**Taylor polynomials of degree $n$**

$$e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \frac{x^5}{5!} + \frac{x^6}{6!} + \frac{x^7}{7!} + \cdots + \frac{x^i}{i!} + \cdots$$

Using terms only up to $i = n$ for the following values of $n$, we get the following computed values of the (truncated) Taylor series (i.e., Taylor polynomial of degree $n$) to compute $e^1 = e = 2.718281828459046$).

| $n$ | Taylor approximation |
|---|---|
| 1 | 2.0 |
| 2 | 2.5 |
| 3 | 2.666666... |
| 4 | 2.708333... |
| 5 | 2.716666... |
| 6 | 2.718055... |
| 7 | 2.718253968253968 |
| 8 | 2.718278769841270 |
| 9 | 2.718281525573192 |
| 10 | 2.718281801146385 |
| 11 | 2.718281826198493 |
| exact | 2.718281828459046 |