

Factoring a Difference of Squares

Finding the dimensions from the area.

Learning Goal:

By the of today, I will be able to recognize a Difference of Squares and apply an algebraic shortcut for factoring.

Nov 24-3:02 PM

Factor
(use the area to find the dimensions)

$x^2 - 4$

Feb 12-11:53 AM

Factor
(use the area to find the dimensions)

$x^2 - 9$

Feb 12-11:53 AM

Factor

(use the area to find the dimensions)

$4x^2 - 9$

x^2

$-x^2$

x

$-x$

x

$-x$

-1

1

Feb 12-11:53 AM

Is there a pattern...?

A Difference of squares follows the pattern:

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

Nov 24-3:09 PM

Factor the following:

$$x^2 - 25$$

Apr 21-9:41 PM

Factor the following:

$$16x^2 - 49$$

Apr 21-9:41 PM

Factor the following:

Difference of Squares

Decomposition

$$x^2 - 9$$

Apr 21-9:41 PM

The following are called PERFECT SQUARES
(no decimals)

$$5^2 = 25$$

$$7^2 = 49$$

Expand:

$$(x-3)^2$$

$$(2x+3)^2$$

These are called perfect square trinomials.

Apr 13-11:15 AM

Perfect Square Patterns

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

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

Nov 8-1:18 PM

Seeing the pattern of a perfect square trinomial $(a + b)^2 = a^2 + 2ab + b^2$

Factor

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

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

b^2
 $b^2 = 9$
 $(b)^2 = (3)^2$
 $b = 3$

$2ab = 12x$
 $2ab = 2(2x)(3)$

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

Apr 21-9:56 PM

EX: Factor the following

Use decomposition unless you "SEE" the pattern.

$$x^2 - 2x + 1$$

$$9x^2 + 24x + 16$$

Apr 21-9:57 PM

Page 115-16 #1a, 2, 3, 4, 11

Apr 13-11:22 AM