

Corrigés Savoir Cd. 4

Corrigé Exercice 15

1.

$$A = \frac{5x}{x} + \frac{2}{x}$$

$$B = \frac{1}{x} + \frac{2x^2}{x} - \frac{5x}{x}$$

$$C = \frac{5x \times 3x}{3x} + \frac{2}{3x}$$

$$D = \frac{x^2}{x^2} - \frac{2}{x^2}$$

$$E = 4x - \frac{2}{x^2}$$

$$F = \frac{7}{x^2} - 2x$$

$$A = \frac{5x+2}{x}$$

$$B = \frac{2x^2-5x+1}{x}$$

$$C = \frac{15x^2+2}{3x}$$

$$D = \frac{x^2-2}{x^2}$$

$$E = \frac{4x^3-2}{x^2}$$

$$F = \frac{7-2x^3}{x^2}$$

2.

$$G = \frac{1}{x+2} - \frac{3(x+2)}{x+2}$$

$$H = \frac{2x(2x+3)}{2x+3} + \frac{5}{2x+3}$$

$$I = \frac{1(3x+2) - 2x(3x+2) + 4}{3x+2}$$

$$G = \frac{1-3x-6}{x+2} = \frac{-3x-5}{x+2}$$

$$H = \frac{4x^2+6x+5}{2x+3}$$

$$I = \frac{3x+2-6x^2-4x+4}{3x+2}$$

$$I = \frac{-6x^2-x+6}{3x+2}$$

$$J = \frac{2x-4x(2+x)-2(2+x)}{2+x}$$

$$K = \frac{-2-3(2x-5)+x(2x-5)}{2x-5}$$

$$J = \frac{2x-8x-4x^2-4-2x}{2+x}$$

$$K = \frac{-2-6x+15+2x^2-5x}{2x-5}$$

$$J = \frac{-4x^2-8x-4}{2+x}$$

$$K = \frac{2x^2-11x+13}{2x-5}$$

$$L = \frac{x-3x(2-x)}{2-x}$$

$$M = \frac{2+x(x^2+1)-2(x^2+1)}{x^2+1}$$

$$N = \frac{2}{x-4} - \frac{3x(x-4)}{x-4} + \frac{1(x-4)}{x-4}$$

$$L = \frac{x-6x+3x^2}{2-x}$$

$$M = \frac{2+x^3+x-2x^2-2}{x^2+1}$$

$$N = \frac{2-3x^2+12x+x-4}{x-4}$$

$$L = \frac{3x^2-5x}{2-x}$$

$$M = \frac{x^3-2x^2+x}{x^2+1}$$

$$N = \frac{-3x^2+13x-2}{x-4}$$

Corrigé Exercice 16

1.

$$P = \frac{5}{x^2} + \frac{3}{x} \times \frac{x}{x}$$

$$Q = \frac{3(2x-3) + 2(x+1)}{(x+1)(2x-3)}$$

$$R = \frac{(4x+1)(2x-1) - 2x}{x(2x-1)}$$

$$P = \frac{3x+5}{x^2}$$

$$Q = \frac{6x-9+2x+2}{(x+1)(2x-3)}$$

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

$$Q = \frac{8x-7}{(x+1)(2x-3)}$$

$$R = \frac{8x^2-4x-1}{x(2x-1)}$$

$$S = \frac{2x}{5} - \frac{1}{x} \quad T = \frac{5-(5x-3)(x+1)}{(x+1)^2}$$

$$S = \frac{2x^2-5}{5x} \quad T = \frac{5-(5x^2+2x-3)}{(x+1)^2}$$

$$T = \frac{-5x^2-2x+8}{(x+1)^2}$$

2.

$$U = 3 - \frac{2}{x} + \frac{1}{x^2}$$

$$V = \frac{1 \times (2-3x) \times x}{2 \times (2-3x) \times x} - \frac{2 \times 2 \times x}{(2-3x) \times 2 \times x} + \frac{3 \times 2 \times (2-3x)}{x \times 2 \times (2-3x)}$$

$$U = \frac{3x^2-2x+1}{x^2}$$

$$V = \frac{2x-3x^2-4x+12-18x}{2x(2-3x)} = \frac{-3x^2-20x+12}{2x(2-3x)}$$

$$W = \frac{1}{x^2} + \frac{1}{2x} + \frac{1}{3}$$

$$W = \frac{6 + 3x + 2x^2}{6x^2}$$

$$Y = \frac{2(x+1)(x-1) - x \times x(x-1) + x(x+1)}{x(x+1)(x-1)}$$

$$Y = \frac{2(x^2 - 1) - x^2(x-1) + x^2 + x}{x(x+1)(x-1)}$$

$$Y = \frac{2x^2 - 2 - x^3 + x^2 + x^2 + x}{x(x+1)(x-1)} = \frac{-x^3 + 4x^2 + x - 2}{x(x+1)(x-1)}$$

Corrigé Exercice 17

1. On met tout sur le dénominateur $x + 3$:

$$B = \frac{x+3}{x+3} + \frac{x^2-9}{x+3} = \frac{x^2+x-6}{x+3}$$

$$\text{et } C = \frac{(x-2)(x+3)}{1 \times (x+3)} = \frac{x^2+x-6}{x+3}. \quad \text{Donc } A = B = C.$$

$$2. a) A + B = \frac{1}{x} + \frac{1}{x-1} = \frac{(x-1) + x}{x(x-1)} = \frac{2x-1}{x^2-x} = C \quad CQFD$$

$$b) \frac{1}{A-B} = \frac{1}{\frac{1}{x} - \frac{1}{x-1}} = \frac{1}{\frac{1 \times (x-1)}{x(x-1)} - \frac{1 \times x}{x(x-1)}} = \frac{1}{\frac{-1}{x^2-x}} = \frac{x^2-x}{-1} = x - x^2.$$

On pouvait aussi d'abord calculer $A - B$