

Illustrating Stirling's Formula

| n | $n!$ | $n^n e^{-n} \sqrt{2\pi n}$ | $n! / (n^n e^{-n} \sqrt{2\pi n})$ |
|-----------------------|---------------------------|--|---|
| 10 | 3,628,800 | 3,598,696 | 1.00837 |
| 30 | 2.65253×10^{32} | 2.64517×10^{32} | 1.00278 |
| 50 | 3.04141×10^{64} | 3.03634×10^{64} | 1.00167 |
| 100 | 9.33262×10^{157} | 9.32485×10^{157} | 1.00083 |