

# Límite por L'Hopital

## Solución

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

$$\lim_{x \rightarrow 0} \frac{\text{sen } x - x}{x^3} = \frac{\text{sen}(0) - 0}{0^3} = \frac{0 - 0}{0} = \frac{0}{0}$$

$$\lim_{x \rightarrow 0} \frac{\cos(x) - 1}{3x^2} = \frac{\cos(0) - 1}{3 \cdot 0^2}$$

$$= \frac{1 - 1}{0} = \frac{0}{0}$$

$$\frac{d}{dx} \text{sen}(x) = \cos(x)$$

$$\frac{d}{dx} x^n = nx^{n-1}$$

$$\lim_{x \rightarrow 0} \frac{-\text{sen}(x) - 0}{3(2)x'} = \frac{-\text{sen}(x)}{6x}$$

$$\frac{d}{dx} \cos(x) = -\text{sen}(x)$$

$$= \frac{-\text{sen}(0)}{6(0)} = \frac{0}{0}$$

$$\frac{d}{dx} c = 0$$

$$\lim_{x \rightarrow 0} \frac{-\cos(x)}{6(1)x^0} = \frac{-\cos(x)}{6}$$

$$\cos(0) = 1$$

$$= \frac{-\cos(0)}{6} = \frac{-1}{6} = -\frac{1}{6}$$