

Calcula los siguientes límites:

Soluciones

$$1. \lim_{x \rightarrow 1} \frac{8x^4 - 3x^2 - 7x + 2}{7x^5 - 4x - 3}$$

$$\frac{19}{31}$$

$$2. \lim_{x \rightarrow 7} \frac{\sqrt{x^2 + 2} - \sqrt{6x + 9}}{x - 7}$$

$$\frac{4\sqrt{51}}{51}$$

$$3. \lim_{x \rightarrow \infty} (\sqrt{3x^2 + 5} - \sqrt{3x^2 - 2x + 8})$$

$$\frac{\sqrt{3}}{3}$$

$$4. \text{Calcula } n \text{ sabiendo que } \lim_{x \rightarrow \infty} \left(\frac{x^2 - 5x + 1}{x^2 - 3} \right)^{7nx} = 5$$

$$n = -\frac{\ln 5}{35}$$

$$5. \lim_{x \rightarrow 0} \frac{\ln(\sin x + 1)}{\ln(1 - \sin x)}$$

$$-1$$

$$6. \lim_{x \rightarrow 0} \frac{e^x - x^2 + \arctan x - 1}{2e^x + x - 2}$$

$$\frac{2}{3}$$

$$7. \lim_{x \rightarrow 7} \frac{\sqrt{x^2 + 2} - \sqrt{6x + 9}}{x - 7}$$

$$\frac{4\sqrt{51}}{51}$$

$$8. \lim_{x \rightarrow 6} \frac{\sqrt{2x^2 + 1} - \sqrt{12x + 1}}{x - 6}$$

$$\frac{6\sqrt{73}}{73}$$

$$9. \lim_{x \rightarrow \infty} \left(\frac{x^2 - 5x + 1}{x^2} \right)^{x-1}$$

$$e^{-5}$$

$$10. \lim_{x \rightarrow \infty} \left(\frac{5x^2 - 8x + 12}{6x^2 + x - 1} \right)^{x^2 - 5}$$

$$0$$

$$11. \lim_{x \rightarrow \infty} \frac{\sqrt{9x^2 - 5x + 2}}{-3x + 1}$$

$$-1$$