

## FRACCIONES ALGEBRAICAS

1. Calcula:

$$a) \frac{2x}{5+x} + \frac{x^2}{5-x} - \frac{x^3+x^2}{25-x^2}$$

$$c) \frac{x}{x-1} \cdot \frac{x-1}{x^2}$$

$$e) \frac{1}{x^2-1} : \frac{1}{x+1}$$

$$g) \frac{(x+3)x}{x^2-9} : \frac{5x^2-2x}{x-3}$$

$$i) \left(2 - \frac{3}{x+1}\right) \left(\frac{2}{x+1} - 3\right)$$

$$k) \frac{2x+1}{x-3} - \frac{3x}{x+3} + \frac{4}{x^2+6x+9}$$

$$m) \frac{x-2}{x+1} : \frac{x^2-4}{x^2+3x-10}$$

$$o) \frac{x+5}{x^2+x} \cdot \frac{x-5}{(x+5)^2} \cdot \frac{x}{x^2-10x+25}$$

$$q) \frac{x^2+2x-15}{x^2+5x} : \frac{x-3}{x^3}$$

$$s) \frac{x+2}{x} \cdot \left(\frac{x}{x-2} - \frac{x+1}{x+2}\right) \cdot \frac{x}{3x+2}$$

$$b) \left[\frac{x^3-x}{x^2+x} - \frac{3x-1}{x+1}\right] \cdot \frac{x^2+2x+1}{x-3}$$

$$d) \frac{2x^2}{x^2-3x+2} + \frac{x}{x^2+x-2} - \frac{x^2}{x^2-1}$$

$$f) \frac{x-3}{x^2} \cdot \frac{(x-3)2x}{x^2-6x+9}$$

$$h) \frac{x^2-9}{x^2-25} \cdot \frac{x+5}{x+3} \cdot \frac{x-5}{x^2}$$

$$j) \frac{1 + \frac{1}{x}}{1 - \frac{1}{x}} \cdot \frac{x-1}{x+1}$$

$$l) \frac{x^2-8x+16}{x^2+5x+6} \cdot \frac{x-4}{x+2}$$

$$n) \frac{(x+3)^2}{x^2-9} \cdot \frac{x-3}{x^2+6x+9}$$

$$p) \frac{x^2-49}{2x} \cdot \frac{3x^3}{x^2+2x-35}$$

$$r) \left(x - \frac{1}{x}\right) \left(1 - \frac{x}{4}\right) - \frac{1}{4x}$$

$$t) \frac{x^2}{x^4-4x^2} + \frac{x+1}{x^2+2x} : \frac{x-2}{x}$$

## SOLUCIONES:

$$\text{b) } \frac{2x}{5-x}$$

$$\text{c) } \frac{1}{x}$$

$$\text{e) } \frac{1}{x-1}$$

$$\text{g) } \frac{1}{5x-2}$$

$$\text{i) } \frac{(1-2x)(3x+1)}{(x+1)^2}$$

$$\text{k) } \frac{x^3 - 13x^2 - 55x + 3}{(3-x)(x+3)^2}$$

$$\text{m) } \frac{(x-2)(x+5)}{(x+1)(x+2)}$$

$$\text{o) } \frac{1}{(x+1)(x+5)(x-5)}$$

$$\text{q) } x^2$$

$$\text{s) } \frac{1}{x-2}$$

$$\text{b) } x(x+1)$$

$$\text{d) } \frac{x^4 + 7x^3 + 7x^2 - 2x}{(x+2)(x-2)(x^2-1)}$$

$$\text{f) } \frac{2}{x}$$

$$\text{h) } \frac{(x-3)(x+5)}{x^2(x+2)}$$

$$\text{j) } 1$$

$$\text{l) } \frac{x-4}{x+3}$$

$$\text{n) } \frac{1}{x+3}$$

$$\text{p) } \frac{3x^2(x-7)}{2(x-5)}$$

$$\text{r) } \frac{-x^3 + 4x^2 + x - 5}{4x}$$

$$\text{t) } \frac{1}{x-2}$$