

Opérations

Calculer les limites suivantes

$$\blacksquare \lim_{x \rightarrow +\infty} \sqrt{1 + \frac{1}{x^2}}$$

$$\blacksquare \lim_{x \rightarrow 2} \frac{x^2 - x + 2}{(x - 2)^2}$$

$$\blacksquare \lim_{x \rightarrow 1} \frac{x^2 - 2x + 1}{x^2 - 3x + 2}$$

$$\blacksquare \lim_{x \rightarrow 2} \frac{-2x^3 + 5x^2 - 4}{(x - 2)^3(1 - x)}$$

$$\blacksquare \lim_{x \rightarrow 2} \frac{1}{x^2 - 4}$$

Utilisation du conjugué

$$\blacksquare \lim_{x \rightarrow 3} \frac{\sqrt{3x + 7} - 4}{x^2 - 9}$$

$$\blacksquare \lim_{x \rightarrow 4} \frac{\sqrt{2x + 1} - \sqrt{x} - 1}{x - 4}$$

$$\blacksquare \lim_{x \rightarrow +\infty} \sqrt{x^2 - x + 1} - 2x$$

$$\blacksquare \lim_{x \rightarrow 3} \frac{\sqrt{x + 6} - 3}{x - 3}$$

$$\blacksquare \lim_{x \rightarrow 8} \frac{\sqrt{2x} - 4}{\sqrt{x + 1} - 3}$$

$$\blacksquare \lim_{x \rightarrow 2} \frac{\sqrt{x + 7} - 3}{\sqrt{x + 2} - 2}$$

Utilisation du conjugué et Factorisation par le terme dominant

$$\blacksquare \lim_{x \rightarrow +\infty} (\sqrt{x^2 + 3x} - x)$$

$$\blacksquare \lim_{x \rightarrow +\infty} (\sqrt{4x^2 + 3x} - 2x)$$

Factorisation par le terme dominant

Calculer les limites suivantes

$$\blacksquare \lim_{x \rightarrow +\infty} (x - \sqrt{x})$$

$$\blacksquare \lim_{x \rightarrow +\infty} (x^3 - 6x + 5)$$

$$\blacksquare \lim_{x \rightarrow +\infty} \frac{x^2 - 3x + 2}{x^2 + x + 2}$$

$$\blacksquare \lim_{x \rightarrow +\infty} \left(\frac{x - \sqrt{x}}{x + 3} \right)$$

$$\blacksquare \lim_{x \rightarrow 2} \left(\frac{1 - x^2 + 3}{x - 2} \right)$$

Limites trigonométriques

Calculer les limites suivantes

$$\blacksquare \lim_{x \rightarrow +\infty} x \sin \left(\frac{1}{x} \right)$$

$$\blacksquare \lim_{x \rightarrow 1} \frac{\sin(\pi x)}{x^2 - 1}$$

$$\blacksquare \lim_{x \rightarrow \frac{\pi}{4}} \left(\frac{\cos x - \sin x}{x - \frac{\pi}{4}} \right)$$

$$\blacksquare \lim_{x \rightarrow \pi} \frac{\sqrt{\cos \frac{x}{2}}}{x - \pi}$$

$$\blacksquare \lim_{x \rightarrow 1} \left(\frac{x - 1}{1 - \cos \pi x} \right)$$

$$\blacksquare \lim_{x \rightarrow 0} \left(\frac{x}{1 - \sin x} \right)$$

$$\blacksquare \lim_{x \rightarrow 0} \frac{x - \sin(2x)}{x + \sin x}$$

$$\blacksquare \lim_{x \rightarrow +\infty} \frac{x - \sin(2x)}{x + \sin x}$$

$$\blacksquare \lim_{x \rightarrow +\infty} \sqrt{x + 1} (\cos x - x^2)$$

$$\blacksquare \lim_{x \rightarrow \frac{\pi}{4}} \left(\frac{1 - \tan x}{\sin x - \frac{\sqrt{2}}{2}} \right)$$

$$\blacksquare \lim_{x \rightarrow 0} \frac{\sqrt{2} - \sqrt{1 + \cos x}}{x^2}$$

$$\blacksquare \lim_{x \rightarrow 0^+} \frac{\sin(2x)}{x^2}$$

$$\blacksquare \lim_{x \rightarrow +\infty} \frac{x^2 + \cos x}{x}$$

$$\blacksquare \lim_{x \rightarrow 0} \frac{\cos x - \sqrt{1 + \sin x}}{x}$$

$$\blacksquare \lim_{x \rightarrow -\infty} \frac{\cos(\pi x + 1)}{x}$$