

The Pythagorean Theorem

Theorem

Webquest

Score (/)

Name: _____ Date: _____

Period: _____

Pythagorean Theorem Webquest

Directions: You will need to answer questions on the Pythagorean Theorem by going to the website:
<https://www.exploremathindemand.com/pythagorean-theorem.html>

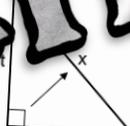
What is the Pythagorean Theorem? The Pythagorean Theorem states that given a _____ of the _____ when _____ is _____ to the _____ of the other _____ when _____.

In other words, _____ where _____ and _____ are the _____ and _____ is the _____.

Labeling a Right Triangle: Draw the triangles below and fill in the blanks.

Note – As stated earlier, _____ applied to _____

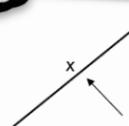
1



15 ft

Solve Below:

2



20 ft

27 ft

Solve Below:

3

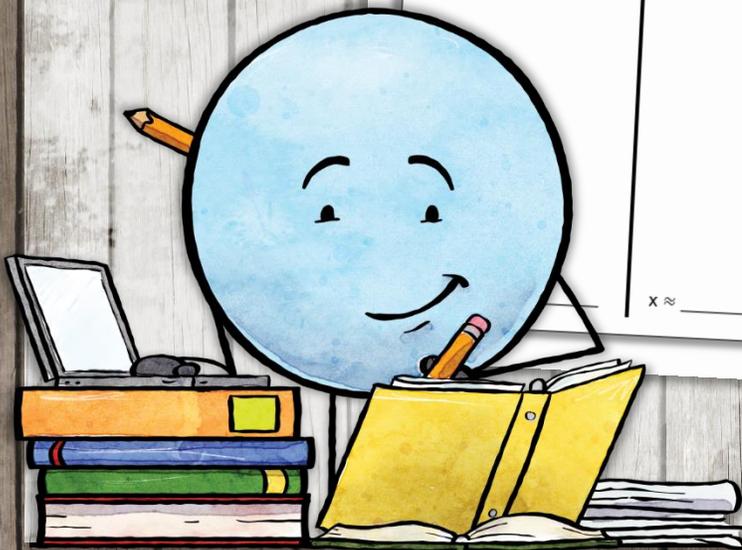


24 ft

25 ft

Solve Below:

TECHNOLOGY



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Thank you!!!

Teacher Notes



- Students will need access to a device.
- I like to print pages 4-7 back to back, and stapled.
- After students have completed the webquest, there is a quiz. The quiz is practice for the students. It will show the answer for each question after they have answered it. This gives students' instant feedback. You can decide if you want students to screenshot the quiz results and email it to you for a grade, or just use the quiz as practice.

Please let me know if you have any other questions about the webquest!

You can email me at

mathindemand@hotmail.com.

Thanks so much for your purchase!

Pythagorean Theorem Webquest

Directions: You will need to answer questions on the Pythagorean Theorem by going to the website:

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What is the Pythagorean Theorem?

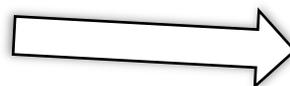
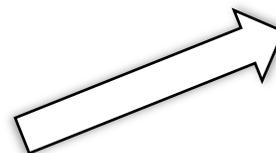
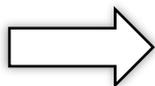
The Pythagorean Theorem states that given a _____

_____, the _____ of the _____
of the _____ when _____ is _____ to the _____ of the other _____ when
_____.

In other words, where ___ and ___ are the _____ and ___ is the _____.

Labeling a Right Triangle: Draw the triangles below and fill in the blanks.

Note – As stated earlier, the _____ is only
applied to _____.



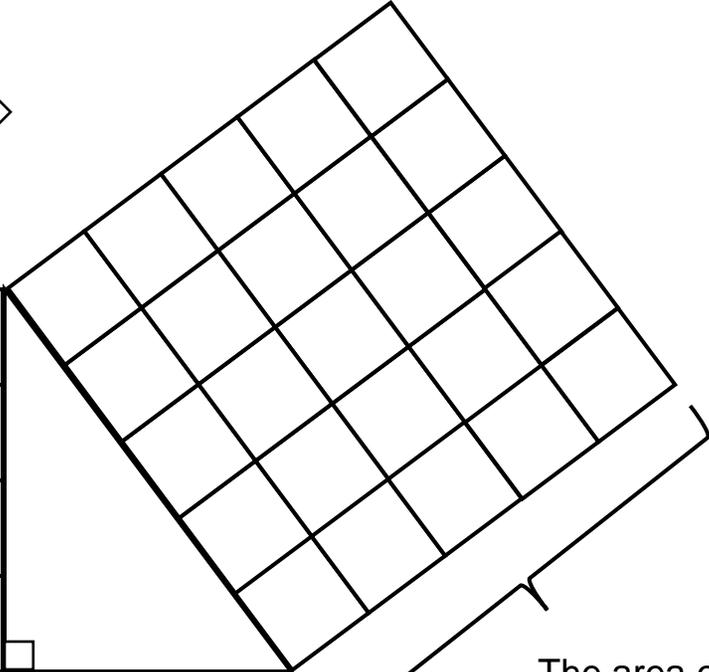
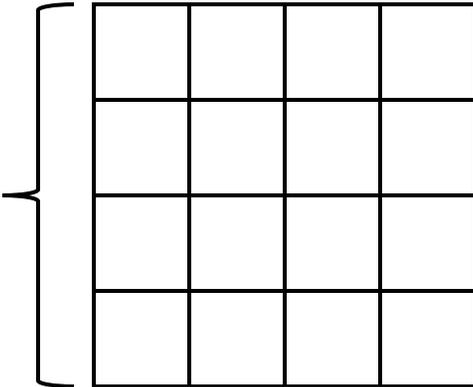
It is important to note that it is fine to _____ the location of “___” and “___” in the _____ as long as “___” is
always the _____ of the _____.

The Pythagorean Theorem

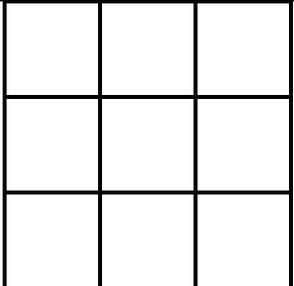


Think about the area of a square!
 We know that the area of a square is _____. Thus,...

The area of this square is _____ x _____ which is equal to _____.



The area of this square is _____ x _____ which is equal to _____.



The area of this square is _____ x _____ which is equal to _____.

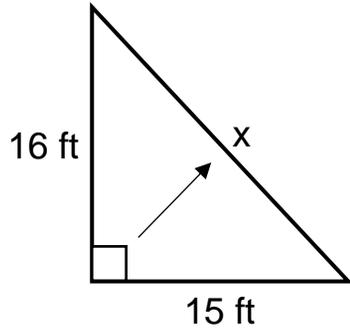
If you look at the _____ with an _____ of _____, you can see that this _____ has the same number of _____ as the _____ with an _____ of _____ and _____. Thus, the _____ of _____ "_____" is _____ to the _____ of the _____ of _____ "_____" and the _____ of _____ "_____".
 _____ + _____ = _____

Color the square units. Label the triangle and squares!

Examples & Your Turn for #1 & #2

1

Example

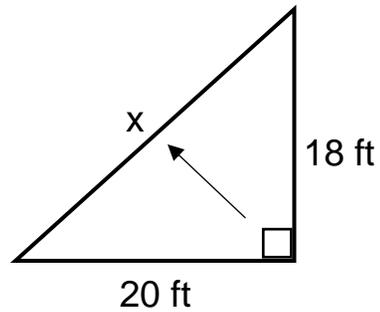


Solve Below:

$x \approx$ _____

1

Your Turn

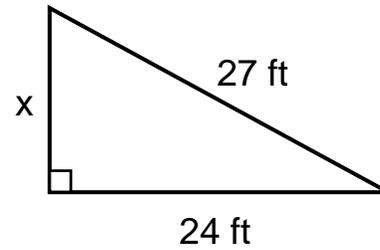


Solve Below:

$x \approx$ _____

2

Example

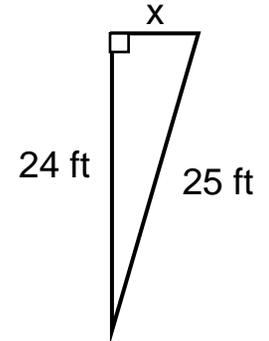


Solve Below:

$x \approx$ _____

2

Your Turn



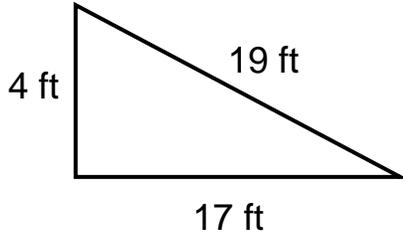
Solve Below:

$x =$ _____

Examples & Your Turn for #3 & #4

3

Example

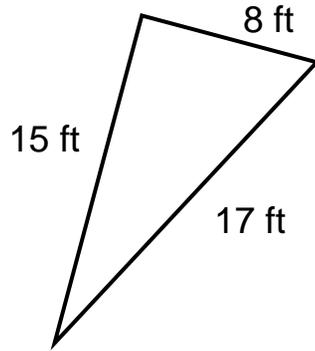


Solve Below:

Right Triangle? _____

3

Your Turn



Solve Below:

Right Triangle? _____

4

Example

29 in, 20 in, 21 in

Solve Below:

Right Triangle? _____

4

Your Turn

10 in, 30 in, 15 in

Solve Below:

Right Triangle? _____

Pythagorean Theorem Webquest

Directions: You will need to answer the questions on transformations by going to the following website:

<https://www.exploremathindemand.com/pythagorean-theorem.html>

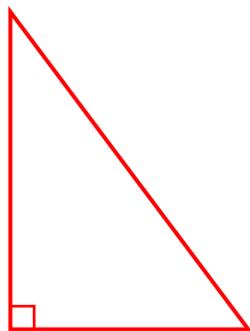
What is the Pythagorean Theorem?

The Pythagorean Theorem states that given a right triangle, the length of the longest side of the triangle when squared is equal to the sum of the other lengths when squared.

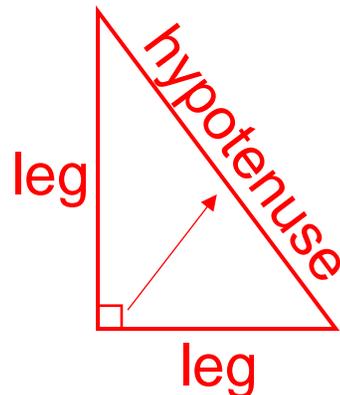
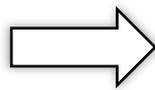
In other words, $a^2 + b^2 = c^2$ where a and b are the legs and c is the hypotenuse.

Labeling a Right Triangle: Draw the triangles below and fill in the blanks.

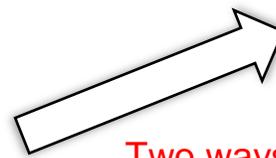
Note – As stated earlier, the Pythagorean Theorem is only applied to right triangles.



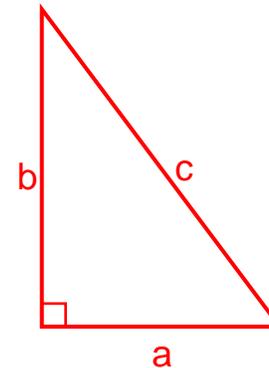
Given a right triangle...



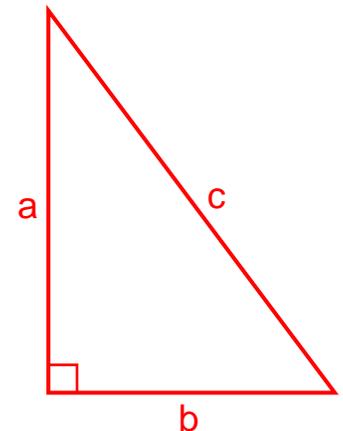
Locate the longest side of the right triangle



Two ways to label the triangle...



OR



It is important to note that it is fine to switch the location of "a" and "b" in the triangle as long as "c" is always the longest side of the triangle.

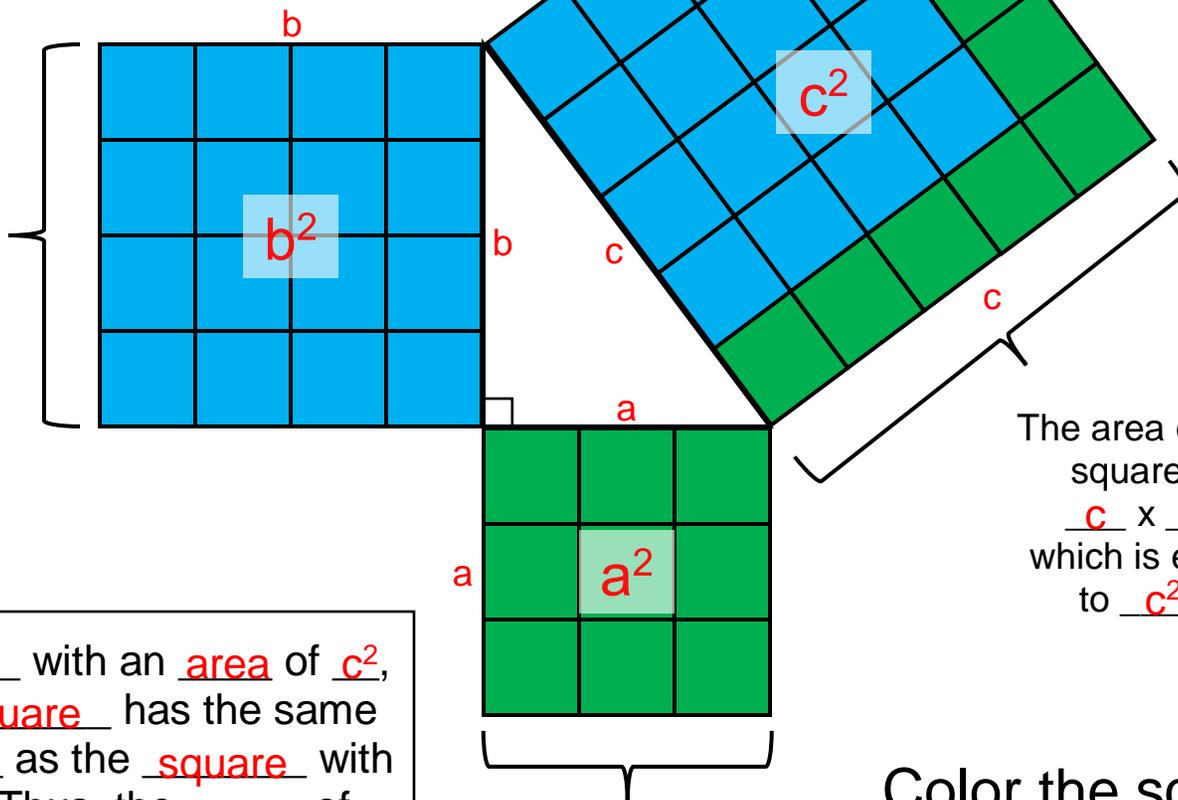
The Pythagorean Theorem

Think about the area of a square!

We know that the area of a square is s^2 . Thus,...

Color the square units!

The area of this square is $b \times b$ which is equal to b^2 .



The area of this square is $c \times c$ which is equal to c^2 .

If you look at the square with an area of c^2 , you can see that this square has the same number of square units as the square with an area of a^2 and b^2 . Thus, the area of square “c” is equal to the sum of the area of square “a” and the area of square “b”.

$$a^2 + b^2 = c^2$$

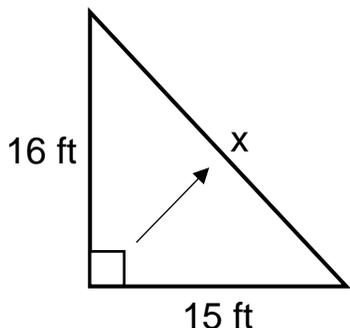
The area of this square is $a \times a$ which is equal to a^2 .

Color the square units. Label the triangle and squares!

Examples & Your Turn for #1 & #2

①

Example



Solve Below:

$$a^2 + b^2 = c^2$$

$$(16\text{ft})^2 + (15\text{ft})^2 = x^2$$

$$256\text{ft}^2 + 225\text{ft}^2 = x^2$$

$$481\text{ft}^2 = x^2$$

$$\sqrt{481\text{ft}^2} = \sqrt{x^2}$$

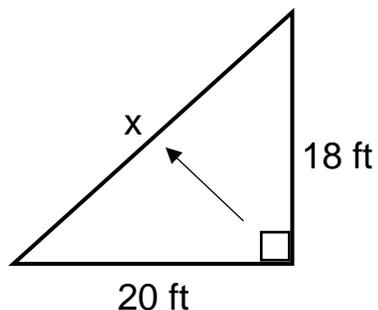
$$21.9317\dots \text{ft} = x$$

$$x \approx 21.9 \text{ ft}$$

$$x \approx \underline{21.9 \text{ ft}}$$

①

Your Turn



Solve Below:

$$a^2 + b^2 = c^2$$

$$(18\text{ft})^2 + (20\text{ft})^2 = x^2$$

$$324\text{ft}^2 + 400\text{ft}^2 = x^2$$

$$724\text{ft}^2 = x^2$$

$$\sqrt{724\text{ft}^2} = \sqrt{x^2}$$

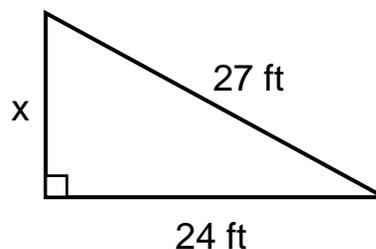
$$26.9072\dots \text{ft} = x$$

$$x \approx 26.9 \text{ ft}$$

$$x \approx \underline{26.9 \text{ ft}}$$

②

Example



Solve Below:

$$a^2 + b^2 = c^2$$

$$x^2 + (24\text{ft})^2 = (27\text{ft})^2$$

$$x^2 + 576\text{ft}^2 = 729\text{ft}^2$$

$$\underline{- 576\text{ft}^2} \quad \underline{- 576\text{ft}^2}$$

$$x^2 = 153\text{ft}^2$$

$$\sqrt{x^2} = \sqrt{153\text{ft}^2}$$

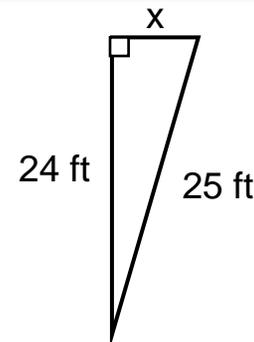
$$x = 12.3693\dots \text{ft}$$

$$x \approx 12.4 \text{ ft}$$

$$x \approx \underline{12.4 \text{ ft}}$$

②

Your Turn



Solve Below:

$$a^2 + b^2 = c^2$$

$$x^2 + (24\text{ft})^2 = (25\text{ft})^2$$

$$x^2 + 576\text{ft}^2 = 625\text{ft}^2$$

$$\underline{- 576\text{ft}^2} \quad \underline{- 576\text{ft}^2}$$

$$x^2 = 49\text{ft}^2$$

$$\sqrt{x^2} = \sqrt{49\text{ft}^2}$$

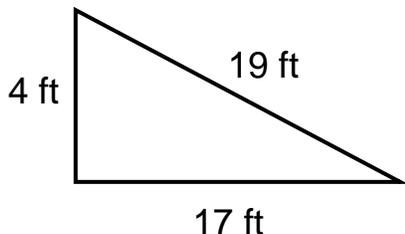
$$x = 7 \text{ ft}$$

$$x = \underline{7 \text{ ft}}$$

Examples & Your Turn for #3 & #4

③

Example



Solve Below:

$$a^2 + b^2 = c^2$$

$$(4\text{ft})^2 + (17\text{ft})^2 = (19\text{ft})^2$$

$$16\text{ft}^2 + 576\text{ft}^2 = 729\text{ft}^2$$

$$592\text{ft}^2 = 729\text{ft}^2$$

NO! 592 ft^2 is not equal to 729 ft^2 .

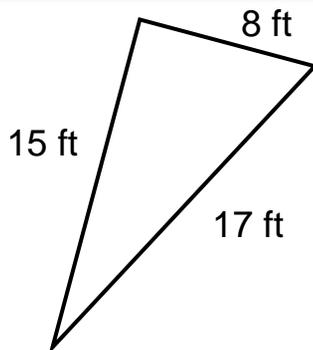
In other words,
 $59 \text{ ft}^2 \neq 729 \text{ ft}^2$.

Hence, the triangle is NOT a right triangle.

Right Triangle? NO

③

Your Turn



Solve Below:

$$a^2 + b^2 = c^2$$

$$(8\text{ft})^2 + (15\text{ft})^2 = (17\text{ft})^2$$

$$64\text{ft}^2 + 225\text{ft}^2 = 289\text{ft}^2$$

$$289\text{ft}^2 = 289\text{ft}^2$$

YES! 289 ft^2 is equal to 289 ft^2 .

In other words,
 $289 \text{ ft}^2 = 289 \text{ ft}^2$.

Hence, the triangle is a right triangle.

Right Triangle? YES

④

Example

29 in, 20 in, 21 in

Solve Below:

$$a^2 + b^2 = c^2$$

$$(20\text{ft})^2 + (21\text{ft})^2 = (29\text{ft})^2$$

$$400\text{ft}^2 + 441\text{ft}^2 = 841\text{ft}^2$$

$$841\text{ft}^2 = 841\text{ft}^2$$

YES! 841 ft^2 is equal to 841 ft^2 .

In other words,
 $841 \text{ ft}^2 = 841 \text{ ft}^2$.
Hence, the triangle is a right triangle.

Right Triangle? YES

④

Your Turn

10 in, 30 in, 15 in

Solve Below:

$$a^2 + b^2 = c^2$$

$$(10\text{ft})^2 + (15\text{ft})^2 = (30\text{ft})^2$$

$$100\text{ft}^2 + 225\text{ft}^2 = 900\text{ft}^2$$

$$335\text{ft}^2 = 900\text{ft}^2$$

NO! 335 ft^2 is not equal to 900 ft^2 .

In other words,
 $335 \text{ ft}^2 \neq 900 \text{ ft}^2$.
Hence, the triangle is NOT a right triangle.

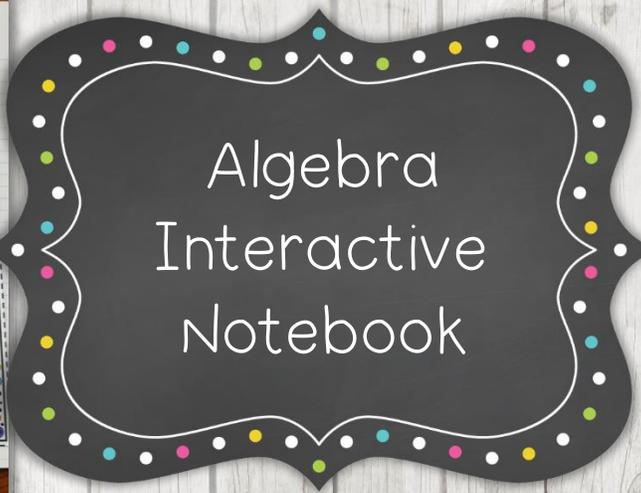
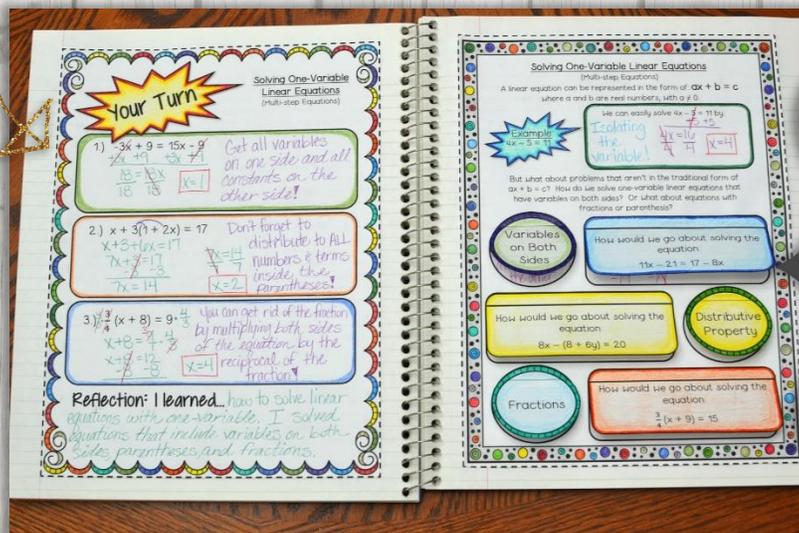
Right Triangle? NO

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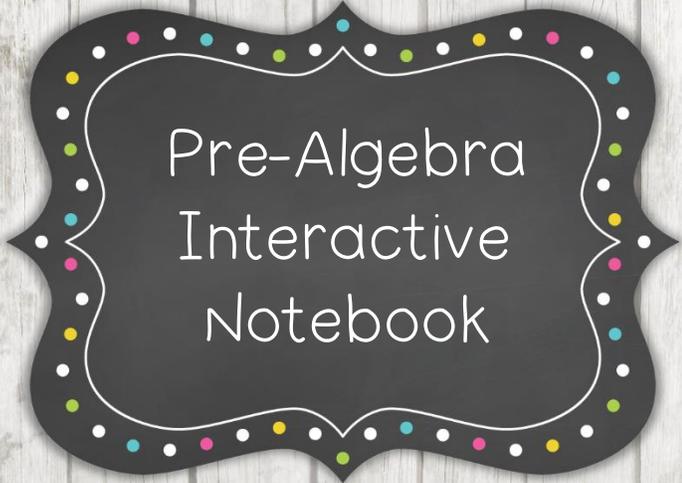


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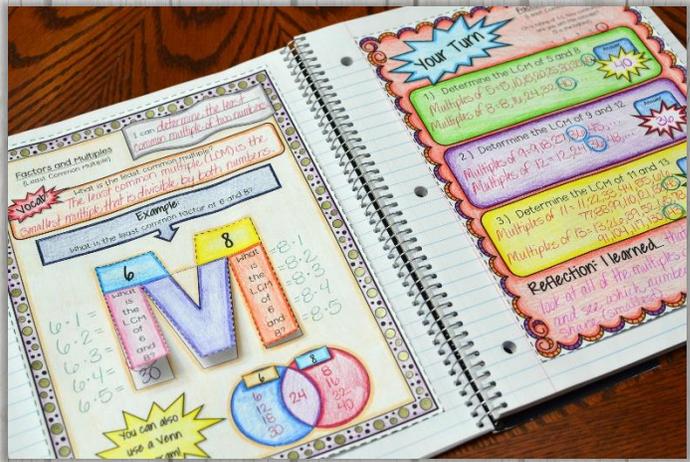
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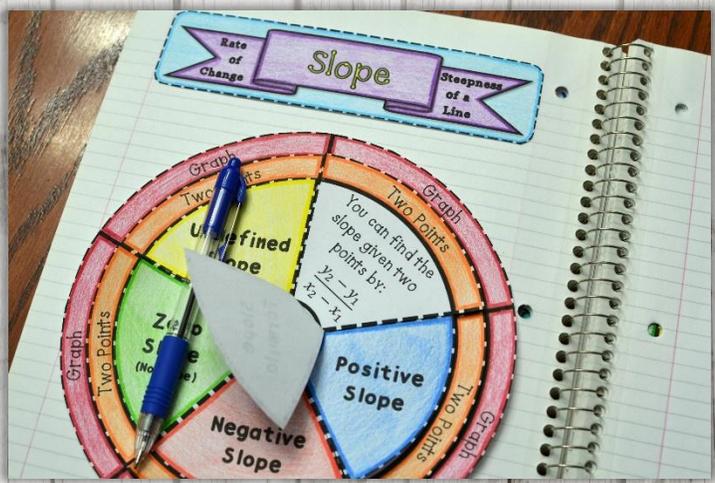
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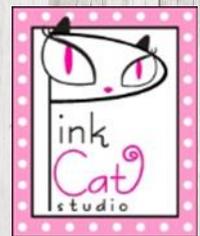
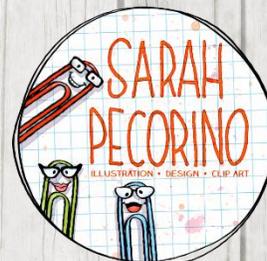


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