

Atelica "factorar" Gorgés.

Exercice 1

$$\begin{aligned} A &= \underline{(x-2)}(x+2) + \underline{(x-2)}(x+7) \\ &= \underline{(x-2)}[(x+2) + (x+7)] \\ &= \underline{(x-2)}[x+2 + x+7] \\ &= \underline{(x-2)}(2x+9) \end{aligned}$$

$$\begin{aligned} B &= \underline{(2x+1)}(1-x) - \underline{(2x+1)}(3-2x) \\ &= \underline{(2x+1)}[(1-x) - (3-2x)] \\ &= \underline{(2x+1)}[1-x-3+2x] \\ &= \underline{(2x+1)}(x-2) \end{aligned}$$

$$\begin{aligned} C &= \underline{x}(x+2) + \underline{(x-4)}2 \\ &= \underline{x}[(x+2) + (x-4)] \\ &= \underline{x}[x+2 + x-4] \\ &= \underline{x}(2x-2) = 2x(x-1) \end{aligned}$$

$$\begin{aligned} D &= \underline{(x-3)}^2 - \underline{(2x+3)}(x-3) \\ &= \underline{(x-3)}(x-3) - \underline{(2x+3)}(x-3) \\ &= \underline{(x-3)}[(x-3) - (2x+3)] \\ &= \underline{(x-3)}[x-3-2x-3] \\ &= \underline{(x-3)}(-x-6) \end{aligned}$$

Exercice 2

$$\begin{aligned} 1) \quad &\underline{x}(x-2) + \underline{(x-1)}x \\ &= x[(x-2) + (x-1)] \\ &= x[x-2 + x-1] \\ &= x[2x-3] \end{aligned}$$

$$6x = 2x \times 2$$

$$\begin{aligned} 2) \quad &2x(x+y) + \underline{6x}(y^2+1) \\ &= 2x[(x+y) + 2(y^2+1)] \\ &= 2x[x+y + 2y^2+2] \\ &= 2x[2y^2+y+x+2] \end{aligned}$$

$$\begin{aligned} 3) \quad &\underline{(7-m)}(m+1) - \underline{(7-m)}(3m-1) \\ &= \underline{(7-m)}[(m+1) - (3m-1)] \\ &= \underline{(7-m)}[m+1-3m+1] \\ &= \underline{(7-m)}[-2m+2] \\ &= 2(7-m)(1-m) \end{aligned}$$

$$\begin{aligned} 4) \quad &\underline{(2x+3)}^2 - \underline{(2x+3)}(x-5) \\ &= \underline{(2x+3)}(2x+3) - \underline{(2x+3)}(x-5) \\ &= \underline{(2x+3)}[(2x+3) - (x-5)] \\ &= \underline{(2x+3)}[2x+3-x+5] \\ &= \underline{(2x+3)}(x+8) \end{aligned}$$

Quizz 3

$$\begin{aligned} 1) & x^2 + 14x + 49 \\ &= x^2 + 2 \times x \times 7 + 7^2 \\ &= (x+7)^2 \end{aligned}$$

$$\begin{aligned} 2) & 9x^2 - 30x + 25 \\ &= (3x)^2 - 2 \times 3x \times 5 + 5^2 \\ &= (3x-5)^2 \end{aligned}$$

$$\begin{aligned} 3) & x^2 - 16 \\ &= x^2 - 4^2 \\ &= (x+4)(x-4) \end{aligned}$$

$$\begin{aligned} 4) & (7x+3)^2 - 25 \\ &= (7x+3)^2 - 5^2 \\ &= [(7x+3)+5][(7x+3)-5] \\ &= (7x+8)(7x-2) \end{aligned}$$

"Par les plus rapides":

$$(2x+1)^2 - (2x+1)(x+3) = 0$$

$$(2x+1)(2x+1) - (2x+1)(x+3) = 0$$

$$(2x+1) [(2x+1) - (x+3)] = 0$$

$$(2x+1) (2x+1-x-3) = 0$$

$$(2x+1) (x-2) = 0$$

Parce qu'un produit est nul, il faut et il suffit que l'un au moins de ses facteurs soit nul.

$$2x+1=0 \quad \text{ou} \quad x-2=0$$

$$2x+1-1=0-1$$

$$2x = -1$$

$$\frac{2x}{2} = \frac{-1}{2}$$

$$x = -\frac{1}{2}$$

$$x-2+2=0+2$$

$$x = 2$$

$$S = \left\{ -\frac{1}{2}; 2 \right\}$$