



Perfect Squares & Difference of Squares

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A binomial is an algebraic expression with two terms.
Squaring a binomial results in a perfect square trinomial (three terms).
On the other hand, the product of a sum binomial with a difference binomial results in the difference of two squares.

Perfect Squares

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

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

$$(a + 2)^2 = (a + 2)(a + 2) = a^2 + 4a + 4$$

$$(2a + 3)^2 = (2a + 3)(2a + 3) = 4a^2 + 12a + 9$$

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

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

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

$$(3a - 2)^2 = (3a - 2)(3a - 2) = 9a^2 - 12a + 4$$

Difference of Squares

Difference of Squares $(a + b)(a - b) = a^2 - b^2$

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

$$(a + 2)(a - 2) = a^2 - 2a + 2a - 4 = a^2 - 4$$

$$(2a + 1)(2a - 1) = 4a^2 - ab + ba - 1 = 4a^2 - 1$$

Instructions: Expand the binomials below.

1

$$(c + 2)(c - 2)$$



2	$(t - 3)^2$
3	$(e + 4)^2$
4	$(b + 5)(b - 5)$
5	$(y + 2)^2$
6	$(r - 5)^2$
7	$(w + 6)^2$
8	$(q + 4)(q - 4)$
9	$(i - 6)^2$
10	$(u + 8)^2$
11	$(k + 7)(k - 7)$



12	$(l + 9)^2$
13	$(g - 7)^2$
14	$(a + 8)(a - 8)$
15	$(p + 10)^2$
16	$(s + 9)(s - 9)$
17	$(f + 11)^2$
18	$(y - 12)^2$
19	$(u - 10)^2$
20	$(j + 12)(j - 12)$
21	$(v + 12)^2$



22	$(2x + 1)(2x - 1)$
23	$(3k + 2)^2$
24	$(2a - 5)^2$
25	$(4b + 3)(4b - 3)$
26	$(5e + 4)^2$
27	$(7d + 3)(7d - 3)$
28	$(9n - 2)^2$
29	$(8h + 5)^2$
30	$(11b + 4)(11b - 4)$
31	$(12p + 7)^2$



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$$(a + 2)(a - 2) = a^2 - 2a + 2a - 4 = a^2 - 4$$

$$(2a + 1)(2a - 1) = 4a^2 - ab + ba - 1 = 4a^2 - 1$$

Instructions: Expand the binomials below.

1

$$(t + 7)^2$$



2	$(y - 5)^2$
3	$(e + 8)(e - 8)$
4	$(2a - 3)^2$
5	$(9j + 2)^2$
6	$(7x + 4)(7x - 4)$
7	$(6q - 5)^2$
8	$(10w + 3)(10w - 3)$
9	$(8f + 5)^2$
10	$(4u + 5)^2$
11	$(5s - 4)^2$



12	$(9k + 3)(9k - 3)$
13	$(2o - 11)^2$
14	$(7p + 9)^2$
15	$(8r + 11)(8r - 11)$
16	$(12d + 5)^2$
17	$(8v + 11)^2$
18	$(13h - 2)^2$
19	$(15z + 2)(15z - 2)$
20	$(6p + 5)(6p - 5)$
21	$(9g + 11)^2$



22	$(13c - 3)^2$
23	$(10t + 11)^2$
24	$(9n - 5)^2$
25	$(12m + 7)(12m - 7)$
26	$(7j + 12)^2$
27	$(6q + 11)^2$
28	$(13s - 5)^2$
29	$(12k + 11)^2$
30	$(11m + 8)(11m - 8)$
31	$(11b + 12)^2$