



## Factoriser à l'aide des identités remarquables

**Exercice n°1 :** Factoriser les expressions suivantes à l'aide de l'identité remarquable

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

$$16y^2 + 8y + 1 =$$

$$36t^2 + 96t + 64 =$$

$$64t^2 + 32t + 4 =$$

$$49y^2 + 126y + 81 =$$

$$9t^2 + 30t + 25 =$$

$$36t^2 + 120t + 100 =$$

$$t^2 + 6t + 9 =$$

$$49x^2 + 14x + 1 =$$

$$25t^2 + 40t + 16 =$$

$$100t^2 + 160t + 64 =$$

**Exercice n°2 :** Factoriser les expressions suivantes à l'aide de l'identité remarquable

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

$$81u^2 - 36u + 4 =$$

$$36t^2 - 96t + 64 =$$

$$9x^2 - 18x + 9 =$$

$$16x^2 - 16x + 4 =$$

$$4y^2 - 16y + 16 =$$

$$64y^2 - 96y + 36 =$$

$$64t^2 - 80t + 25 =$$

$$81t^2 - 162t + 81 =$$

$$y^2 - 10y + 25 =$$

$$4y^2 - 40y + 100 =$$

**Exercice n°3 :** Factoriser les expressions suivantes à l'aide de l'identité remarquable

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

$$49 - u^2 =$$

$$4t^2 - 49 =$$

$$81x^2 - 1 =$$

$$4 - 16u^2 =$$

$$100x^2 - 49 =$$

$$25t^2 - 81 =$$

$$81 - 9x^2 =$$

$$36 - 16x^2 =$$

$$25x^2 - 25 =$$

$$100 - x^2 =$$

**Exercice n°4 :** Factoriser les expressions suivantes à l'aide de l'identité remarquable.

$$64x^2 - 64x + 16 =$$

$$25t^2 - 20t + 4 =$$

$$x^2 - 49 =$$

$$49 - 4t^2 =$$

$$36y^2 - 60y + 25 =$$

$$100x^2 + 200x + 100 =$$

$$9x^2 + 18x + 9 =$$

$$x^2 - 20x + 100 =$$

$$4y^2 + 36y + 81 =$$

$$36t^2 - 25 =$$



Correction

Exercice n°1 : Factoriser les expressions suivantes à l'aide de l'identité remarquable

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

$$16y^2 + 8y + 1 = (4y + 1)^2$$

$$64t^2 + 32t + 4 = (8t + 2)^2$$

$$9t^2 + 30t + 25 = (3t + 5)^2$$

$$t^2 + 6t + 9 = (t + 3)^2$$

$$25t^2 + 40t + 16 = (5t + 4)^2$$

$$36t^2 + 96t + 64 = (6t + 8)^2$$

$$49y^2 + 126y + 81 = (7y + 9)^2$$

$$36t^2 + 120t + 100 = (6t + 10)^2$$

$$49x^2 + 14x + 1 = (7x + 1)^2$$

$$100t^2 + 160t + 64 = (10t + 8)^2$$

Exercice n°2 : Factoriser les expressions suivantes à l'aide de l'identité remarquable

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

$$81u^2 - 36u + 4 = (9u - 2)^2$$

$$9x^2 - 18x + 9 = (3x - 3)^2$$

$$4y^2 - 16y + 16 = (2y - 4)^2$$

$$64t^2 - 80t + 25 = (8t - 5)^2$$

$$y^2 - 10y + 25 = (y - 5)^2$$

$$36t^2 - 96t + 64 = (6t - 8)^2$$

$$16x^2 - 16x + 4 = (4x - 2)^2$$

$$64y^2 - 96y + 36 = (8y - 6)^2$$

$$81t^2 - 162t + 81 = (9t - 9)^2$$

$$4y^2 - 40y + 100 = (2y - 10)^2$$

Exercice n°3 : Factoriser les expressions suivantes à l'aide de l'identité remarquable

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

$$49 - u^2 = (7 + u)(7 - u)$$

$$81x^2 - 1 = (9x + 1)(9x - 1)$$

$$100x^2 - 49 = (10x + 7)(10x - 7)$$

$$81 - 9x^2 = (9 + 3x)(9 - 3x)$$

$$25x^2 - 25 = (5x + 5)(5x - 5)$$

$$4t^2 - 49 = (2t + 7)(2t - 7)$$

$$4 - 16u^2 = (2 + 4u)(2 - 4u)$$

$$25t^2 - 81 = (5t + 9)(5t - 9)$$

$$36 - 16x^2 = (6 + 4x)(6 - 4x)$$

$$100 - x^2 = (10 + x)(10 - x)$$

Exercice n°4 : Factoriser les expressions suivantes à l'aide de l'identité remarquable.

$$64x^2 - 64x + 16 = (8x - 4)^2$$

$$x^2 - 49 = (x + 7)(x - 7)$$

$$36y^2 - 60y + 25 = (6y - 5)^2$$

$$25t^2 - 20t + 4 = (5t - 2)^2$$

$$49 - 4t^2 = (7 + 2t)(7 - 2t)$$

$$100x^2 + 200x + 100 = (10x + 10)^2$$

$$9x^2 + 18x + 9 = (3x + 3)^2$$

$$4y^2 + 36y + 81 = (2y + 9)^2$$

$$x^2 - 20x + 100 = (x - 10)^2$$

$$36t^2 - 25 = (6t + 5)(6t - 5)$$