

• Calculs de Limites •

$$1. \quad \lim_{x \rightarrow -2} \frac{\sqrt{x^3 + x^2 - 3x + 2} - \sqrt{-x^3 + 2x^2 + 5x - 2}}{\sqrt{3x^3 + 5x^2 - 6x + 1} - \sqrt{2x^3 + 3x^2 - 4x + 5}} = 15$$

$$2. \quad \lim_{x \rightarrow 3} \frac{\sqrt{2x + 3} + \sqrt{x + 1} - 5}{x^4 - x^2 + 24x - 144} = \frac{1}{216}$$

$$3. \quad \lim_{x \rightarrow 2} \frac{x^5 - 2^5}{x^5 - 4x^4 + 7x^3 - 10x^2 + 13x - 10} = \frac{80}{9}$$

$$4. \quad \lim_{x \rightarrow 4} \frac{x^4 - 13x^3 + 60x^2 - 112x + 64}{x^4 - 11x^3 + 36x^2 - 16x - 64} = \frac{3}{5}$$

$$5. \quad \lim_{x \rightarrow 1} \frac{x^4 - 5x^3 + 9x^2 - 7x + 2}{x^4 - 10x^3 + 24x^2 - 22x + 7} = \frac{1}{6}$$

$$6. \quad \lim_{x \rightarrow 0^+} \frac{\sqrt{x^2 + x} - \sqrt{x^3 + x}}{x\sqrt{x^2 + x + 1}} = 0$$

$$7. \quad \lim_{x \rightarrow 0} \frac{(\sqrt{x^2 + 7} - \sqrt{x^3 + x^2 + 7})(\sqrt{2x + 1} - \sqrt{4x + 1})}{(x + 1)^3 - (1 - x)^3} = 0$$

$$8. \quad \lim_{x \rightarrow 2} \frac{x^4 - 16}{\sqrt{x^4 - 16} - \sqrt{4x^3 - 15x - 2}} = 0$$

$$9. \quad \lim_{x \rightarrow -2} \frac{x^3 + 8}{\sqrt{8 - x^3} - 4} = -8$$

$$10. \quad \lim_{x \rightarrow 1} \frac{x\sqrt{x} - 1}{x - 1} = \frac{3}{2}$$

$$11. \quad \lim_{x \rightarrow 1} \frac{\sqrt{x} - 1}{x - 1} = \frac{1}{2}$$

$$12. \quad \lim_{x \rightarrow 1} \frac{\sqrt{x + 8} - 3}{\sqrt{3x + 1} - 2} = \frac{2}{9}$$

$$13. \quad \lim_{x \rightarrow 1} \frac{x^3 + x^2 + 4x - 6}{x^3 + 6x - 7} = 1$$

$$14. \quad \lim_{x \rightarrow 1} \frac{x^3 + 4x^2 + x - 6}{x - 1} = 12$$

$$15. \quad \lim_{x \rightarrow +\infty} \frac{x}{2} - \frac{\sqrt{|x^2 - 1|}}{x} = +\infty$$