289 | 0.318 | 0.346 | 0.379 | 0.402 |
| 66 | 0.084 | 0.160 | 0.204 | 0.243 | 0.287 | 0.316 | 0.343 | 0.376 | 0.399 |
| 67 | 0.084 | 0.158 | 0.203 | 0.241 | 0.284 | 0.314 | 0.341 | 0.373 | 0.396 |
| 68 | 0.083 | 0.157 | 0.201 | 0.239 | 0.282 | 0.311 | 0.338 | 0.370 | 0.393 |
| 69 | 0.082 | 0.156 | 0.200 | 0.237 | 0.280 | 0.309 | 0.336 | 0.368 | 0.390 |
| 70 | 0.082 | 0.155 | 0.198 | 0.235 | 0.278 | 0.307 | 0.333 | 0.365 | 0.388 |
| 71 | 0.081 | 0.154 | 0.197 | 0.234 | 0.276 | 0.305 | 0.331 | 0.363 | 0.385 |
| 72 | 0.081 | 0.153 | 0.195 | 0.232 | 0.274 | 0.303 | 0.329 | 0.360 | 0.382 |
| 73 | 0.080 | 0.152 | 0.194 | 0.230 | 0.272 | 0.301 | 0.327 | 0.358 | 0.380 |
| 74 | 0.080 | 0.151 | 0.193 | 0.229 | 0.271 | 0.299 | 0.324 | 0.355 | 0.377 |
| 75 | 0.079 | 0.150 | 0.191 | 0.227 | 0.269 | 0.297 | 0.322 | 0.353 | 0.375 |
| 76 | 0.078 | 0.149 | 0.190 | 0.226 | 0.267 | 0.295 | 0.320 | 0.351 | 0.372 |
| 77 | 0.078 | 0.148 | 0.189 | 0.224 | 0.265 | 0.293 | 0.318 | 0.349 | 0.370 |
| 78 | 0.077 | 0.147 | 0.188 | 0.223 | 0.264 | 0.291 | 0.316 | 0.346 | 0.368 |
| 79 | 0.077 | 0.146 | 0.186 | 0.221 | 0.262 | 0.289 | 0.314 | 0.344 | 0.365 |
| 80 | 0.076 | 0.145 | 0.185 | 0.220 | 0.260 | 0.287 | 0.312 | 0.342 | 0.363 |
| 81 | 0.076 | 0.144 | 0.184 | 0.219 | 0.259 | 0.285 | 0.310 | 0.340 | 0.361 |
| 82 | 0.075 | 0.143 | 0.183 | 0.217 | 0.257 | 0.284 | 0.308 | 0.338 | 0.359 |
| 83 | 0.075 | 0.142 | 0.182 | 0.216 | 0.255 | 0.282 | 0.306 | 0.336 | 0.357 |
| 84 | 0.074 | 0.141 | 0.181 | 0.215 | 0.254 | 0.280 | 0.305 | 0.334 | 0.355 |
| 85 | 0.074 | 0.140 | 0.180 | 0.213 | 0.252 | 0.279 | 0.303 | 0.332 | 0.353 |
| 86 | 0.074 | 0.139 | 0.179 | 0.212 | 0.251 | 0.277 | 0.301 | 0.330 | 0.351 |
| 87 | 0.073 | 0.139 | 0.177 | 0.211 | 0.250 | 0.276 | 0.299 | 0.328 | 0.349 |
| 88 | 0.073 | 0.138 | 0.176 | 0.210 | 0.248 | 0.274 | 0.298 | 0.327 | 0.347 |
| 89 | 0.072 | 0.137 | 0.175 | 0.209 | 0.247 | 0.272 | 0.296 | 0.325 | 0.345 |
| 90 | 0.072 | 0.136 | 0.174 | 0.207 | 0.245 | 0.271 | 0.294 | 0.323 | 0.343 |
| 91 | 0.072 | 0.135 | 0.173 | 0.206 | 0.244 | 0.269 | 0.293 | 0.321 | 0.341 |
| 92 | 0.071 | 0.135 | 0.173 | 0.205 | 0.243 | 0.268 | 0.291 | 0.319 | 0.339 |
| 93 | 0.071 | 0.134 | 0.172 | 0.204 | 0.241 | 0.267 | 0.290 | 0.318 | 0.338 |
| 94 | 0.070 | 0.133 | 0.171 | 0.203 | 0.240 | 0.265 | 0.288 | 0.316 | 0.336 |
| 95 | 0.070 | 0.133 | 0.170 | 0.202 | 0.239 | 0.264 | 0.287 | 0.314 | 0.334 |
| 96 | 0.070 | 0.132 | 0.169 | 0.201 | 0.238 | 0.262 | 0.285 | 0.313 | 0.332 |
| 97 | 0.069 | 0.131 | 0.168 | 0.200 | 0.236 | 0.261 | 0.284 | 0.311 | 0.331 |
| 98 | 0.069 | 0.130 | 0.167 | 0.199 | 0.235 | 0.260 | 0.282 | 0.310 | 0.329 |
| 99 | 0.068 | 0.130 | 0.166 | 0.198 | 0.234 | 0.258 | 0.281 | 0.308 | 0.327 |
| 100 | 0.068 | 0.129 | 0.165 | 0.197 | 0.233 | 0.257 | 0.279 | 0.307 | 0.326 |