

TABLE B.10 Critical Values for the Runs Test for Randomness.

One-tailed alternative; $\alpha = 0.05$.

| n_1 | n_2 | | | | | | | | | | |
|-------|-------|---|---|----|----|----|----|----|----|----|----|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2 | – | – | – | – | – | – | 2 | 2 | 2 | 2 | 2 |
| 3 | – | – | – | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| 4 | – | – | 7 | – | – | – | – | – | – | – | – |
| 5 | – | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 |
| 6 | – | – | 9 | 9 | 10 | 10 | 11 | 11 | 11 | – | – |
| 7 | – | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 |
| 8 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 | 6 |
| 9 | – | – | – | 11 | 12 | 13 | 13 | 14 | 14 | 15 | 15 |
| 10 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 6 | 6 | 7 | 7 |
| 11 | – | – | – | 11 | 12 | 13 | 14 | 15 | 16 | 16 | 17 |
| 12 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 6 | 7 | 7 | 8 |
| | – | – | – | – | 13 | 14 | 15 | 15 | 16 | 17 | 17 |
| | – | – | – | – | 13 | 14 | 15 | 16 | 17 | 17 | 18 |

One-tailed alternative; $\alpha = 0.025$.

| n_1 | n_2 | | | | | | | | | | |
|-------|-------|---|---|----|----|----|----|----|----|----|----|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2 | – | – | – | – | – | – | – | – | – | – | 2 |
| 3 | – | – | – | – | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 4 | – | – | – | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 |
| 5 | – | – | – | 9 | 9 | – | – | – | – | – | – |
| 6 | – | – | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 4 | 4 |
| 7 | – | – | 9 | 10 | 10 | 11 | 11 | – | – | – | – |
| 8 | – | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 |
| 9 | – | – | 9 | 10 | 11 | 12 | 12 | 13 | 13 | 13 | 13 |
| 10 | – | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 5 |
| 11 | – | – | – | 11 | 12 | 13 | 13 | 14 | 14 | 14 | 14 |

(Continued)

TABLE B.10 (Continued)

One-tailed alternative; $\alpha = 0.025$.

| n_1 | n_2 | | | | | | | | | | |
|-------|-------|---|---|----|----|----|----|----|----|----|----|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 8 | – | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 6 |
| | – | – | – | 11 | 12 | 13 | 14 | 14 | 15 | 15 | 16 |
| 9 | – | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 6 | 6 |
| | – | – | – | – | 13 | 14 | 14 | 15 | 16 | 16 | 16 |
| 10 | – | 2 | 3 | 3 | 4 | 5 | 5 | 5 | 6 | 6 | 7 |
| | – | – | – | – | 13 | 14 | 15 | 16 | 16 | 17 | 17 |
| 11 | – | 2 | 3 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 7 |
| | – | – | – | – | 13 | 14 | 15 | 16 | 17 | 17 | 18 |
| 12 | 2 | 2 | 3 | 4 | 4 | 5 | 6 | 6 | 7 | 7 | 7 |
| | – | – | – | – | 13 | 14 | 16 | 16 | 17 | 18 | 19 |

Source: Adapted from tables D.5 and D.6 of Janke, S. J., & Tinsley, F. C. (2005). *Introduction to Linear Models and Statistical Inference*. Hoboken, NJ: John Wiley & Sons, Inc. Reprinted with permission of John Wiley & Sons, Inc. Copyright 2005 by John Wiley & Sons, Inc. All rights reserved.