

Corrigés Savoir Cf. 5

Corrigé Exercice 12

1)

$$\begin{array}{llll} A_1 = x & A_2 = x^2 & A_3 = \frac{1}{x^3} & A_4 = \frac{1}{n^4} \\ A_5 = 3x & A_6 = \frac{1}{5a^2} & A_7 = \frac{a}{b^3} & A_8 = \frac{3}{2y} \end{array}$$

$$\begin{array}{lll} A_9 = \frac{1}{x} & A_{10} = x^3 & A_{11} = 3x^8 \\ A_{12} = \frac{2}{n^2} & A_{13} = \frac{5a}{b^2} & A_{14} = \frac{\sqrt{x}}{2} \end{array}$$

2)

$$B_1 = \frac{4x-6}{-2} = \frac{4x}{-2} - \frac{6}{-2} = -2x + 3$$

$$B_2 = \frac{2x-5}{x} = \frac{2x}{x} - \frac{5}{x} = 2 - \frac{5}{x}$$

$$B_3 = \frac{5x^2-4x}{x^2} = \frac{5x^2}{x^2} - \frac{4x}{x^2} = 5 - \frac{4}{x}$$

$$B_4 = \frac{4x^2+6x-1}{2x} = \frac{4x^2}{2x} + \frac{6x}{2x} - \frac{1}{2x} = 2x + 3 - \frac{1}{2x}$$

$$B_5 = \frac{n^2-4}{n^3} = \frac{n^2}{n^3} - \frac{4}{n^3} = \frac{1}{n} - \frac{4}{n^3}$$

$$B_6 = \frac{3a^2b-2b^2}{6ab} = \frac{3a^2b}{6ab} - \frac{2b^2}{6ab} = \frac{a}{2} - \frac{b}{3a}$$

$$B_7 = \frac{5-2x}{-x} = -\frac{5}{x} + 2$$

$$B_8 = \frac{4x^2-2}{4x} = x - \frac{1}{2x}$$

$$B_9 = \frac{n^4-3n}{n^2} = 2 = n^2 - \frac{3}{n}$$

$$\begin{aligned} B_{10} &= \frac{x^2y + 2xy - 4xy^2}{2x^2y^2} \\ &= \frac{x^2y}{2x^2y^2} + \frac{2xy}{2x^2y^2} - \frac{4xy^2}{2x^2y^2} \\ &= \frac{1}{2y} + \frac{1}{xy} - \frac{2}{x} \end{aligned}$$

Corrigé Exercice 13

$$C_1 = \frac{2x(x+3)}{2x} = x + 3$$

$$C_2 = \frac{5+x}{5} \quad \text{Non simplifiable (somme)}$$

$$C_3 = \frac{3x+1}{5(3x+1)} = \frac{1}{5}$$

$$C_4 = \frac{4x-5}{(4x-5)^2} = \frac{1}{4x-5}$$

$$C_5 = \frac{(2x-1)-3x}{2x-1} \quad \text{Non simplifiable (somme)} : C_5 = \frac{-3x-1}{2x-1}$$

$$C_6 = \frac{(1-x)(1+x)}{(1+x)^2} = \frac{1-x}{1+x}$$

$$C_7 = \frac{4x^2(3x-4)}{2x(4-3x)} = \frac{-2x \times 2x(-3x+4)}{2x(-3x+4)} = -2x$$

$$C_8 = \frac{4(x+1)}{x+1} = 4$$

$$C_9 = \frac{2x-3}{-3} \quad \text{Non simplifiable (somme)}$$

$$C_{10} = \frac{4}{3x+4} \quad \text{Non simplifiable (somme)}$$

$$C_{11} = \frac{3x+2}{(3x+2)(3x-2)} = \frac{1}{3x-2}$$

$$C_{12} = \frac{4x+2(2x+3)}{2x+3} \quad \text{Non simplifiable (somme)}$$

$$C_{12} = \frac{4x+4x+6}{2x+3} = \frac{8x+6}{2x+3}$$

$$C_{13} = \frac{3x(x+2)-(5-x)(x+2)}{4(x+2)} \quad \text{À priori, on simplifiable car c'est une somme. Mais il y a le facteur (x+2) dans chaque terme, donc on pourrait factoriser :}$$

$$C_{13} = \frac{3x(x+2)-(5-x)(x+2)}{4(x+2)} = \frac{3x-(5-x)}{4} = \frac{4x-5}{4}$$

Corrigé Exercice 14

$$A = \frac{2x - 5}{5 - 2x} = \frac{-(-2x + 5)}{-2x + 5} = -1$$

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

Pas de simplification possible

$$E = \frac{2x + 8}{3x^2 + 12x} = \frac{2(x + 4)}{3x(x + 4)} = \frac{2}{3x}$$

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

$$B = \frac{5x}{5x^2 - 15x} = \frac{5x}{5x(x - 3)} = \frac{1}{x - 3}$$

$$D = \frac{6x - 3}{2x - 1} = \frac{3(2x - 1)}{2x - 1} = 3$$

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

$$H = \frac{2x^2 + 3x}{4x^2 - 9} = \frac{x(2x + 3)}{(2x + 3)(2x - 3)} = \frac{x}{2x - 3}$$