# Factorisation - Exercices

## Niveau 1

### Exercice 7 p30

$A = 4x + 20 = 4 \times x + 4 \times 5 = 4(x+5)$ ②

$B = 7x - 35 = 7 \times x - 7 \times 5 = 7(x-5)$ ③

$C = x^2 - 5x = x \times x - 5 \times x = x(x-5)$ ①

### Exercice 10 p30

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

donc c'est différent de $4x^2 - 4x + 1$

autre solution : $x = 0$

$$\begin{cases} 4x(x-1) = 4 \times 0 \times (0-1) = 0 \\ 4x^2 - 4x + 1 = 4 \times 0^2 - 4 \times 0 + 1 = 1 \end{cases}$$

Elle aurait dû reconnaître $a^2 - 2ab + b^2 = (a-b)^2$

$4x^2 = (2x)^2 \quad (= a)$

$1 = 1^2 \quad (= b^2)$

$2ab = 2 \times (2x) \times 1 = 4x$

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

### Exercice 38 p32

$A = 3x - 3 = 3 \times x - 3 \times 1 = 3(x-1)$

$B = 4y + 6 = 2 \times 2y + 2 \times 3 = 2(2y+3)$

$C = 8 + 2n = 2 \times 4 + 2 \times n = 2(4+n)$

$D = 7x^2 - 5x = 7 \times x \times x - 5 \times x = x(7x-5)$

$E = 30a + 36a^2 = 3a \times 10 + 12a \times 3a = 3a(10 + 12a)$

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

ou $2 \times (-x^2 - 1)$

Exercice 40 p 38

a) $4x^2 + 12x + 9$ $\quad 4x^2 = (2x)^2 \quad 9 = 3^2 \quad (a+b)^2 = a^2 + 2ab + b^2$

$= (2x + 3)^2$

b) $16x^2 - 40x + 25$ $\quad 16x^2 = (4x)^2 \quad 25 = 5^2 \quad (a-b)^2 = a^2 - 2ab + b^2$

$= (4x - 5)^2$

c) $9x^2 - 64$ $\quad 9x^2 = (3x)^2 \quad 64 = 8^2 \quad a^2 - b^2 = (a+b)(a-b)$

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

d) $49 - 70x + 25x^2 = 25x^2 - 70x + 49$ $\quad 25x^2 = (5x)^2 \quad 49 = 7^2$

$(a-b)^2 = a^2 - 2ab + b^2$

$= (5x - 7)^2$