

Limites



Exercice 1 Compléter (limites en $+\infty$) :

$$\lim_{x \rightarrow +\infty} -\frac{1}{x} = \dots\dots$$

$$\lim_{x \rightarrow +\infty} -\frac{x^2}{2} = \dots\dots$$

$$\lim_{x \rightarrow +\infty} -3x^2 = \dots\dots$$

$$\lim_{x \rightarrow +\infty} 2 + \frac{1}{x} = \dots\dots$$

$$\lim_{x \rightarrow +\infty} -\sqrt{x} = \dots\dots$$

$$\lim_{x \rightarrow +\infty} \frac{-2}{-5x^3} = \dots\dots$$

$$\lim_{x \rightarrow +\infty} \frac{1}{x^2} = \dots\dots$$

$$\lim_{x \rightarrow +\infty} -5x^3 = \dots\dots$$

$$\lim_{x \rightarrow +\infty} -10x = \dots\dots$$

Exercice 2 Compléter (limites en $-\infty$) :

$$\lim_{x \rightarrow -\infty} -\frac{1}{x} = \dots\dots$$

$$\lim_{x \rightarrow -\infty} -\frac{x^2}{2} = \dots\dots$$

$$\lim_{x \rightarrow -\infty} -3x^2 = \dots\dots$$

$$\lim_{x \rightarrow -\infty} 2 + \frac{1}{x} = \dots\dots$$

$$\lim_{x \rightarrow -\infty} -\sqrt{x} = \dots\dots$$

$$\lim_{x \rightarrow -\infty} \frac{-2}{-5x^3} = \dots\dots$$

$$\lim_{x \rightarrow -\infty} \frac{1}{x^2} = \dots\dots$$

$$\lim_{x \rightarrow -\infty} -5x^3 = \dots\dots$$

$$\lim_{x \rightarrow -\infty} -10x = \dots\dots$$

Exercice 3 Compléter (limites en un réel) :

$$\lim_{x \rightarrow 0} -x^5 = \dots\dots$$

$$\lim_{x \rightarrow -3} (x+3)^4 = \dots\dots$$

$$\lim_{x \rightarrow 2} (2-3x)^2 = \dots\dots$$

$$\lim_{x \rightarrow -3} (x+2)^3 = \dots\dots$$

$$\lim_{x \rightarrow 2} \frac{x-2}{4x^2} = \dots\dots$$

$$\lim_{x \rightarrow -3} \sqrt{6-x} = \dots\dots$$

Exercice 4 Déterminer les limites suivantes (en $+\infty$) :

$$\lim_{x \rightarrow +\infty} x^2 + 3x + 5 = \dots\dots$$

$$\lim_{x \rightarrow +\infty} x^3 - 3x^2 = \dots\dots$$

$$\lim_{x \rightarrow +\infty} -x^2 - 2x + 98 = \dots\dots$$

$$\lim_{x \rightarrow +\infty} -\frac{1}{x^2} + x = \dots\dots$$

$$\lim_{x \rightarrow +\infty} -5x^3 - x^2 = \dots\dots$$

$$\lim_{x \rightarrow +\infty} -\frac{1}{x} + x^2 + 4x = \dots\dots$$

Exercice 5 Déterminer les limites suivantes (en $-\infty$) :

$$\lim_{x \rightarrow -\infty} x^2 + 3x + 5 = \dots\dots$$

$$\lim_{x \rightarrow -\infty} x^3 - 3x^2 = \dots\dots$$

$$\lim_{x \rightarrow -\infty} -x^2 - 2x + 98 = \dots\dots$$

$$\lim_{x \rightarrow -\infty} -\frac{1}{x^2} + x = \dots\dots$$

$$\lim_{x \rightarrow -\infty} -5x^3 - x^2 = \dots\dots$$

$$\lim_{x \rightarrow -\infty} -\frac{1}{x} + x^2 + 4x = \dots\dots$$

Exercice 6 Déterminer les limites suivantes (en justifiant le signe du dénominateur) :

$$\lim_{\substack{x \rightarrow 0 \\ x > 0}} -\frac{1}{x^5} = \dots\dots$$

$$\lim_{\substack{x \rightarrow 1 \\ x > 1}} -\frac{1}{(x-1)^2} = \dots\dots$$

$$\lim_{\substack{x \rightarrow 1 \\ x > 1}} \frac{1}{x^2 + x - 2} = \dots\dots$$

$$\lim_{\substack{x \rightarrow 0 \\ x < 0}} -\frac{1}{x^5} = \dots\dots$$

$$\lim_{\substack{x \rightarrow 3 \\ x > 3}} -\frac{1}{x-3} = \dots\dots$$

$$\lim_{\substack{x \rightarrow 2 \\ x > 2}} \frac{1}{-x^2 + 3x - 2} = \dots\dots$$

$$\lim_{\substack{x \rightarrow 1 \\ x < 1}} -\frac{1}{(x-1)^2} = \dots\dots$$

$$\lim_{\substack{x \rightarrow 3 \\ x < 3}} -\frac{1}{x-3} = \dots\dots$$

$$\lim_{\substack{x \rightarrow -3 \\ x < -3}} \frac{1}{x^2 + x - 6} = \dots\dots$$