

Calcular los siguientes límites:

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

2. $\lim_{x \rightarrow \infty} \left(\frac{3x + 2}{3x} \right)^{2x+1} = e^{4/3}$

3. $\lim_{x \rightarrow \infty} \left(\sqrt{x^2 + 1} - \sqrt{x^2 + x + 1} \right) = -\frac{1}{2}$

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

5. $\lim_{x \rightarrow 0} \frac{x \sin x}{\cos x - 1} = -2$

6. $\lim_{x \rightarrow \infty} \frac{x e^{x^3}}{x + 1} = \infty$

7. $\lim_{x \rightarrow 1^+} \left(\frac{1}{\ln x} - \frac{1}{x - 1} \right) = \frac{1}{2}$

8. $\lim_{x \rightarrow \infty} (e^{3/x} - 5x)^{1/x} = e^3$

9. $\lim_{x \rightarrow 0} (\sin x)^x = 1$

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