

EXERCICE 2A.1 - Retrouver l'expression dont on connaît le carré :

a. $4x^2 = (2x)^2$ b. $9x^2 = (\dots)^2$ c. $36x^2 = (\dots)^2$ d. $25x^2 = (\dots)^2$ e. $49x^2 = (\dots)^2$

f. $81x^2 = (\dots)^2$ g. $100t^2 = (\dots)^2$ h. $400a^2 = (\dots)^2$ i. $144b^2 = (\dots)^2$ j. $16y^2 = (\dots)^2$

EXERCICE 2A.2 - Factoriser en utilisant l'identité remarquable : $a^2 + 2ab + b^2 = (a + b)^2$

$Z = 25x^2 + 30x + 9$ $Z = (5x)^2 + 2 \times 5x \times 3 + 3^2$ $Z = (5x + 3)^2$	$A = x^2 + 10x + 25$	$B = x^2 + 6x + 9$
$C = 36 + 12x + x^2$	$D = 4x^2 + 12x + 9$	$E = 16x^2 + 40x + 25$

EXERCICE 2A.3 - Factoriser en utilisant l'identité remarquable : $a^2 - 2ab + b^2 = (a - b)^2$

$Z = 9x^2 - 30x + 25$ $Z = (3x)^2 - 2 \times 3x \times 5 + 5^2$ $Z = (3x - 5)^2$	$A = x^2 - 2x + 1$	$B = 4x^2 - 20x + 25$
$C = 9 - 6x + x^2$	$D = 36x^2 - 12x + 1$	$E = 100 - 40x + 4x^2$

EXERCICE 2A.4 - Factoriser en utilisant l'identité remarquable : $a^2 - b^2 = (a + b)(a - b)$

$Z = x^2 - 81$ $Z = x^2 - 9^2$ $Z = (x + 9)(x - 9)$	$A = x^2 - 4$	$B = 9 - x^2$
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EXERCICE 2A.5 - Factoriser comme dans l'exemple :

$Z = 9x^2 - 30x + 20$ $Z = 9x^2 - 30x + 25 - 25 + 20$ $Z = (3x - 5)^2 - 25 + 20$ $Z = (3x - 5)^2 - 5$ $Z = (3x - 5)^2 - (\sqrt{5})^2$ $Z = (3x - 5 + \sqrt{5})(3x - 5 - \sqrt{5})$	$A = x^2 + 10x + 16$	$B = x^2 + 6x + 5$
$C = 20 + 12x + x^2$	$D = 4x^2 + 12x + 5$	$E = 16x^2 + 40x + 20$

CORRIGE – NOTRE DAME DE LA MERCI – MONTPELLIER**EXERCICE 2A.1** - Retrouver l'expression dont on connaît le carré :

a. $4x^2 = (2x)^2$ b. $9x^2 = (3x)^2$ c. $36x^2 = (6x)^2$ d. $25x^2 = (5x)^2$ e. $49x^2 = (7x)^2$

f. $81x^2 = (9x)^2$ g. $100t^2 = (10t)^2$ h. $400a^2 = (20a)^2$ i. $144b^2 = (12b)^2$ j. $16y^2 = (4y)^2$

EXERCICE 2A.2 - Factoriser en utilisant l'identité remarquable : $a^2 + 2ab + b^2 = (a + b)^2$

$Z = 25x^2 + 30x + 9$ $Z = (5x)^2 + 2 \times 5x \times 3 + 3^2$ $Z = (5x + 3)^2$	$A = x^2 + 10x + 25$ $A = x^2 + 2 \times x \times 5 + 5^2$ $A = (x + 5)^2$	$B = x^2 + 6x + 9$ $B = x^2 + 2 \times x \times 3 + 3^2$ $B = (x + 3)^2$
$C = 36 + 12x + x^2$ $C = 6^2 + 2 \times 6 \times x + x^2$ $C = (6 + x)^2$	$D = 4x^2 + 12x + 9$ $D = (2x)^2 + 2 \times 2x \times 3 + 3^2$ $D = (2x + 3)^2$	$E = 16x^2 + 40x + 25$ $B = (4x)^2 + 2 \times 4x \times 5 + 5^2$ $B = (4x + 5)^2$

EXERCICE 2A.3 - Factoriser en utilisant l'identité remarquable : $a^2 - 2ab + b^2 = (a - b)^2$

$Z = 9x^2 - 30x + 25$ $Z = (3x)^2 - 2 \times 3x \times 5 + 5^2$ $Z = (3x - 5)^2$	$A = x^2 - 2x + 1$ $A = x^2 - 2 \times x \times 1 + 1^2$ $A = (x - 1)^2$	$B = 4x^2 - 20x + 25$ $B = (2x)^2 - 2 \times 2x \times 5 + 5^2$ $B = (2x - 5)^2$
$C = 9 - 6x + x^2$ $C = 3^2 - 2 \times 3 \times x + x^2$ $C = (3 - x)^2$	$D = 36x^2 - 12x + 1$ $D = (6x)^2 - 2 \times 6x \times 1 + 1^2$ $D = (6x - 1)^2$	$E = 100 - 40x + 4x^2$ $E = 10^2 - 2 \times 10 \times 2x + (2x)^2$ $E = (10 - 2x)^2$

EXERCICE 2A.4 - Factoriser en utilisant l'identité remarquable : $a^2 - b^2 = (a + b)(a - b)$

$Z = x^2 - 81$ $Z = x^2 - 9^2$ $Z = (x + 9)(x - 9)$	$A = x^2 - 4$ $A = x^2 - 2^2$ $A = (x + 2)(x - 2)$	$B = 9 - x^2$ $B = 3^2 - x^2$ $B = (3 + x)(3 - x)$
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EXERCICE 2A.5 - Factoriser comme dans l'exemple :

$Z = 9x^2 - 30x + 20$ $Z = 9x^2 - 30x + 25 - 25 + 20$ $Z = (3x - 5)^2 - 25 + 20$ $Z = (3x - 5)^2 - 5$ $Z = (3x - 5)^2 - (\sqrt{5})^2$ $Z = (3x - 5 + \sqrt{5})(3x - 5 - \sqrt{5})$	$A = x^2 + 10x + 16$ $A = x^2 + 10x + 25 - 25 + 16$ $A = (x + 5)^2 - 25 + 16$ $A = (x + 5)^2 - 9$ $A = (x + 5)^2 - 3^2$ $A = (x + 5 + 3)(x + 5 - 3)$ $A = (x + 8)(x + 2)$	$B = x^2 + 6x + 5$ $B = x^2 + 6x + 9 - 9 + 5$ $B = (x + 3)^2 - 9 + 5$ $B = (x + 3)^2 - 4$ $B = (x + 3)^2 - 2^2$ $B = (x + 3 + 2)(x + 3 - 2)$ $B = (x + 5)(x + 1)$
$C = 20 + 12x + x^2$ $C = x^2 + 12x + 36 - 36 + 20$ $C = (x + 6)^2 - 36 + 29$ $C = (x + 6)^2 - 16$ $C = (x + 6)^2 - 4^2$ $C = (x + 6 + 4)(x + 6 - 4)$ $C = (x + 10)(x + 2)$	$D = 4x^2 + 12x + 5$ $D = (2x)^2 + 2 \times 2x \times 3 + 5$ $D = 4x^2 + 12x + 9 - 9 + 5$ $D = (2x + 3)^2 - 9 + 5$ $D = (2x + 3)^2 - 4$ $D = (2x + 3)^2 - 2^2$ $D = (2x + 3 + 2)(2x + 3 - 2)$ $D = (2x + 5)(2x + 1)$	$E = 16x^2 + 40x + 20$ $E = (4x)^2 + 2 \times 4x \times 5 + 20$ $E = 4x^2 + 20x + 25 - 25 + 20$ $E = (4x + 5)^2 - 25 + 20$ $E = (4x + 5)^2 - 5$ $E = (4x + 5)^2 - (\sqrt{5})^2$ $E = (4x + 5 + \sqrt{5})(4x + 5 - \sqrt{5})$