

0.1 Maclaurin series

A Taylor series around $c = 0$.

$$f(x) = \sum_{i=0}^{\infty} (x - c)^i \frac{f^{(i)}(c)}{i!}$$

$$f(x) = \sum_{i=0}^{\infty} (x)^i \frac{f^{(i)}(0)}{i!}$$

For example, for:

$$f(x) = (1 - x)^{-1}$$

$$f^{(i)}(0) = i!$$

So, around $x = 0$:

$$f(x) = \sum_{i=0}^{\infty} (x)^i$$