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

   Solution :
   $$E(x) = (x - 1)(2x - 3) - ((2x)^2 - 2 \times 2x \times 3 + 3^2) = (x - 1)(2x - 3) - (2x - 3)^2$$
   $$= (2x - 3)\big(x - 1 - (2x - 3)\big) = (2x - 3)(x - 1 - 2x + 3) = (2x - 3)(-x + 2)$$