

FACTOR means find the multiplicative building blocks of a number (or expression).

OR

Use the area to find the dimensions of the rectangle.

There may be more than one answer.

Ex. Find the dimensions of the rectangle with an area of 16 m^2

Factoring can be done using an algebraic approach or a graphical (area model) approach.

Nov 24-1:43 PM

Homework

Page 102 - 104 #1 - $7acf$,
 $9acf$

Challenge 14a, 15a

Sep 23-9:15 PM

There are three types of factoring:

1. Common
2. Trinomial Decomposition (and Simple)
3. Difference of Squares

Sep 23-9:10 PM

x^2

$-x^2$

x

$-x$

x

$-x$

-1

1

Factor $4x + 8$
 (use the area to find the dimensions)

Feb 12-11:53 AM

Finding the Greatest Common Factor

Find the Greatest Common Factor (GCF) between the following three terms: $8a^2$, $16a$, $12a^3$

$8a^2$ $16a$ $12a^3$

$$8a^2 = (4) (2) (a) (a) \quad 16a = (4) (4) (a) \quad 12a^3 = (4) (3) (a) (a) (a)$$

$$8a^2 = (2) (2) (2) (a) (a) \quad 16a = (2) (2) (2) (2) (a) \quad 12a^3 = (2) (2) (3) (a) (a) (a)$$

What factors do ALL of the terms have in common?

$$8a^2 = (2) \mathbf{(2)} \mathbf{(2)} \mathbf{(a)} (a) \quad 16a = (2) (2) \mathbf{(2)} \mathbf{(2)} \mathbf{(a)} \quad 12a^3 = \mathbf{(2)} \mathbf{(2)} (3) \mathbf{(a)} (a) (a)$$

All of the terms have a "2 x 2 x a" in common,
when
this is multiplied out it is a product of "4a".

Therefore the GCF for $8a^2$, $16a$ and $12a^3$, is "4a".

$$8a^2 = \mathbf{(4a)} (2a) \quad 16a = \mathbf{(4a)} (4) \quad 12a^3 = \mathbf{(4a)} (3a^2)$$

Mar 30-9:23 AM

Self Check

Find the Greatest Common Factor (GCF) between the following three terms: $18a^2$, $27a$, $45a^3$

$18a^2$ $27a$ $45a^3$

What factors do ALL of the terms have in common?

Mar 30-9:23 AM

Factoring is working from the Area back to the Dimensions.

Nov 24-2:32 PM

x^2

$-x^2$

x

$-x$

x

$-x$

-1

1

Factor
(use the area to find the dimensions)

$$2x^2 - 9x + 4$$

Feb 12-11:53 AM

Algebraic Technique for Factoring
Trinomials is called "Decomposition"

Nov 24-2:34 PM

Part One

I am looking for TWO numbers, that will multiply
(product) for P and add (sum) for S.

(a) $P = 10$ $S = 7$

(b) $P = 16$ $S = 10$

(c) $P = -24$ $S = 2$

(d) $P = -15$ $S = 2$

(e) $P = 6$ $S = -5$

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Part Two - Common Factoring Revisited

Factor the following:

(a) $2xA - 7A =$

(b) $2x \text{ 😊} - 7 \text{ 😊} =$

(c) $2x(?) - 7(?) =$

(d) $2x(x+1) - 7(x+1) =$

(e) $2x(\text{Math Rocks}) - 7(\text{Math Rocks}) =$

Nov 24-2:40 PM

Factor

$$3x(A) - 5(A) =$$

$$3x(x+1) - 5(x+1) =$$

$$5x(x+7) - 3(x+7) =$$

$$-3x(x-6) + 2(x-6) =$$

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Part Three

Factor

$$3x^2 + 3x + 5x + 5$$

$$2x^2 + 4x - 3x - 6$$

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Putting it all together...

Factor

$$2x^2 - 9x + 4$$

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Factor (Decomposition or Simple)

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

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x^2

$-x^2$

x

$-x$

x

$-x$

-1

1

Factor $4x^2 - 9$
 (use the area to find the dimensions)

Feb 12-11:53 AM

Factor the following:

Difference of Squares

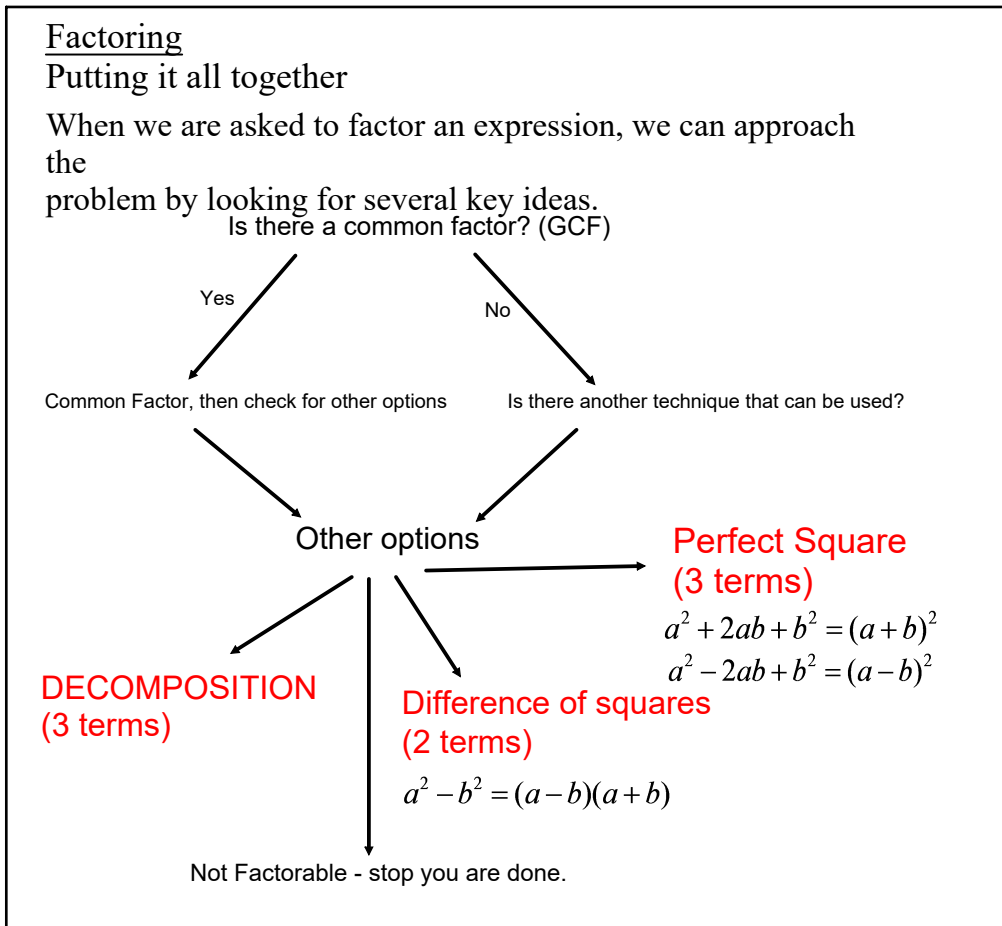
Decomposition

$$x^2 - 9$$

Apr 21-9:41 PM

Putting it all together...

Apr 25-12:53 PM



Apr 14-11:07 AM

Factor the following completely:

$$15x^3 - 45x^2$$

Apr 14-11:49 AM

Factor the following completely:

$$9x^2 - 18x + 9$$

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Factor the following completely:

$$12x^2 - 27$$

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Factor the following completely:

$$4.5x^2 + 18x + 13.5$$

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Homework

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9acf

Challenge 14a, 15a

Sep 23-9:15 PM