

**Exercices 15 à 23 : factoriser****D o n n é e s****Factoriser... en reconnaissant un facteur commun**

$$15 \quad \begin{array}{ll} a) & x^2 + 3x \\ c) & 5x^2 + 10x \\ e) & 3x^2 + 9x \end{array} \quad \begin{array}{ll} b) & y^2 - 4y \\ d) & 21z - 7z^2 \\ f) & 14t + 35t^2 \end{array}$$

$$16 \quad \begin{array}{l} A = (x+4)(x-2) + 3(x+4) \\ B = (x+1)(x+3) - 5(x+3) \\ C = (x+7)^2 + 3(x+7) \\ D = (x+5)^2 - (x+5) \end{array}$$

$$17 \quad \begin{array}{l} E = (x-2)(x+3) + (x-2)(4x-1) \\ F = (2x+1)(3x+4) - (x+7)(2x+1) \\ G = (5x-3)(2x-5) - x(5x-3) \end{array}$$

$$18 \quad \begin{array}{l} H = (5x+2)^2 + (5x+2)(x-1) \\ I = (7x+2)^2 - 3x(7x+2) \\ J = 5x(x+1) - (x+1)^2 \end{array}$$

**Factoriser... en reconnaissant une identité remarquable**

$$19 \quad \begin{array}{ll} A = x^2 + 4x + 4 & B = x^2 - 64 \\ C = y^2 - 2y + 1 & D = y^2 - 81 \end{array}$$

$$20 \quad \begin{array}{ll} E = x^2 - 6x + 9 & F = 4x^2 - 25 \\ G = z^2 + 12z + 36 & H = -16 + n^2 \end{array}$$

$$21 \quad \begin{array}{ll} I = 4x^2 + 20x + 25 & J = x^2 - \frac{25}{9} \\ K = 9x^2 - 24x + 16 & L = y^2 - \frac{36}{49} \end{array}$$

$$22 \quad \begin{array}{ll} M = (x+3)^2 - 9 & N = (4x+1)^2 - 25 \\ P = x^2 - (x-1)^2 & Q = (3x+1)^2 - 4x^2 \end{array}$$

23 Parmi les 6 expressions algébriques ci-dessous, relever celles qui correspondent à des développements d'identités remarquables, puis en donner la factorisation :

$$\begin{array}{lll} \textcircled{1} & x^2 + 14x + 49 & \textcircled{2} & x^2 - 5x + 25 & \textcircled{3} & x^2 - 121 \\ \textcircled{4} & 4x^2 + 8x + 1 & \textcircled{5} & 9x^2 - 6x + 1 & \textcircled{6} & x^2 + 36 \end{array}$$