

Factoring a Quadratic (Box Method)

Date:

Standards

A.SSE.1.a - Interpret parts of an expression, such as terms, factors, and coefficients.

A.SSE.2 - Use the structure of an expression to identify ways to rewrite it.

Essential Questions

- How do I factor a quadratic with 3 terms

How do I
factor a
quadratic
with 3 terms

$$x^2 + 6x + 8$$

x **4**

Options

4 x 2

8 x 1

	x	4
x	x^2	$4x$
2	$2x$	8

$$(x + 4)(x + 2)$$

How do I
factor a
quadratic
with 3 terms

$$x^2 + 8x + 15$$

x **5**

Options

3 x 5

1 x 15

	x	5
x	x^2	$5x$
3	$3x$	15

$$(x + 5)(x + 3)$$

How do I
factor a
quadratic
with 3 terms

YOU

$$x^2 + 10x + 9$$

$$x^2 + 10x + 21$$

How do I
factor a
quadratic
with 3 terms

YOU

$$x^2 + 10x + 9$$

x **1**

Options

1 x 9

3 x 3

x	x^2	x
9	$9x$	9

$$(x + 1)(x + 9)$$

How do I
factor a
quadratic
with 3 terms

$$x^2 + 10x + 21$$

x **7**

YOU

Options

1 x 21

3 x 7

x	x^2	$7x$
3	$3x$	21

$$(x + 7)(x + 3)$$

How do I
factor a
quadratic
with 3 terms

$$x^2 + 2x - 15$$

x **-3**

Options

1 x 15 (-)

3 x 15 (-)

x	x^2	$-3x$
5	$5x$	-15

$$(x - 3)(x + 5)$$

How do I
factor a
quadratic
with 3 terms

$$x^2 - 7x - 18$$

x

-9

Options

x

x^2

$-9x$

2

$2x$

-18

$$(x - 9)(x + 2)$$

How do I
factor a
quadratic
with 3 terms

YOU

$$x^2 - 2x - 24$$

x

4

Options

x

x^2

$-9x$

-6

$2x$

-24

$$(x + 4)(x - 6)$$

How do I
factor a
quadratic
with 3 terms

$$x^2 - 10x + 16$$

$$x \quad -8$$

Options

x	x^2	$-8x$
-2	$-2x$	16

$$(x - 8)(x - 2)$$

How do I
factor a
quadratic
with 3 terms

$$x^2 - 22x + 21$$

$$x \quad -21$$

Options

x	x^2	$-21x$
-1	$-x$	21

$$(x - 21)(x - 1)$$

How do I
factor a
quadratic
with 3 terms

YOU

$$x^2 - 11x + 28$$

x

-4

Options

x

x^2

$-4x$

-7

$-7x$

21

$$(x - 4)(x - 7)$$

How do I
factor a
quadratic
with 3 terms

$$x^2 + 6x + 9$$

x

3

Options

x

x^2

$3x$

9

$3x$

9

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

How do I
factor a
quadratic
with 3 terms

YOU

$$x^2 - 8x + 16$$

x

-4

Options

x

x^2

$-4x$

-4

$-4x$

16

$$(x - 4)(x - 4) \quad (x - 4)^2$$

How do I
factor a
quadratic
with 3 terms

$$x^2 - 9$$

x

-3

Options

x

x^2

$-3x$

3

$3x$

-9

$$(x + 3)(x - 3)$$

How do I
factor a
quadratic
with 3 terms

YOU

$$x^2 - 16$$

x

-4

Options

x	x^2	$-4x$
4	$4x$	-16

$$(x + 4)(x - 4)$$

REFLECTION:

- 1) Answer one of the essential questions
- 2) How have previous lessons helped or connect with this lesson?
- 3) What are you still confused on or what new info did you learn?

Homework: Factoring – Box Method

Factor the following polynomials

$$1) x^2 + 5x + 6$$

$$2) x^2 + 10x + 21$$

$$3) x^2 + 8x + 12$$

$$4) x^2 + 16x + 15$$

$$5) x^2 + 4x + 4$$

$$6) x^2 - 25$$