

TG 3 Corrigé.

Exercice 1

$$1^\circ A(x) = 12x^4 - 6x^3 + 18x = 6x(2x^3 - x^2 + 3)$$

$$B(x) = 3x(2x+1) - 5(2x+1) \\ = (2x+1)(3x-5)$$

$$C(x) = (4x-3)(x+1) - (5x+1)(4x-3) \\ = (4x-3)[(x+1) - (5x+1)] \\ = (4x-3)(x+1-5x-1) \\ = (4x-3)(-4x)$$

$$D(x) = (3x-1) - (2x-3)(3x-1) \\ = (3x-1)[1 - (2x-3)] \\ = (3x-1)(1-2x+3) \\ = (3x-1)(-2x+4)$$

$$E(x) = 2x+2 - (x+1)(-x+3) \\ = 2(x+1) - (x+1)(-x+3) \\ = (x+1)[2 - (-x+3)] \\ = (x+1)(2+x-3) \\ = (x+1)(x-1)$$

2°

$$B(x) = 3x(2x+1) - 5(2x+1) \\ = 6x^2 + 3x - 10x - 5 \\ = 6x^2 - 7x - 5$$

$$C(x) = (4x-3)(x+1) - (5x+1)(4x-3) \\ = 4x^2 + 4x - 3x - 3 - (20x^2 - 15x + 4x - 3) \\ = 4x^2 + 4x - 3x - 3 - 20x^2 + 15x - 4x + 3 \\ = -16x^2 + 12x$$

$$D(x) = (3x-1) - (2x-3)(3x-1) \\ = 3x-1 - (6x^2 - 2x - 9x + 3) \\ = 3x-1 - 6x^2 + 2x + 9x - 3 \\ = -6x^2 + 14x - 4$$

$$E(x) = 2x+2 - (x+1)(-x+3) \\ = 2x+2 - (-x^2 + 3x - x + 3) \\ = 2x+2 + x^2 - 3x + x - 3 \\ = x^2 - 1$$

$$3^\circ (2x+1)(3x-5) = 6x^2 - 10x + 3x - 5 = 6x^2 - 7x - 5 = B(x)$$

$$(4x-3)(-4x) = -16x^2 + 12x = C(x)$$

$$(3x-1)(-2x+4) = -6x^2 + 12x + 2x - 4 = -6x^2 + 14x - 4 = D(x)$$

$$(x+1)x^2 - x + x - 1 = x^2 - 1 = E(x)$$

Exercice 2

	Masse initiale	Masse utilisée	Masse restante
Farine	$x - 300$	$\frac{2}{3}(x - 300)$	$\frac{1}{3}(x - 300)$
Sucre	x	$\frac{x}{2} + 100$	$x - \left(\frac{x}{2} + 100\right) = \frac{x}{2} - 100$

Comme il lui reste 200g de sucre de plus que de farine :

$$\frac{x-300}{3} + 200 = \frac{x}{2} - 100 \Leftrightarrow \frac{2x-600}{6} + \frac{1200}{6} = \frac{3x}{6} - \frac{600}{6}$$

$$2x - 600 + 1200 = 3x - 600 \Leftrightarrow 1200 = x$$

Initialement la masse de sucre est de 1200 grammes alors que celle de farine est de 900 g