



sen x :

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

$f(x) = \text{sen } x$; $x=0 \rightarrow 0$

$$f(x) = f(0) + f'(0)x + \frac{f''(0)}{2!}x^2 + \frac{f'''(0)}{3!}x^3 + \frac{f^{(4)}(0)}{4!}x^4 + \frac{f^{(5)}(0)}{5!}x^5$$

$$f(0) = \text{sen}(0) = 0$$

$$f'(0) = \cos(0) = 1 \checkmark$$

$$f''(0) = -\text{sen}(0) = 0$$

$$f'''(0) = -\cos(0) = -1$$

$$f^{(4)}(0) = \text{sen}(0) = 0$$

$$f^{(5)}(0) = \cos(0) = 1$$

$$\text{sen } x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \frac{x^9}{9!} - \frac{x^{11}}{11!} + \dots + \frac{x^n}{n!}$$