

**Exercice 1 :**

Développer chaque expression.

$$A = 3(x + 5) = 3 \times x + 3 \times 5 = 3x + 15$$

$$B = 10(3 + x) = 10 \times 3 + 10 \times x = 30 + 10x$$

$$C = 4(2x + 3) = 4 \times 2x + 4 \times 3 = 8x + 12$$

$$D = 5(6 - x) = 5 \times 6 - 5 \times x = 30 - 5x$$

$$E = 7(x - 3) = 7 \times x - 7 \times 3 = 7x - 21$$

$$F = 2(5x - 9) = 2 \times 5x - 2 \times 9 = 10x - 18$$

**Exercice 2 :**

Développer les expressions suivantes.

$$A = -5(x + 2) = (-5) \times x + (-5) \times 2 = -5x - 10$$

$$B = -3(x - 2) = (-3) \times x - (-3) \times 2 = -3x + 6$$

$$C = 2x(x - 7) = 2x \times x - 2x \times 7 = 2x^2 - 14x$$

$$D = x(4 - x) = x \times 4 - x \times x = 4x - x^2$$

$$E = -3x(x + 4) = -3x \times x + (-3x) \times 4 = -3x^2 - 12x$$

$$F = x(x + 3) = x \times x + x \times 3 = x^2 + 3x$$

**Exercice 3 :**

Développe et réduis les expressions suivantes.

$$A = (x + 4)(x + 3) = x \times x + x \times 3 + 4 \times x + 4 \times 3 = x^2 + 3x + 4x + 12 = x^2 + 7x + 12$$

$$B = (y + 3)(2y + 8) = y \times 2y + y \times 8 + 3 \times 2y + 3 \times 8 = 2y^2 + 8y + 6y + 24 = 2y^2 + 14y + 24$$

$$C = (3z - 4)(5 - 6z) = 3z \times 5 + 3z \times (-6z) + (-4) \times 5 + (-4) \times (-6z) = 15z + (-18z^2) + (-20) + 24z = -18z^2 + 39z - 20$$

$$D = (7t + 8)(3 + 5t) = 7t \times 3 + 7t \times 5t + 8 \times 3 + 8 \times 5t = 21t + 35t^2 + 24 + 40t = 35t^2 + 61t + 24$$

**Exercice 4 :**

Factoriser les expressions suivantes.

$$A = 9y + 63 = 9 \times y + 9 \times 7 = 9 \times (y + 7)$$

$$B = 12y - 42 = 6 \times 2y - 6 \times 7 = 6 \times (2y - 7)$$

$$C = 5y + 5 = 5 \times y + 5 \times 1 = 5(y + 1)$$

$$D = 7y - 7z = 7 \times y - 7 \times z = 7(y - z)$$

$$E = x^2 + 3x = x \times x + 3 \times x = x(x + 3)$$