

6ª lista de exercícios

Calcule os limites:

$$1) \lim_{x \rightarrow 0} \frac{\sin(9x)}{x} \quad R: 9$$

$$2) \lim_{x \rightarrow 0} \frac{\sin(4x)}{3x} \quad R: \frac{4}{3}$$

$$3) \lim_{x \rightarrow 0} \frac{\sin(10x)}{\sin(7x)} \quad R: \frac{10}{7}$$

$$4) \lim_{x \rightarrow 0} \frac{\tan(2x)}{x} \quad R: 2$$

$$5) \lim_{x \rightarrow 0} \frac{\sin^3(x/2)}{x^3} \quad R: \frac{1}{8}$$

$$6) \lim_{x \rightarrow 0} \frac{1 - \cos(x)}{x} \quad R: 0$$

$$7) \lim_{x \rightarrow \infty} \left(1 + \frac{2}{x}\right)^x \quad R: e^2$$

$$8) \lim_{x \rightarrow \infty} \left(\frac{x}{1+x}\right)^x \quad R: \frac{1}{e}$$

$$9) \lim_{x \rightarrow 2} \frac{10^{x-2} - 1}{x-2} \quad R: \ln(10)$$

$$10) \lim_{x \rightarrow 2} \frac{5^x - 25}{x-2} \quad R: 25 \ln(5)$$

$$11) \lim_{x \rightarrow 0} \frac{\tanh(3x)}{x} \quad R: 2$$