

## N-3

## FACTORISATIONS

Fiche d'exercices : les corrections

Ex 3 Factoriser les expressions suivantes (reconnaître une identité remarquable)

|                                  |                                  |                                    |                                 |
|----------------------------------|----------------------------------|------------------------------------|---------------------------------|
| $A = x^2 + 2x + 1 = (x + 1)^2$   | $B = x^2 - 6x + 9 = (x - 3)^2$   | $C = x^2 + 8x + 16 = (x + 4)^2$    | $D = a^2 - 12a + 3 = (a - 6)^2$ |
| $E = 25 + 10x + x^2 = (5 + x)^2$ | $F = 4 + 8x + 4x^2 = (2 + 2x)^2$ | $G = x^2 - 100 = (x + 10)(x - 10)$ | $H = 25 - x^2 = (5 + x)(5 - x)$ |

Ex 4 Factoriser

|   |   |
|---|---|
| $A = (3x + 1)(5x + 3) + (3x + 1)(2x + 2) = (3x + 1)(7x + 5)$        | $B = (5x + 11)(4y - 1) + (5x + 11)(3y + 2) = (5x + 11)(7y + 1)$ |
| $C = (7x - 3)(x + 1) + (7x - 3)(2x + 2) = (7x - 3)(3x + 3)$         | $D = (8x - 2)(2 - x) + (2 - x)(x + 3) = (2 - x)(9x + 1)$        |
| $E = (x - 2)(2x + 3) - (x - 2)(2x + 2) = (x - 2)(1) = x - 2$        | $F = (2x - 1)(2 + x) + 3(2 + x) = (2 + x)(5x + 5)$              |
| $G = (x - 3)(x + 1) + (x + 1)^2 = (x + 1)(2x - 2)$                  | $H = (5x + 2)(2x + 1) - (5x + 2)(x + 3) = (5x + 2)(x - 2)$      |
| $I = (x + 1)(2x + 1) + (x + 1)(x + 2) + 3(x + 1) = (x + 1)(3x + 6)$ | $J = 3(x - 2) + (x - 2)(x + 3) = (x - 2)(x + 6)$                |
| $K = (7x - 3)^2 + (7x - 3)(x + 2) = (7x - 3)(8x - 1)$               | $L = 2(x - 2)(y + 1) - (2y + 1)(x - 2) = (x - 2)(1) = x - 2$    |
| $M = (a - 3)(x + 1) - (a - 3)(2x + 2) = (a - 3)(-x - 1)$            | $N = (x - 2)^2 - 3(x - 2) = (x - 2)(x - 5)$                     |
| $O = (x - 3)(x + 1) - (x - 3)(x - 1) = (x - 3)(2) = 2(x - 3)$       | $P = (x - 4)^2 + 3(x - 4)(x + 3) = (x - 4)(4x + 5)$             |

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| $E = (x - 2)(2x + 3) - (x - 2)(2x + 2) = (x - 2)(1) = x - 2$        | $F = (2x - 1)(2 + x) + 3(2 + x) = (2 + x)(5x + 5)$              |
| $G = (x - 3)(x + 1) + (x + 1)^2 = (x + 1)(2x - 2)$                  | $H = (5x + 2)(2x + 1) - (5x + 2)(x + 3) = (5x + 2)(x - 2)$      |
| $I = (x + 1)(2x + 1) + (x + 1)(x + 2) + 3(x + 1) = (x + 1)(3x + 6)$ | $J = 3(x - 2) + (x - 2)(x + 3) = (x - 2)(x + 6)$                |
| $K = (7x - 3)^2 + (7x - 3)(x + 2) = (7x - 3)(8x - 1)$               | $L = 2(x - 2)(y + 1) - (2y + 1)(x - 2) = (x - 2)(1) = x - 2$    |
| $M = (a - 3)(x + 1) - (a - 3)(2x + 2) = (a - 3)(-x - 1)$            | $N = (x - 2)^2 - 3(x - 2) = (x - 2)(x - 5)$                     |
| $O = (x - 3)(x + 1) - (x - 3)(x - 1) = (x - 3)(2) = 2(x - 3)$       | $P = (x - 4)^2 + 3(x - 4)(x + 3) = (x - 4)(4x + 5)$             |