

Factoring Perfect Square Trinomials ($a \neq 1$)

Name _____

Date _____ Period _____

A perfect square trinomial is a trinomial in the form...

$$x^2 + 2xy + y^2 \text{ or } x^2 - 2xy + y^2$$

Perfect square trinomials can be factored into a binomial squared

$$x^2 + 2xy + y^2 = (x + y)^2 \quad x^2 - 2xy + y^2 = (x - y)^2$$

How to recognize a perfect square trinomial

$$4x^2 + 12x + 9$$

when $a \neq 1$, we can ask does $2 \cdot \sqrt{a} \cdot \sqrt{c} = |b|$?

How to recognize a perfect square trinomial

$$4x^2 + 36x + 81$$

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How to recognize a perfect square trinomial

$$64x^2 - 144x + 81$$

when $a \neq 1$, we can ask does $2 \cdot \sqrt{a} \cdot \sqrt{c} = |b|$?

How to recognize a perfect square trinomial

$$25x^2 - 30x + 9$$

when $a \neq 1$, we can ask does $2 \cdot \sqrt{a} \cdot \sqrt{c} = |b|$?

How to factor a perfect square trinomial

$$4x^2 + 12x + 9$$

$$a = 4; b = 12; c = 9$$

Yes, $4x^2 + 12x + 9$ is a perfect square trinomial

Draw parenthesis, put $\sqrt{a} \cdot x$ in front, then the sign of b , then the \sqrt{c} .

How to factor a perfect square trinomial

$$4x^2 + 36x + 81$$

$$a = 4; b = 36; c = 81$$

Yes, $4x^2 + 36x + 81$ is a perfect square trinomial

Draw parenthesis, put $\sqrt{a} \cdot x$ in front, then the sign of b , then the \sqrt{c} .

How to factor a perfect square trinomial

$$64x^2 - 144x + 81$$

$$a = 64; b = -144; c = 81$$

Yes, $64x^2 - 144x + 81$ is a perfect square trinomial

Draw parenthesis, put $\sqrt{a} \cdot x$ in front, then the sign of b , then the \sqrt{c} .

How to factor a perfect square trinomial

$$25x^2 - 30x + 9$$

$$a = 25; b = -30; c = 9$$

Yes, $25x^2 - 30x + 9$ is a perfect square trinomial

Draw parenthesis, put $\sqrt{a} \cdot x$ in front, then the sign of b , then the \sqrt{c} .