

<b>Produits remarquables : correctif</b>
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Effectue en utilisant les formules des produits remarquables :

$$1. (2a + 3b)^2 = 4a^2 + 9b^2 + 12ab$$

$$2. (5x + 6y)^2 = 25x^2 + 36y^2 + 60xy$$

$$3. (a - 2b)^2 = a^2 + 4b^2 - 4ab$$

$$4. (-3a - 4b)^2 = (3a + 4b)^2 = 9a^2 + 16b^2 + 24ab$$

$$5. (a^2 + b^2)^2 = a^4 + b^4 + 2a^2b^2$$

$$6. \left(\frac{2}{3} + a\right)^2 = \frac{4}{9} + a^2 + \frac{4}{3}a$$

$$7. (6a + 0,2)^2 = \left(6a + \frac{2}{10}\right)^2 = 36a^2 + \frac{4}{100} + \frac{24}{10}a$$

$$8. (7a - 5b)(7a + 5b) = 49a^2 - 25b^2$$

$$9. (5 + x)(x - 5) = (x - 5)(x + 5) = x^2 - 25$$

$$10. (a^3 + b^2)^2 = a^6 + b^4 + 2a^3b^2$$

$$11. (x + 1/5)^2 = x^2 + \frac{1}{25} + \frac{2}{5}x$$

$$12. (3a - 1)(3a + 1) = 9a^2 - 1$$

$$13. (-2 - xy)^2 = (2 + xy)^2 = 4 + x^2y^2 + 4xy$$

$$14. (-ab + 11)(11 + ab) = (11 - ab)(11 + ab) = 121 - a^2b^2$$

$$15. (2x + 5)(2x - 5)(4x^2 + 25) = (4x^2 - 25)(4x^2 + 25) = 16x^4 - 625$$

$$16. \left(\frac{4}{3}x + \frac{1}{3}y\right)^2 = \frac{16}{9}x^2 + \frac{1}{9}y^2 + 2 \cdot \frac{4}{3} \cdot \frac{1}{3}xy = \frac{16}{9}x^2 + \frac{1}{9}y^2 + \frac{8}{9}xy$$

$$17. (6a + 0,3)^2 = \left(6a + \frac{3}{10}\right)^2 = 36a^2 + \frac{9}{100} + \frac{6 \cdot 3 \cdot 2}{10}a = 36a^2 + 0,09 + 3,6a^2$$

$$18. (0,5a + 0,4b)^2 = \left(\frac{5}{10}a + \frac{4}{10}b\right)^2 = \frac{25}{100}a^2 + \frac{16}{100}b^2 + \frac{2 \cdot 20}{100}ab = 0,25a^2 + 0,16b^2 + 0,4ab$$

$$19. (11a^3 - 11a)^2 = 121a^6 + 121a^2 - 242a^4$$

$$20. \left(\frac{a}{2} - \frac{b}{3}\right)^2 = \frac{a^2}{4} + \frac{b^2}{9} - 2 \cdot \frac{a}{2} \cdot \frac{b}{3} = \frac{a^2}{4} + \frac{b^2}{9} - \frac{ab}{3}$$