

2^{nde} 3 - Corrigé du Devoir Maison n°2 de mathématiques

Exercice 1 :

$$A = (2x - 1)(-x - 3)$$

$$A = -2x^2 + x - 6x + 3$$

$$\boxed{A = -2x^2 - 5x + 3}$$

$$B = \left(-3x + \frac{1}{3}\right)\left(-3x - \frac{1}{3}\right)$$

$$\boxed{B = 9x^2 - \frac{1}{9}}$$

$$C = -3(x + 1)^2 - (4x + 1)^2$$

$$C = -3(x^2 + 2x + 1) - (16x^2 + 8x + 1)$$

$$C = -3x^2 - 6x - 3 - 16x^2 - 8x - 1$$

$$\boxed{C = -19x^2 - 14x - 4}$$

$$D = \left(\frac{1}{4}x - \frac{2}{5}\right)^2$$

$$\boxed{D = \frac{1}{16}x^2 - \frac{1}{5}x + \frac{4}{25}}$$

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

$$E = 16x^2 + 8x + 1 - 4x - 1 - (16x^2 - 12x + 4x - 3)$$

$$E = 16x^2 + 4x - 16x^2 + 12x - 4x + 3$$

$$\boxed{E = 12x + 3}$$

$$F = (-x - 1)^2 - (x + 1)^2$$

$$F = (x + 1)^2 - (x + 1)^2$$

$$\boxed{F = 0}$$

$$G = x(3x + 2) - (3x + 2)^2$$

$$G = 3x^2 + 2x - (9x^2 + 12x + 4)$$

$$G = 3x^2 + 2x - 9x^2 - 12x - 4$$

$$\boxed{G = -6x^2 - 10x - 4}$$

$$H = \left(t - \frac{1}{2}\right)^2 - \left(t + \frac{1}{2}\right)\left(t - \frac{1}{2}\right)$$

$$H = t^2 - t + \frac{1}{4} - \left(t^2 - \frac{1}{4}\right)$$

$$H = t^2 - t + \frac{1}{4} - t^2 + \frac{1}{4}$$

$$\boxed{H = -t + \frac{1}{2}}$$

$$I = \frac{t-5}{3} - \frac{2-t}{6} - t^2$$

$$I = \frac{2(t-5)}{6} - \frac{(2-t)}{6} - t^2$$

$$I = \frac{2t-10-2+t}{6} - t^2$$

$$I = \frac{3t-12}{6} - t^2$$

$$\boxed{I = -t^2 + \frac{1}{2}t - 2}$$

Exercice 2 :

$$J = (5x - 2)^2 - (-x + 4)^2$$

$$J = [5x - 2 - (-x + 4)][5x - 2 + (-x + 4)]$$

$$J = (5x - 2 + x - 4)(5x - 2 - x + 4)$$

$$J = (6x - 6)(4x + 2)$$

$$J = 6(x - 1) \times 2(2x + 1)$$

$$\boxed{J = 12(x - 1)(2x + 1)}$$

$$K = \frac{9}{4}x^2 - \frac{3}{2}x + \frac{1}{4} \quad K = \left(\frac{3}{2}x - \frac{1}{2}\right)^2$$

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

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

$$E = (4x + 1)[4x + 1 - 1 - (4x - 3)]$$

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

$$\boxed{E = (4x + 1) \times 3 = 3(4x + 1)}$$

$$F = (-x - 1)^2 - (x + 1)^2$$

$$F = (x + 1)^2 - (x + 1)^2 = \boxed{0}$$

$$G = x(3x + 2) - (3x + 2)^2$$

$$G = (3x + 2)[x - (3x + 2)]$$

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

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

$$\boxed{G = -2(3x + 2)(x + 1)}$$

$$H = \left(t - \frac{1}{2}\right)^2 - \left(t + \frac{1}{2}\right)\left(t - \frac{1}{2}\right)$$

$$H = \left(t - \frac{1}{2}\right)\left[t - \frac{1}{2} - \left(t + \frac{1}{2}\right)\right]$$

$$H = \left(t - \frac{1}{2}\right)\left(t - \frac{1}{2} - t - \frac{1}{2}\right)$$

$$H = \left(t - \frac{1}{2}\right) \times (-1) = \boxed{-t + \frac{1}{2}}$$

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