

Calcular los siguientes límites

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

$$2. \lim_{x \rightarrow 5} \frac{x^3 - 8x^2 + 16x - 5}{x^4 - 5x^3 - x + 5}$$

$$3. \lim_{x \rightarrow -2} \frac{x^3 + 3x^2 - 4}{x^4 + 4x^3 + x^2 - 12x - 12}$$

$$4. \lim_{x \rightarrow 2} \frac{x^2 - 2x}{x^2 - 4x + 4}$$

$$5. \lim_{x \rightarrow 3} \frac{\sqrt{x+1} - 2}{x - 3}$$

$$6. \lim_{x \rightarrow 0} \frac{\sqrt{x+2} - \sqrt{2}}{x}$$

$$7. \lim_{x \rightarrow +\infty} \frac{2x+3}{x + \sqrt[3]{x}}$$

$$8. \lim_{x \rightarrow +\infty} x(\sqrt{x^2+1} - x)$$

$$9. \lim_{x \rightarrow 7} \frac{2 - \sqrt{x-3}}{x^2 - 49}$$

$$10. \lim_{x \rightarrow +\infty} (\sqrt{x^4 + 2x^3} - (x^2 + x))$$

$$11. \lim_{x \rightarrow 0} \frac{\sqrt{1+x} - \sqrt{1-x}}{x}$$

$$12. \lim_{x \rightarrow 2} \frac{\frac{1}{x^3} - \frac{1}{8}}{x - 2}$$

$$13. \lim_{x \rightarrow 7} \frac{x-7}{\sqrt{x-4} - \sqrt{3}}$$

$$14. \lim_{x \rightarrow -1} \frac{x+1}{\sqrt{6x^2+3} + 3x}$$

Tres menos fáciles

$$15. \lim_{x \rightarrow 4} \frac{\sqrt{2x+1} - 3}{\sqrt{x-2} - \sqrt{2}}$$

$$16. \lim_{x \rightarrow 8} \frac{\sqrt[3]{x} - 2}{x - 8}$$

$$17. \lim_{x \rightarrow 64} \frac{\sqrt{x} - 8}{\sqrt[3]{x} - 4}$$

Soluciones

$$1. -\frac{3}{2}$$

$$2. \frac{11}{124}$$

$$3. -3$$

$$4. \begin{cases} -\infty & \text{si } x \rightarrow 2^- \\ +\infty & \text{si } x \rightarrow 2^+ \end{cases}$$

$$5. \frac{1}{4}$$

$$6. \frac{\sqrt{2}}{4}$$

$$7. 2$$

$$8. \frac{1}{2}$$

$$9. -\frac{1}{56}$$

$$10. -\frac{1}{2}$$

$$11. 1$$

$$12. -\frac{3}{16}$$

$$13. 2\sqrt{3}$$

$$14. 1$$

$$15. \frac{2\sqrt{2}}{3}$$

$$16. \frac{1}{12}$$

$$17. 3$$