

## Multiplication de polynômes

Lois des exposants :  $x^a \cdot x^b = x^{a+b}$   $(x^a)^b = x^{a \cdot b}$

Distribution :  $\alpha(x + x_0) = \alpha \cdot x + \alpha \cdot x_0$

Identités remarquables :

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

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

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

$$\begin{aligned} \textcircled{3} \quad & (2x-1) \underbrace{(x-3)(x+3)} \\ &= (2x-1)(x^2-3^2) \\ &= (2x-1)(x^2-9) \\ &= 2x \cdot x^2 - 2x(9) - x^2 + 9 \\ &= 2x^3 - x^2 - 18x + 9 \end{aligned}$$

$$\begin{aligned} \textcircled{1} \quad & (5x-6) \overbrace{(2x-3)} \\ &= 5x(2x-3) - 6(2x-3) \\ &= 5x(2x) - (5x)(3) - 6(2x) - 6(-3) \\ &= 10x^2 - 15x - 12x + 18 \\ &= 10x^2 - 27x + 18 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & (2x^2 + 3y^2)^2 = (2x^2)^2 + 2(2x^2)(3y^2) + (3y^2)^2 \\ &= 2^2(x^2)^2 + 2(2)(3)x^2 \cdot y^2 + 3^2(y^2)^2 \\ &= 4x^4 + 12x^2y^2 + 9y^4 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & -2(2-6x)(-x-1) + 5x^2 - 10x + 3 \\ &= -2[-2x - 2 + 6x^2 + 6x] + 5x^2 - 10x + 3 \\ &= 4x + 4 - 12x^2 - 12x + 5x^2 - 10x + 3 \\ &= -7x^2 + 4x - 12x - 10x + 4 + 3 \\ &= -7x^2 - 18x + 7 \end{aligned}$$