

## Niveau 3

### Exercice 4 p 20

$$a) (n-1)(n+1) + 1 = n^2 - 1 + 1 = n^2$$

vrai

$$b) \begin{aligned} 99 \times 101 + 1 &= (100-1) \times (100+1) + 1 \\ &= 100^2 \\ &= 10\,000 \end{aligned}$$

### Exercice 5 p 20

$$a) 4 \rightarrow 2x-1 = 8 \rightarrow 8-1 = 7 \rightarrow 7^2 = 49 \rightarrow 49-64 = -15$$

$$b) x \rightarrow 2x \rightarrow 2x-1 \rightarrow (2x-1)^2 \rightarrow (2x-1)^2 - 64$$

$$\begin{aligned} c) G &= (2x-1)^2 - 64 \\ &= (2x-1)^2 - 8^2 \\ &= (2x-1+8)(2x-1-8) \\ &= (2x+7)(2x-9) \end{aligned}$$

$$d) x=0, (2 \times 0 - 1)^2 - 64 = (-1)^2 - 64 = 1 - 64 = -63$$

$$x = \frac{1}{2}, (2 \times \frac{1}{2} - 1)^2 - 64 = (1-1)^2 - 64 = -64$$

$$\begin{aligned} x = -\frac{7}{2} \quad (2x+7)(2x-9) &= (2 \times (-\frac{7}{2}) + 7)(2 \times (-\frac{7}{2}) - 9) \\ &= (-7+7)(-7-9) \\ &= 0 \end{aligned}$$

$$x = \frac{9}{2} \quad G = \left(2 \times \frac{9}{2} + 7\right) \times \left(2 \times \frac{9}{2} - 9\right)$$

$$= (9+7)(9-9)$$

$$= 0$$

F2. Dev par IR - ex 1

$$A = (9x-8)^2$$

$$= 81x^2 - 144x + 64$$

$$B = (7x-5)(7x+5)$$

$$= 49x^2 - 25$$

$$C = (5x+4)^2$$

$$= 25x^2 + 40x + 16$$

$$D = (9x+1)(x-9)$$

$$= 9x^2 - 81x + x - 9$$

$$= 9x^2 - 80x - 9$$

$$E = -(10x-9)^2$$

$$= -(100x^2 - 180x + 81)$$

$$= -100x^2 + 180x - 81$$

$$F = \left(8x + \frac{2}{7}\right) \left(8x - \frac{2}{7}\right)$$

$$= 64x^2 - \frac{4}{49}$$

F2 Dev par IR - ex 2

$$A = (2x+8)^2$$

$$= 4x^2 + 32x + 64$$

$$B = (6x-7)(6x+7)$$

$$= 36x^2 - 49$$

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

$$= 9x^2 - 18x + 9$$

$$D = (7x+5)(5x-7)$$

$$= 35x^2 - 49x + 25x - 35$$

$$= 35x^2 - 24x - 35$$

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

$$= -x^2 + 4x - 4$$

$$F = \left(\frac{1}{10}x + \frac{5}{7}\right)^2$$

$$= \frac{x^2}{100} + \frac{9x \times 2}{70} + \frac{81}{49}$$

$$= \frac{x^2}{100} + \frac{18x}{70} + \frac{81}{49}$$

F1 Exercício 10

$$\begin{aligned} A &= (3x+2)^2 \\ &= 9x^2 + 12x + 4 \end{aligned}$$

$$\begin{aligned} B &= (2-5x)^2 \\ &= 4 - 20x + 25x^2 \end{aligned}$$

$$\begin{aligned} C &= (3x+1)(3x-1) \\ &= 9x^2 - 1 \end{aligned}$$

$$\begin{aligned} D &= (5x+1)(3-x) - 3(1-x) \\ &= 15x - 5x^2 + 3 - x - 3 + 3x \\ &= -5x^2 + 17x \end{aligned}$$