

Réduire et développer

&1. Réduire

$$A = 5x - 7x + 9x$$

$$A = \dots\dots\dots$$

$$B = -8x + 5x - 14x + 7x - 2x$$

$$B = \dots\dots\dots$$

$$C = 7x + 4 - 3x + 1$$

$$C = \dots\dots\dots$$

$$D = -5x^2 + 6x - 1 + 7x - 4x^2 - 5$$

$$D = \dots\dots\dots$$

$$E = 3x^2 - 9x + 7 + 4x - 1 - 5x^2 + 2x$$

$$E = \dots\dots\dots$$

&2. Parenthèses

- on supprime une parenthèse précédée du signe + sans changer les signes
- on supprime une parenthèse précédée du signe - en changeant tous les signes situés à l'intérieur de la parenthèse

Exemples

$$F = (2x + 5) - (8x - 4)$$

$$F = 2x + 5 - 8x + 4$$

$$F = -6x + 9$$

$$G = -(-9x + 7) + (4 - x)$$

$$G = 9x - 7 + 4 - x$$

$$G = 8x - 3$$

Simplifier et réduire

$$H = -(2x - 10) + (5x - 3)$$

$$H = \dots\dots\dots$$

$$H = \dots\dots\dots$$

&3. Distributivité

$$k(a + b) = ka + kb$$

a) Développer

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

$$A = \dots\dots\dots$$

$$B = 6(2 - x)$$

$$B = \dots\dots\dots$$

$$C = -5(x - 8)$$

$$C = \dots\dots\dots$$

$$D = 3(2x + 7)$$

$$D = \dots\dots\dots$$

$$E = -7(5x - 3)$$

$$E = \dots\dots\dots$$

b) Développer et réduire

$$F = 2(x - 3) + 4(2x - 9)$$

$$F = \dots\dots\dots$$

$$F = \dots\dots\dots$$

$$G = 4x(3x - 2) + 2(5x + 7)$$

$$G = \dots\dots\dots$$

$$G = \dots\dots\dots$$

$$H = -5x(2x - 7) - 4(3x + 1)$$

$$H = \dots\dots\dots$$

$$H = \dots\dots\dots$$

&4. Produit de parenthèses

$$(a + b)(c + d) = ac + ad + bc + bd$$

a) Développer et réduire

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

$$B = (4x - 3)(5x - 1)$$

$$C = (-2x + 1)(x - 1)$$

$$A = \dots\dots\dots$$

$$B = \dots\dots\dots$$

$$C = \dots\dots\dots$$

$$A = \dots\dots\dots$$

$$B = \dots\dots\dots$$

$$C = \dots\dots\dots$$

b) Développer et réduire

$$D = (x + 2)(5x + 4) + 2(x - 1)$$

$$E = (4x + 1)(x + 2) + (2x - 3)(x + 4)$$

$$D = \dots\dots\dots$$

$$E = \dots\dots\dots$$

$$D = \dots\dots\dots$$

$$E = \dots\dots\dots$$

$$F = (5x - 3)(2x + 1) - (4x - 1)(x + 2)$$

$$G = 3(x - 1)(x - 4)$$

$$F = \dots\dots\dots G = \dots\dots\dots$$

$$F = \dots\dots\dots G = \dots\dots\dots$$

$$F = \dots\dots\dots$$

$$G = \dots\dots\dots$$

&5. Identités remarquables

$$(a + b)^2 = \dots\dots\dots$$

Exercices : Développer

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

$$B = (3x + 5)^2$$

$$A = \dots\dots\dots$$

$$B = \dots\dots\dots$$

$$A = \dots\dots\dots$$

$$B = \dots\dots\dots$$

$$C = (2x + 9)^2$$

$$D = (6x + 1)^2$$

$$C = \dots\dots\dots$$

$$D = \dots\dots\dots$$

$$C = \dots\dots\dots$$

$$D = \dots\dots\dots$$

$$E = (7 + 3x)^2$$

$$F = \left(\frac{3}{5}x + 4\right)^2$$

$$E = \dots\dots\dots$$

$$F = \dots\dots\dots$$

$$E = \dots\dots\dots$$

$$F = \dots\dots\dots$$

$$(a - b)^2 = \dots\dots\dots$$

Exercices : Développer

$$A = (x - 5)^2$$

$$A = \dots\dots\dots$$

$$A = \dots\dots\dots$$

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

$$B = \dots\dots\dots$$

$$B = \dots\dots\dots$$

$$C = (8x - 3)^2$$

$$C = \dots\dots\dots$$

$$C = \dots\dots\dots$$

$$D = (7x - 4)^2$$

$$D = \dots\dots\dots$$

$$D = \dots\dots\dots$$

$$E = (6 - 5x)^2$$

$$E = \dots\dots\dots$$

$$E = \dots\dots\dots$$

$$F = \left(\frac{1}{2}x - 2\right)^2$$

$$F = \dots\dots\dots$$

$$F = \dots\dots\dots$$

$$(a + b)(a - b) = \dots\dots\dots$$

Exercices : Développer

$$A = (x + 8)(x - 8)$$

$$A = \dots\dots\dots$$

$$A = \dots\dots\dots$$

$$B = (x - 1)(x + 1)$$

$$B = \dots\dots\dots$$

$$B = \dots\dots\dots$$

$$C = (3x + 2)(3x - 2)$$

$$C = \dots\dots\dots$$

$$C = \dots\dots\dots$$

$$D = (5x + 8)(5x - 8)$$

$$D = \dots\dots\dots$$

$$D = \dots\dots\dots$$

$$E = (3 - 4x)(3 + 4x)$$

$$D = \dots\dots\dots$$

$$D = \dots\dots\dots$$

$$F = \left(\frac{2}{3}x + \frac{2}{7}\right)\left(\frac{2}{3}x - \frac{2}{7}\right)$$

$$F = \dots\dots\dots$$

$$F = \dots\dots\dots$$