

Revisions

$$\bullet \quad 2x(3x - 1)$$

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

$$= 6x^2 - 2x$$

$$\bullet \quad (5x - 2)(4x + 3)$$

$$= 5x \times 4x + 5x \times 3 - 2x \times 4x - 2x \times 3$$

$$= 20x^2 + 15x - 8x - 6$$

$$= 20x^2 + 7x - 6.$$

Factorisation

$$\begin{aligned} \cdot \quad 3x - 9 &= \textcircled{3} \times \textcircled{x} - \textcircled{3} \times \textcircled{3} \\ &= \textcolor{red}{3}(\textcolor{teal}{x} - \textcolor{teal}{3}) \end{aligned}$$

$$\begin{aligned} \cdot \quad 5x^2 - x &= \textcircled{5} \times \textcircled{x} \times \textcircled{x} - \textcircled{x} \times \textcircled{1} \\ &= \textcolor{red}{x}(\textcolor{teal}{5x} - \textcolor{teal}{1}) \end{aligned}$$

$$\begin{aligned} \cdot \quad 6x^2 + 12x &= \textcircled{6} \times \textcircled{x} \times \textcircled{x} + \textcircled{6} \times \textcircled{2} \times \textcircled{x} \\ &= \textcolor{red}{6x}(\textcolor{teal}{x} + \textcolor{teal}{2}) \end{aligned}$$

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

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

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

$$\begin{aligned} & \bullet \quad \overset{a^2}{\textcircled{x^2}} + 2x + \overset{b^2}{\textcircled{1}} \\ &= (x+1)^2 \end{aligned}$$

$$\begin{aligned} & \bullet \quad \overset{a^2}{\textcircled{4x^2}} - 12x + \overset{b^2}{\textcircled{9}} \\ &= (2x - \textcircled{3})^2 \\ & \quad \quad \quad \hookrightarrow \sqrt{9} \end{aligned}$$

$$\begin{aligned}
 & \bullet \quad 36x^2 - 16 \\
 & = (6x - 4)(6x + 4)
 \end{aligned}$$

exercice :

$$A = 7a + 21.$$

$$= 7 \times a + 7 \times 3$$

$$= 7(a + 3)$$

$$B = 10x + 5$$

$$= 5 \times 2x + 5 \times 1$$

$$= 5(2x + 1)$$

$$C = 24x - 36$$

$$= 9 \times 3x - 9 \times 4$$

$$= 9(3x - 4).$$

$$D = a^2 + 2a$$

$$= a(a + 2)$$

$$E = 3a^2 - 6a.$$

$$= 3 \times a \times a - 3 \times 2 \times a$$

$$= 3a(a - 2)$$

$$\begin{aligned} F &= 12x^2 - 14x \\ &= 2x(6x - 7). \end{aligned}$$

$$\begin{aligned} G &= 27x^4 - 18x^3 - 15x^2 \\ &= 3x^2(9x^2 - 6x - 5) \end{aligned}$$

$$\begin{aligned} H &= 5(x+1) + x(x+1) \\ &= (x+1)(5+x). \end{aligned}$$

$$\begin{aligned} I &= (x-1)(2x+3) + (x-1)(5x-2) \\ &= (x-1)(2x+3+5x-2) \\ &= (x-1)(7x+1) \end{aligned}$$

$$\begin{aligned}
 J &= (2x-5)(4x-3) - (2x-5)(3x-1) \\
 &= (2x-5)(4x-3 - (3x-1)) \\
 &= (2x-5)(4x-3 - 3x+1) \\
 &= (2x-5)(x-2).
 \end{aligned}$$

$$\begin{aligned}
 K &= (2x+5)(3x-7) - (2x+5) \times (5x-3) \\
 &= (2x+5)(3x-7 - 5x+3) \\
 &= (2x+5)(-2x-4)
 \end{aligned}$$

$$\begin{aligned} L &= x^2 + 6x + 9 \\ &= (x + 3)^2 \end{aligned}$$

$$\begin{aligned} M &= x^2 - 10x + 25 \\ &= (x - 5)^2 \end{aligned}$$

$$\begin{aligned} N &= x^2 + 20x + 100 \\ &= (x + 10)^2 \end{aligned}$$

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

$$P = 4x^2 + 12x + 9 \\ = (2x + 3)^2$$

$$Q = 36x^2 - 49 \\ = (6x - 7)(6x + 7)$$

$$R = 36 - 24x + 4x^2 \\ = (2x - 6)^2$$

$$S = 9 - 16x^2 \\ = (3 - 4x)(3 + 4x).$$

Equations

$$\bullet \quad 3x - 5 = 2$$

$$3x = 2 + 5$$

$$\overset{3 \times x}{\textcircled{3x}} = 7$$

$$x = \frac{7}{3}$$

$$\text{done} \quad \mathcal{S} = \left\{ \frac{7}{3} \right\}$$

$$\bullet \quad 5x - 1 = 7x + 2$$

$$5x - 7x = 2 + 1$$

$$-2x = 3 \quad \Rightarrow \quad x = \frac{3}{-2}$$

