

# Développer

$$\bullet a(b+c) = a \times b + a \times c$$

$$\bullet (a+b)(c+d) = a \times c + a \times d + b \times c + b \times d$$

$$\bullet (a+b)^2 = a^2 + 2ab + b^2$$

$$\bullet (a-b)^2 = a^2 - 2ab + b^2$$

$$\bullet (a-b)(a+b) = a^2 - b^2$$

• réduire / simplifier = regrouper par même famille.

example:

$$A = 5(3x + 2)$$

$$= 5 \times 3x + 5 \times 2.$$

$$= 15x + 10$$

$$B = -3(2x - 5)$$

$$= -3 \times 2x + (-3) \times (-5)$$

$$= -6x + 15$$

$$C = (4x + 5)(3x + 2)$$

$$= 4x \times 3x + 4x \times 2 + 5 \times 3x + 5 \times 2$$

$$= 12x^2 + 8x + 15x + 10$$

$$= 12x^2 + 23x + 10$$

$$D = (x + 4)^2$$

$$= x^2 + 2 \times x \times 4 + 4^2$$

$$= x^2 + 8x + 16$$

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

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

$$= 9x^2 - 6x + 1$$

$$F = (t - 3)(t + 3)$$

$$= t^2 - 3^2$$

$$= t^2 - 9.$$

# Factoriser

$$\bullet 3 - 6x = 3 \times 1 - 3 \times 2 \times x \\ = 3(1 - 2x)$$

$$\bullet 2x + 5x^2 = 2 \times x + 5 \times x \times x \\ = x(2 + 5x)$$

$$\bullet 3x^2 - 9x^3 = 3 \times x^2 - 3 \times 3 \times x^2 \\ = 3x^2(1 - 3x)$$

$$\begin{aligned}
 & \cdot (x-1)(x+2) - (x-1)(3x-5) \\
 &= (x-1)[(x+2) - (3x-5)] \\
 &= (x-1)[x+2-3x+5] \\
 &= (x-1)(-2x+7)
 \end{aligned}$$

$$\begin{aligned}
 & \cdot 9x^2 + 6x + 1 \rightarrow b = \sqrt{1} \\
 &= (3x + 1)^2
 \end{aligned}$$

$$\begin{aligned}
 & \cdot 25x^2 - 20x + 4 \rightarrow \sqrt{4} \\
 &= (5x - 2)^2
 \end{aligned}$$

$$\begin{aligned}
 & \bullet \sqrt{36} \rightarrow 36x^2 - 49 \rightarrow \sqrt{49} \\
 & = (6x - 7)(6x + 7)
 \end{aligned}$$

$$\begin{aligned}
 & \bullet 16 - x^2 \\
 & (4 - x)(4 + x)
 \end{aligned}$$