Esercizi sui prodotti notevoli

Somma per differenza

1. $(a+1)(a-1) =$ $\qquad$ $[a^2 - 1]$
2. $(x+2)(x-2) =$ $\qquad$ $[x^2 - 4]$
3. $(c-1)(c+1) =$ $\qquad$ $[c^2 - 1]$
4. $(b+4)(b-4) =$ $\qquad$ $[b^2 - 16]$
5. $(ab+3)(ab-3) =$ $\qquad$ $[a^2b^2 - 9]$
6. $(b^2-1)(b^2+1) =$ $\qquad$ $[b^4 - 1]$
7. $(x^2+2)(x^2-2) =$ $\qquad$ $[x^4 - 4]$
8. $(a^2+b)(a^2-b) =$ $\qquad$ $[a^4 - b^2]$
9. $(x^2y+5)(x^2y-5) =$ $\qquad$ $[x^4y^2 - 25]$
10. $(4+y^2)(4-y^2) =$ $\qquad$ $[16 - y^4]$
11. $(a^3x+3)(a^3x-3) =$ $\qquad$ $[a^6x^2 - 9]$
12. $(ab^2c-4)(ab^2c+4) =$ $\qquad$ $[a^2b^4c^2 - 16]$

Quadrato di un binomio

13. $(x+1)^2 =$ $\qquad$ $[x^2 + 2x + 1]$
14. $(a-2)^2 =$ $\qquad$ $[a^2 - 4a + 4]$
15. $(2y+1)^2 =$ $\qquad$ $[4y^2 + 4y + 1]$
16. $(c-4)^2 =$ $\qquad$ $[c^2 - 8c + 16]$
17. $(xy+2)^2 =$ $\qquad$ $[x^2y^2 + 4xy + 4]$
18. $(a^2+1)^2 =$ $\qquad$ $[a^4 + 2a^2 + 1]$
19. $(y^2-2)^2 =$ $\qquad$ $[y^4 - 4y^2 + 4]$
20. $(b^2+c)^2 =$ $\qquad$ $[b^4 + 2b^2c + c^2]$
21. $(a^2c-6)^2 =$ $\qquad$ $[a^4c^2 - 12a^2c + 36]$
22. $(3+z^2)^2 =$ $\qquad$ $[9 + 6z^2 + z^4]$
23. $(ab^4-5)^2 =$ $\qquad$ $[a^2b^8 - 10ab^4 + 25]$
24. $(xy^3z+3)^2 =$ $\qquad$ $[x^2y^6z^2 + 6xy^3z + 9]$

Quadrato di un trinomio

25. $(a + b + 1)^2 =$ $\qquad$ $[a^2 + b^2 + 1 + 2ab + 2b + 2a]$

26. $(x + y - 2)^2 =$ $\qquad$ $[x^2 + y^2 + 4 + 2xy - 4y - 4x]$

27. $(a + 1 - 2b)^2 =$ $\qquad$ $[a^2 + 1 + 4b^2 + 2a - 4b - 4ab]$

28. $(2x + 3y - 5)^2 =$ $\qquad$ $[4x^2 + 9y^2 + 25 + 12xy - 30y - 20x]$

29. $(ab + c + 3)^2 =$ $\qquad$ $[a^2b^2 + c^2 + 9 + 2abc + 6c + 6ab]$

30. $(x^2 - y + 1)^2 =$ $\qquad$ $[x^4 + y^2 + 1 - 2x^2y - 2y + 2x^2]$

31. $(a^2 - 2b - 3)^2 =$ $\qquad$ $[a^4 + 4b^2 + 9 - 4a^2b + 12b - 6a^2]$

32. $(2x^2 + y + 3z)^2 =$ $\qquad$ $[4x^4 + y^2 + 9z^2 + 4x^2y + 6yz + 12x^2z]$

33. $(a^2b + 3c - 5)^2 =$ $\qquad$ $[a^4b^2 + 9c^2 + 25 + 6a^2bc - 30c - 10a^2b]$

34. $(x^3 + 3y + z^2)^2 =$ $\qquad$ $[x^6 + 9y^2 + z^4 + 6x^3y + 6yz^2 + 2x^3z^2]$

35. $(a^2b^4 + 2c^3 - 3)^2 =$ $\qquad$ $[a^4b^8 + 4c^6 + 9 + 4a^2b^4c^3 - 12c^3 - 6a^2b^4]$

36. $(2ab^2c - d^2 + 5)^2 =$ $\qquad$ $[4a^2b^4c^2 + d^4 + 25 - 4ab^2cd^2 - 10d^2 + 20ab^2c]$

Cubo di un binomio

37. $(a + 1)^3 =$ $\qquad$ $[a^3 + 3a^2 + 3a + 1]$

38. $(x - 2)^3 =$ $\qquad$ $[x^3 - 6x^2 + 12x - 8]$

39. $(2a + 2)^3 =$ $\qquad$ $[8a^3 + 24a^2 + 24a + 8]$

40. $(y - 3)^3 =$ $\qquad$ $[y^3 - 9y^2 + 27y - 27]$

41. $(ab + 5)^3 =$ $\qquad$ $[a^3b^3 + 15a^2b^2 + 75ab + 125]$

42. $(x^2 - 1)^3 =$ $\qquad$ $[x^6 - 3x^4 + 3x^2 - 1]$

43. $(ab^2 - 3)^3 =$ $\qquad$ $[a^3b^6 - 9a^2b^4 + 27ab^2 - 27]$

44. $(x^2 + y)^3 =$ $\qquad$ $[x^6 + 3x^4y + 3x^2y^2 + y^3]$

45. $(x^2y - 4)^3 =$ $\qquad$ $[x^6y^3 - 12x^4y^2 + 48x^2y - 64]$

46. $(2x + y^3)^3 =$ $\qquad$ $[8x^3 + 12x^2y^3 + 6xy^6 + y^9]$

47. $(2xy^4 - 3z)^3 =$ $\qquad$ $[8x^3y^{12} - 36x^2y^8z + 54xy^4z^2 - 27z^3]$

48. $(ab^5c^2 + 6)^3 =$ $\qquad$ $[a^3b^{15}c^6 + 18a^2b^{10}c^4 + 108ab^5c^2 + 216]$