NOM :

INTERRO DE COURS – SEMAINE 3

Exercice 1 – Développer, réduire et ordonner les expressions suivantes.

1. $A(x) = 4(-2x+1)$

Solution :

$$A(x) = 4(-2x+1) = -8x+4$$

2. $B(x) = (-2x+1)(x+5)$

Solution :

$$B(x) = (-2x+1)(x+5) = -2x^2 - 10x + x + 5 = -2x^2 - 9x + 5$$

3. $C(x) = (3-8x)(11x+3)$

Solution :

$$C(x) = 33x + 9 - 88x^2 - 24x = -88x^2 + 9x + 9$$

4. $D(x) = (4-5x)^2$

Solution :

$$D(x) = 4^2 - 2 \times 4 \times 5x + (5x)^2 = 16 - 40x + 25x^2 = 25x^2 - 40x + 16$$

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

Solution :

$$E(x) = 3^2 - (2x)^2 + 1^2 - 2 \times 1 \times 2x + (2x)^2 = 9 - 4x^2 + 1 - 4x + 4x^2 = -4x + 10$$

Exercice 2 – Factoriser **au maximum** les expressions suivantes.

1. $A(x) = 4x - 8$

Solution :

$$A(x) = 4x - 8 = 4 \times x - 4 \times 2 = 4(x-2)$$

2. $B(x) = (5-4x)(x-3) + (6+2x)(5-4x)$

Solution :

$$B(x) = (5-4x)\big(x-3+6+2x\big) = (5-4x)(3x+3) = 3(5-4x)(x+1)$$

3. $C(x) = (2x+1)^2 - (2x+1)(x-3)$

Solution :

$$C(x) = (2x+1)\big(2x+1-(x-3)\big) = (2x+1)(2x+1-x+3) = (2x+1)(x+4)$$

4. $D(x) = 4x^2 - 40x + 100$

Solution :

$$D(x) = (2x)^2 - 2 \times 2x \times 10 + 10^2 = (2x-10)^2$$

5. $E(x) = (x-1)(2x-3) - \big(4x^2 - 12x + 9\big)$

Solution :

$$\begin{aligned} E(x) &= (x-1)(2x-3) - \big((2x)^2 - 2 \times 2x \times 3 + 3^2\big) = (x-1)(2x-3) - (2x-3)^2 \\ &= (2x-3)\big(x-1-(2x-3)\big) = (2x-3)(x-1-2x+3) = (2x-3)(-x+2) \end{aligned}$$