



Exercice n°1 : Développer et réduire les expressions suivantes.

$$(x + 3)(x + 5)$$

$$(3b + 2)(5b + 2)$$

$$(a + 9)(a + 9)$$

$$(9t + 7)(9t + 6)$$

$$(5b + 6)(9b + 10)$$

$$(a + 8)(10a + 1)$$

$$(6x + 8)(6x + 9)$$

$$(6t + 3)(2t + 5)$$

$$(10y + 7)(2y + 3)$$

$$(4a + 3)(9a + 7)$$

Exercice n°2 : Développer et réduire les expressions suivantes.

$$(3y - 10)(7y + 3)$$

$$(4x + 6)(-6x - 10)$$

$$(5b + 5)(8b - 1)$$

$$(-9y - 4)(-6y - 5)$$

$$(-3a + 10)(3a + 1)$$

$$(-t - 7)(6t - 4)$$

$$(8a + 3)(-a + 3)$$

$$(-3t + 2)(-4t + 3)$$

$$(-3x - 8)(x + 9)$$

$$(4b - 2)(-8b + 1)$$

Exercice n°3 : Développer et réduire les expressions suivantes.

$$\mathcal{A} = 5x + 10 + (3x + 4)(-3x + 3)$$

$$\mathcal{B} = 3x^2 + (x - 8)(-5x + 6)$$

$$\mathcal{C} = (2x + 1)(2x + 1) + (4x - 3)(5x + 2)$$

$$\mathcal{D} = (x+1)(x+1) - (x+1)(3x-5)$$

$$\mathcal{E} = (3x - 7)(5x - 2) - (x + 2)(x + 5)$$

$$\mathcal{F} = 3(3x - 2)(-3 - 3x) - 5(4x - 1)(4x - 1)$$

$$\mathcal{G} = 4(3x - 2)(4x + 7)$$

$$\mathcal{H} = 2(x^2 + 5) + (x - 4)(3 - x)$$

$$\mathcal{I} = (x - 2)(x + 7) + 2x^2$$

$$\mathcal{D} = (4x - 5)(4x + 5) - x^2 + x + 12$$



Correction

Exercice n°1 : Développer et réduire les expressions suivantes.

$$\begin{aligned}(x+3)(x+5) \\&= x \times x + x \times 5 + 3 \times x + 3 \times 5 \\&= x^2 + 5x + 3x + 15 \\&= x^2 + 8x + 15\end{aligned}$$

$$\begin{aligned}(a+9)(a+9) \\&= a \times a + a \times 9 + 9 \times a + 9 \times 9 \\&= a^2 + 9a + 9a + 81 \\&= a^2 + 18a + 81\end{aligned}$$

$$\begin{aligned}(5b+6)(9b+10) \\&= 5b \times 9b + 5b \times 10 + 6 \times 9b + 6 \times 10 \\&= 45b^2 + 50b + 54b + 60 \\&= 45b^2 + 104b + 60\end{aligned}$$

$$\begin{aligned}(6x+8)(6x+9) \\&= 6x \times 6x + 6x \times 9 + 8 \times 6x + 8 \times 9 \\&= 36x^2 + 54x + 48x + 72 \\&= 36x^2 + 102x + 72\end{aligned}$$

$$\begin{aligned}(10y+7)(2y+3) \\&= 10y \times 2y + 10y \times 3 + 7 \times 2y + 7 \times 3 \\&= 20y^2 + 30y + 14y + 21 \\&= 20y^2 + 44y + 21\end{aligned}$$

$$\begin{aligned}(3b+2)(5b+2) \\&= 3b \times 5b + 3b \times 2 + 2 \times 5b + 2 \times 2 \\&= 15b^2 + 6b + 10b + 4 \\&= 15b^2 + 16b + 4\end{aligned}$$

$$\begin{aligned}(9t+7)(9t+6) \\&= 9t \times 9t + 9t \times 6 + 7 \times 9t + 7 \times 6 \\&= 81t^2 + 54t + 63t + 42 \\&= 81t^2 + 117t + 42\end{aligned}$$

$$\begin{aligned}(a+8)(10a+1) \\&= a \times 10a + a \times 1 + 8 \times 10a + 8 \times 1 \\&= 10a^2 + a + 80a + 8 \\&= 10a^2 + 81a + 8\end{aligned}$$

$$\begin{aligned}(6t+3)(2t+5) \\&= 6t \times 2t + 6t \times 5 + 3 \times 2t + 3 \times 5 \\&= 12t^2 + 30t + 6t + 15 \\&= 12t^2 + 36t + 15\end{aligned}$$

$$\begin{aligned}(4a+3)(9a+7) \\&= 4a \times 9a + 4a \times 7 + 3 \times 9a + 3 \times 7 \\&= 36a^2 + 28a + 27a + 21 \\&= 36a^2 + 55a + 21\end{aligned}$$

Exercice n°2 : Développer et réduire les expressions suivantes.

$$\begin{aligned}(3y-10)(7y+3) \\&= 3y \times 7y + 3y \times 3 - 10 \times 7y - 10 \times 3 \\&= 21y^2 + 9y - 70y - 30 \\&= 21y^2 - 61y - 30\end{aligned}$$

$$\begin{aligned}(5b+5)(8b-1) \\&= 5b \times 8b + 5b \times (-1) + 5 \times 8b + 5 \times (-1) \\&= 40b^2 - 5b + 40b - 5 \\&= 40b^2 + 35b - 5\end{aligned}$$

$$\begin{aligned}(-3a+10)(3a+1) \\&= -3a \times 3a - 3a \times 1 + 10 \times 3a + 10 \times 1 \\&= -9a^2 - 3a + 30a + 10 \\&= -9a^2 + 27a + 10\end{aligned}$$

$$\begin{aligned}(8a+3)(-a+3) \\&= 8a \times (-a) + 8a \times 3 + 3 \times (-a) + 3 \times 3 \\&= -8a^2 + 24a - 3a + 9 \\&= -8a^2 + 21a + 9\end{aligned}$$

$$\begin{aligned}(-3x-8)(x+9) \\&= -3x \times x - 3x \times 9 - 8 \times x - 8 \times 9\end{aligned}$$

$$\begin{aligned}(4x+6)(-6x-10) \\&= 4x \times (-6x) + 4x \times (-10) + 6 \times (-6x) + 6 \times (-10) \\&= -24x^2 - 40x - 36x - 60 \\&= -24x^2 - 76x - 60\end{aligned}$$

$$\begin{aligned}(-9y-4)(-6y-5) \\&= -9y \times (-6y) - 9y \times (-5) - 4 \times (-6y) - 4 \times (-5) \\&= 54y^2 + 45y + 24y + 20 \\&= 54y^2 + 69y + 20\end{aligned}$$

$$\begin{aligned}(-t-7)(6t-4) \\&= -t \times 6t - t \times (-4) - 7 \times 6t - 7 \times (-4) \\&= 6t^2 + 4t - 42t + 28 \\&= -6t^2 - 38t + 28\end{aligned}$$

$$\begin{aligned}(-3t+2)(-4t+3) \\&= -3t \times (-4t) - 3t \times 3 + 2 \times (-4t) + 2 \times 3 \\&= 12t^2 - 9t - 8t + 6 \\&= 12t^2 - 17t + 6\end{aligned}$$

$$\begin{aligned}(4b-2)(-8b+1) \\&= 4b \times (-8b) + 4b \times 1 - 2 \times (-8b) - 2 \times 1\end{aligned}$$

$$= -3x^2 - 27x - 8x - 72$$

$$= -3x^2 - 35x - 72$$

Exercice n°3 : Développer et réduire les expressions suivantes.

$$\mathcal{A} = 5x + 10 + (3x + 4)(-3x + 3)$$

$$\mathcal{A} = 5x + 10 - 9x^2 + 9x - 12x + 12$$

$$\mathcal{A} = -9x^2 + 2x + 22$$

$$\mathcal{B} = 3x^2 + (x - 8)(-5x + 6)$$

$$\mathcal{B} = 3x^2 - 5x^2 + 6x + 40x - 48$$

$$\mathcal{B} = -2x^2 + 46x - 48$$

$$\mathcal{C} = (2x + 1)(2x + 1) + (4x - 3)(5x + 2)$$

$$\mathcal{C} = 4x^2 + 2x + 2x + 1 + (20x^2 + 8x - 15x - 6)$$

$$\mathcal{C} = 4x^2 + 2x + 2x + 1 + 20x^2 + 8x - 15x - 6$$

$$\mathcal{A} = 24x^2 - 3x - 5$$

$$\mathcal{D} = (x+1)(x+1) - (x+1)(3x-5)$$

$$\mathcal{D} = (x^2 + x + x + 1) - (3x^2 - 5x + 3x - 5)$$

$$\mathcal{D} = x^2 + x + x + 1 - 3x^2 + 5x - 3x + 5$$

$$\mathcal{D} = -2x^2 + 4x + 6$$

$$\mathcal{E} = (3x - 7)(5x - 2) - (x + 2)(x + 5)$$

$$\mathcal{E} = 15x^2 - 6x - 35x + 14 - (x^2 + 5x + 2x + 10)$$

$$\mathcal{E} = 15x^2 - 6x - 35x + 14 - x^2 - 5x - 2x - 10$$

$$\mathcal{E} = 14x^2 - 48x + 4$$

$$= -32b^2 + 4b + 16b - 2$$

$$= -32b^2 + 20b - 2$$

$$\mathcal{F} = 3(3x - 2)(-3 - 3x) - 5(4x - 1)(4x - 1)$$

$$\mathcal{F} = 3(-9x - 9x^2 + 6 + 6x) - 5(16x^2 - 4x - 4x + 1)$$

$$\mathcal{F} = -27x - 27x^2 + 18 + 18x - 80x^2 + 20x + 20x - 5$$

$$\mathcal{F} = -107x^2 + 31x + 13$$

$$\mathcal{G} = 4(3x - 2)(4x + 7)$$

$$\mathcal{G} = 4(12x^2 + 21x - 8x - 14)$$

$$\mathcal{G} = 48x^2 + 84x - 32x - 56$$

$$\mathcal{G} = 48x^2 + 52x - 56$$

$$\mathcal{H} = 2(x^2 + 5) + (x - 4)(3 - x)$$

$$\mathcal{H} = 2x^2 + 10 + (3x - x^2 - 12 + 4x)$$

$$\mathcal{H} = 2x^2 + 10 + 3x - x^2 - 12 + 4x$$

$$\mathcal{H} = x^2 + 7x - 2$$

$$\mathcal{I} = (x - 2)(x + 7) + 2x^2$$

$$\mathcal{I} = x^2 + 7x - 2x - 14 + 2x^2$$

$$\mathcal{I} = 3x^2 + 5x - 14$$

$$\mathcal{D} = (4x - 5)(4x + 5) - x^2 + x + 12$$

$$\mathcal{D} = 16x^2 + 20x - 20x - 25 - x^2 + x + 12$$

$$\mathcal{D} = 15x^2 + x - 13$$