

Factorisation Niveau 3

Exercise 1

$$\begin{aligned}
 A &= (-10x+6)^2 + (-5x+2)(-10x+6) \\
 &= (-10x+6)(-10x+6) + (-5x+2)(-10x+6) \\
 &= (-10x+6) \left((-10x+6) + (-5x+2) \right) \\
 &= (-10x+6) \left(-10x+6 - 5x+2 \right) \\
 &= \underline{(-10x+6)(-15x+8)}
 \end{aligned}$$

$$\begin{aligned}
 B &= 4 - (7x-7)^2 \\
 &= (2 + (7x-7))(2 - (7x-7)) \\
 &= (2 + 7x - 7)(2 - 7x + 7) \\
 &= \underline{(7x-5)(3-7x)}
 \end{aligned}$$

$$\begin{aligned}
 C &= (-8x-1)(x-1) - (-8x-1) \\
 &= (-8x-1)(x-1) - (-8x-1) \times 1 \\
 &= (-8x-1)(x-1-1) \\
 &= \underline{(-8x-1)(x-2)}
 \end{aligned}$$

$$\begin{aligned}
 D &= 36x^2 - 36 \\
 &= (6x)^2 - 6^2 \\
 &= \underline{(6x+6)(6x-6)}
 \end{aligned}$$

$$\begin{aligned}
 E &= (3x-8)(3x-10) + (-9x-2)(3x-8) \\
 &= (3x-8) \left(3x-10 + (-9x-2) \right) \\
 &= (3x-8) \left(3x-10 - 9x-2 \right) \\
 &= \underline{(3x-8)(-6x-12)}
 \end{aligned}$$

$$F = -(2x-4)(6x+2) + 4x^2 - 16$$

$$\begin{aligned} &= -(2x-4)(6x+2) + (2x+4)(2x-4) \\ &= (2x-4)\left(-(6x+2) + 2x+4\right) \\ &= (2x-4)\left(-6x-2 + 2x+4\right) \\ &= \underline{(2x-4)(-4x+2)} \end{aligned}$$

Exercice 2

$$\begin{aligned} A &= -(3x+5) + (3x-8)(3x+5) \\ &= (3x+5)(-1 + 3x-8) \\ &= \underline{(3x+5)(3x-9)} \end{aligned}$$

$$\begin{aligned} B &= 100x^2 - 81 - (10x+9)(2x-10) \\ &= (10x+9)(10x-9) - (10x+9)(2x-10) \\ &= (10x+9)(10x-9 - (2x-10)) \\ &= (10x+9)(10x-9 - 2x+10) \\ &= \underline{(10x+9)(8x+1)} \end{aligned}$$

$$\begin{aligned} C &= 100x^2 - 36 \\ &= \underline{(10x+6)(10x-6)} \end{aligned}$$

$$\begin{aligned} D &= 81 - (5x-1)^2 \\ &= (9 + (5x-1))(9 - (5x-1)) \\ &= (9 + 5x-1)(9 - 5x+1) \\ &= \underline{(5x+8)(10-5x)} \end{aligned}$$

$$\begin{aligned}
 E &= (8x - 3)(-7x - 7) + (-7x - 7)^2 \\
 &= (8x - 3)(-7x - 7) + (-7x - 7) \times (-7x - 7) \\
 &= (-7x - 7)(8x - 3 + (-7x - 7)) \\
 &= (-7x - 7)(8x - 3 - 7x - 7) \\
 &= \underline{(-7x - 7)(x - 10)}
 \end{aligned}$$

$$\begin{aligned}
 F &= -(6x - 10)(-6x + 10) + (-6x + 10)(x - 10) \\
 &= (-6x + 10)(-(6x - 10) + (x - 10)) \\
 &= (-6x + 10)(-6x + 10 + x - 10) \\
 &= (-6x + 10)(-5x)
 \end{aligned}$$