Gabriel alejandro gelen gutierrez

• Factor comun •

ej

• $5x^4 + 3x^7 - 8x^9 + 6x^2$

$x^2(5x^2 + 3x^5 - 8x^7 + 6)$

• $7x^4 - 6x^2 + 6x^3y + 9x^6$

$x^2(7x^2 - 6 + 6xy + 9x^4)$

• Diferencia de cuadrados perfectos •

$(a^2 - b^2) =$

$(\sqrt{a^2} - \sqrt{b^2})(\sqrt{a^2} + \sqrt{b^2})$

$(a-b)(a+b)$

• $16x^2 - 25y^2$

$(\sqrt{16x^2} - \sqrt{25y^2})$

$(4x - 5y)(4x + 5y)$

• $x^5 - 8x^3$

$x^3(x^2 - 8)$

• $x - 8x^2$

$x(1 - 8x)$

$$\frac{x^3(x^2-8)}{x(1-8x)}$$

$$\lim_{x\to 0} \frac{0}{1} \longrightarrow 0$$

• $$\lim_{x\to 5} \frac{x^2-25}{x-5} = \lim_{x\to 5} \frac{0}{0} \text{ ind}$$

$$\lim_{x\to 5} \frac{(x-5)(x+5)}{(x-5)} = \lim_{x\to 5} x+5 = 10$$

• $$\lim_{x\to 1} \frac{x^2+2x-3}{x^2-5x+4} = \lim_{x\to 1} \frac{(1)^2+2(1)-3}{(1)^2-5(1)+4} = \lim_{x\to 1} \frac{0}{0}$$

$$\lim_{x\to 1} \frac{(x+3)(x-1)}{(x-4)(x-1)} = \frac{(x+3)}{(x-4)} = -\frac{4}{3}$$

• Siempre en cuenta los signos •

ⓐ $\lim_{x\to 4} \dfrac{x^2-5x+6}{x-2}$

ⓑ $\lim_{x\to 5} \dfrac{4x^2-25}{2x-5}$

ⓒ $\lim_{x\to 1} \dfrac{x^6-x^5}{x-1}$

ⓓ $\lim_{x\to 6} \dfrac{x^2-36}{x-6}$

Solución

ⓐ $\lim_{x\to 4} \dfrac{x^2-5x+6}{x-2} = \lim_{x\to 4} \dfrac{4^2-5(4)+6}{4-2} = \lim_{x\to 4} \dfrac{16-20+6}{2} \quad \dfrac{2}{2} = 0$

ⓑ $\lim_{x\to 5} \dfrac{4x^2-25}{2x-5} = \lim_{x\to 5} \dfrac{4(5)^2-25}{2(5)-5} \quad \lim_{x\to 5} \dfrac{100-25}{10-5} = \dfrac{75}{5}$

ⓒ $\lim_{x\to 1} \dfrac{x^6-x^5}{x-1} = \lim_{x\to 1} \dfrac{0}{0}$ ind

$\dfrac{(x-1)(x+1)}{(x-1)} \quad \lim_{x\to 1} = x+1 = \lim_{x\to 1} 2$

ⓓ $\lim_{x\to 6} \dfrac{x^2-36}{x-6} \quad \lim_{x\to 1} \dfrac{36-36}{6-6} \quad \lim_{x\to 1} = 0$ ind

$\lim_{x\to 6} \dfrac{(x-6)(x+6)}{(x-6)} = \lim_{x\to 6} x+6 = \lim_{x\to 6} 12$