

PRODOTTI NOTEVOLI

QUADRATO DI UN BINOMIO

$$1. (a-b)^2 = a^2 - 2ab + b^2$$

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

$$2. \left(\frac{1}{2}x^2 + 2y\right)^2 = \frac{1}{4}x^4 + 4y^2 + 2x^2y$$

$$(0,5x^3 + 2y)^2 = 0,25x^6 + 2x^3y + 4y^2$$

$$3. (4y-x)^2 = 16y^2 - 8xy + x^2$$

$$\left(2b^{2m} + \frac{1}{2}a^n\right)^2 = 4b^{4m} + 2a^n b^{2m} + \frac{1}{4}a^{2n}$$

$$4. \left(\frac{3}{5}x^2 + y\right)^2 = \frac{9}{25}x^4 + \frac{6}{5}x^2y + y^2$$

$$\left(-\frac{1}{3}xy^3 - 2y\right)^2 = \frac{1}{9}x^2y^6 + \frac{4}{3}xy^4 + 4y^2$$

$$5. \left(\frac{a}{3} - \frac{2x}{5}\right)^2 = \frac{a^2}{9} - \frac{4ax}{15} + \frac{4x^2}{25}$$

$$\left(x - \frac{4}{5}\right)^2 = x^2 - \frac{8}{5}x + \frac{16}{25}$$

$$6. (0,1x - 2xy)^2 = \frac{1}{100}x^2 - \frac{2}{5}x^2y + 4x^2y^2$$

$$(1-x^3)^2 = 1 - 2x^3 + x^6$$

$$7. (0,2 - x^2)^2 = 0,04 - 0,4x^2 + x^4$$

$$(x^5 + x^3)^2 = x^{10} + 2x^8 + x^6$$

$$8. (2 - x^4)^2 = 4 - 4x^4 + x^8$$

$$(1 - x^6)^2 = 1 - 2x^6 + x^{12}$$

$$9. \left(-\frac{7}{2}a^3 - \frac{1}{14}ab^2\right)^2 = \frac{49}{4}a^6 + \frac{1}{2}a^4b^2 + \frac{1}{196}a^2b^4$$

$$10. \left(-\frac{3}{4}xy + xy^5\right)^2 = \frac{9}{16}x^2y^2 - \frac{3}{2}x^2y^6 + x^2y^{10}$$

$$11. \left(-\frac{1}{3}ab^3 - a^3b\right)^2 = \frac{1}{9}a^2b^6 + \frac{2}{3}a^4b^4 + a^6b^2$$

$$12. (a - 2b)^2 = a^2 + 4b^2 - 4ab$$

$$\left(\frac{1}{2}x - 2y\right)^2 = \frac{1}{4}x^2 - 2xy + 4y^2$$

$$13. (a^4 - 2a^3b)^2 = a^8 + 4a^6b^2 - 4a^7b$$

$$(-3x^2 - 4xy^3)^2 = 9x^4 + 24x^3y^3 + 16x^2y^6$$

$$14. (2 - a^5)^2 = 4 + a^{10} - 4a^5$$

$$(2x^3 + y)^2 = y^2 + 4x^3y + 4x^6$$

$$15. \left(2x^3y + \frac{1}{2}x\right)^2 = 4x^6y^2 + \frac{1}{4}x^2 + 2x^4y$$

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

$$17. (2x^m - 3y^n)^2 = 4x^{2m} - 12x^m y^n + 9y^{2n}$$

$$18. (x^n - 2y^m)^2 = x^{2n} - 4x^n y^m + 4y^{2m}$$

$$19. \left(-\frac{1}{2}x^3a^4 + xa^2\right)^2 = \frac{1}{4}x^6a^8 - x^4a^6 + x^2a^4$$

$$20. \left(-\frac{3}{4}x^3 - y^2\right)^2 = y^4 + \frac{3}{2}x^3y^2 + \frac{9}{16}x^6$$

$$21. (2a^{2n} - 3b^{3m})^2 = 4a^{4n} + 9b^{6m} - 12a^{2n}b^{3m}$$

$$22. (3a^2b^n - a^3b^2)^2 = -6a^5b^{n+2} + 9a^4b^{2n} + a^6b^4$$

QUADRATO DI UN POLINOMIO

23. $(x^2 - y + 1)^2 = x^4 + y^2 + 1 - 2x^2y + 2x^2 - 2y$
24. $(a + 2b + c)^2 = a^2 + 4b^2 + c^2 + 4ab + 2ac + 4bc$
25. $(x + 3y - 4)^2 = x^2 + 9y^2 + 16 + 6xy - 8x - 24y$
26. $(2 - 3x + y^2)^2 = 4 + 9x^2 + y^4 - 12x + 4y^2 - 6xy^2$
27. $(2x - 5x^2 + y)^2 = 4x^2 + 25x^4 + y^2 - 20x^3 + 4xy - 10x^2y$
28. $(0,1x^2 + xy - 0,2)^2 = 0,01x^4 + x^2y^2 + 0,04 + 0,2x^3y - 0,04x^2 - 0,4xy$
29. $(5x^3 + 7x^2 + x)^2 = 25x^6 + 49x^4 + x^2 + 70x^5 + 10x^4 + 14x^3$
30. $(1 - 3a + 2a^2)^2 = 1 + 9a^2 + 4a^4 - 6a + 4a^2 - 12a^3$
31. $(1,3a^3 - 0,1a - 1,3)^2 = \frac{16}{9}a^6 + \frac{1}{100}a^2 + \frac{169}{100} - \frac{4}{15}a^4 - \frac{52}{15}a^3 + \frac{13}{50}a$
32. $(a^{n-1} + a^n + a^2)^2 = a^{2n-2} + a^{2n} + a^4 + 2a^{2n-1} + 2a^{n+1} + 2a^{n+2}$
33. $(a^{n-1} + a^{3n} - 1)^2 = a^{2n-2} + a^{6n} + 1 + 2a^{4n-1} - 2a^{n-1} - 2a^{3n}$
34. $(2x^2 + nx^n + x)^2 = 4x^4 + n^2x^{2n} + x^2 + 4nx^{n+2} + 4x^3 + 2nx^{n+1}$
35. $(1 - x^{n-1} + x^{n+1})^2 = 1 + x^{2n-2} + x^{2n+2} - 2x^{n-1} + 2x^{n+1} - 2x^{2n}$
36. $(a + 2b - 3c - 2ab)^2 = a^2 + 4b^2 + 9c^2 + 4a^2b^2 + 4ab - 6ac - 4a^2b - 12bc - 8ab^2 + 12abc$
37. $(x - 1 + x^2 - x^3)^2 = x^2 + 1 + x^4 + x^6 - 2x + 2x^3 - 2x^4 - 2x^2 + 2x^3 - 2x^5 =$
 $= 1 - x^4 + x^6 - 2x + 4x^3 - x^2 - 2x^5$

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38. $(2a + b - 1)^2 - (2a - b - 1)^2 - 4b(2a - 1) =$
 $= 4a^2 + b^2 + 1 + 4ab - 4a - 2b - (4a^2 + b^2 + 1 - 4ab - 4a + 2b) - 8ab + 4b =$
 $= 4a^2 + b^2 + 1 + 4ab - 4a - 2b - 4a^2 - b^2 - 1 + 4ab + 4a - 2b - 8ab + 4b = 0$
39. $\left\{ \left[\left(x^3 - 2xy^2 + \frac{5}{2}x^2y \right) : (-x) - y \left(y - \frac{5}{2}x \right) \right]^2 - (-y)^4 \right\} : \left(\frac{1}{2}x \right)^2 =$
 $= \left\{ \left[-x^2 + 2y^2 - \frac{5}{2}xy - y^2 + \frac{5}{2}xy \right]^2 - (y^4) \right\} : \left(\frac{1}{4}x^2 \right) =$
 $= \left\{ x^4 + y^4 - 2x^2y^2 - y^4 \right\} : \left(\frac{1}{4}x^2 \right) = 4x^2 - 8y^2$
40. $(a^n + a^2 + 1)^2 - (a^n + 3a^2)^2 - 2a^n(1 - 2a^2) =$
 $= a^{2n} + a^4 + 1 + 2a^{n+2} + 2a^n + 2a^2 - a^{2n} - 6a^{n+2} - 9a^4 - 2a^n + 4a^{n+2} = -8a^4 + 1 + 2a^2$