

Table A-7 Critical Values for the Sign Test

| <i>n</i> | α | | | |
|----------|--------------------|--------------------|--------------------|--------------------|
| | .005 (one tail) | .01 (one tail) | .025 (one tail) | .05 (one tail) |
| | .01 (two tails) | .02 (two tails) | .05 (two tails) | .10 (two tails) |
| 1 | * | * | * | * |
| 2 | * | * | * | * |
| 3 | * | * | * | * |
| 4 | * | * | * | * |
| 5 | * | * | * | 0 |
| 6 | * | * | 0 | 0 |
| 7 | * | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 1 |
| 9 | 0 | 0 | 1 | 1 |
| 10 | 0 | 0 | 1 | 1 |
| 11 | 0 | 1 | 1 | 2 |
| 12 | 1 | 1 | 2 | 2 |
| 13 | 1 | 1 | 2 | 3 |
| 14 | 1 | 2 | 2 | 3 |
| 15 | 2 | 2 | 3 | 3 |
| 16 | 2 | 2 | 3 | 4 |
| 17 | 2 | 3 | 4 | 4 |
| 18 | 3 | 3 | 4 | 5 |
| 19 | 3 | 4 | 4 | 5 |
| 20 | 3 | 4 | 5 | 5 |
| 21 | 4 | 4 | 5 | 6 |
| 22 | 4 | 5 | 5 | 6 |
| 23 | 4 | 5 | 6 | 7 |
| 24 | 5 | 5 | 6 | 7 |
| 25 | 5 | 6 | 7 | 7 |

NOTES:

1. * indicates that it is not possible to get a value in the critical region, so fail to reject the null hypothesis.
2. Reject the null hypothesis if the number of the less frequent sign (*x*) is less than or equal to the value in the table.
3. For values of *n* greater than 25, a normal approximation is used with

$$z = \frac{(x + 0.5) - \left(\frac{n}{2}\right)}{\frac{\sqrt{n}}{2}}$$