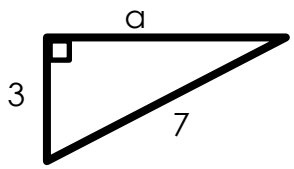
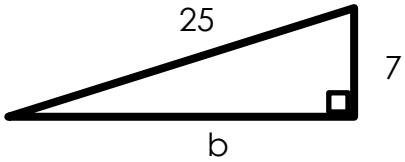
# THE PYTHAGOREAN THEOREM

Find the unknown side lengths.

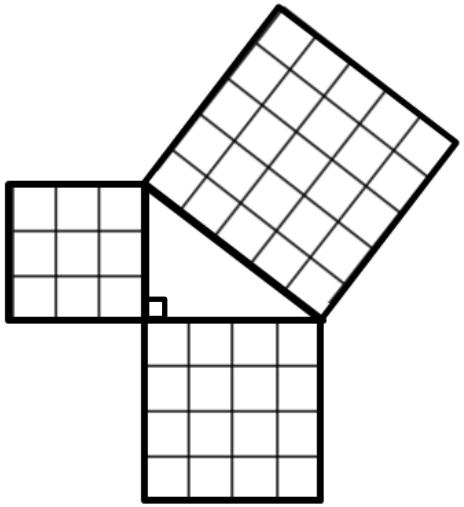
Example 4:




Example 5:




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



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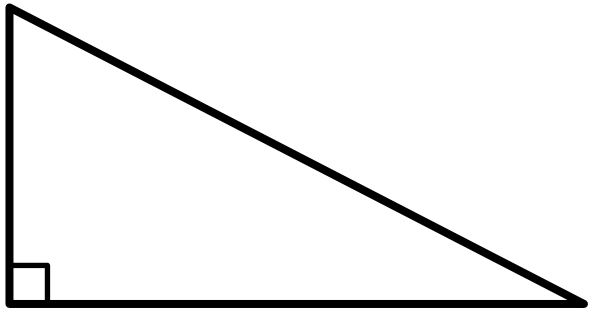
VOCABULARY

Cut this piece off

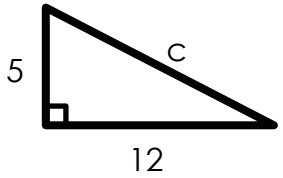


## Example 6:

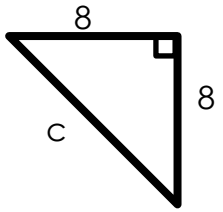
Bobby leans a 15-ft ladder against his house. The base of the ladder is placed 4 feet from the base of the house. How far up the house does the ladder reach?

Find the unknown side lengths.

## Example 1:




## Example 2:




## Example 3:

Jane and Zachary start walking at the same point, but Zachary walks 5 feet north while Jane walks 75 feet east. How far apart are Jane and Zachary when they stop?

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SOLVING FOR A OR B

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SOLVING FOR C

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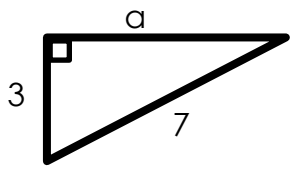
Answer Key!

# THE PYTHAGOREAN THEOREM

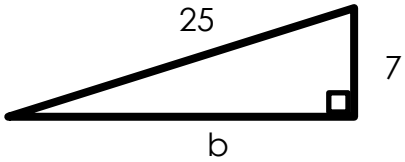
Find the unknown side lengths.

## Example 4:




$a^2 + b^2 = c^2$
$a^2 + 3^2 = 7^2$
$a^2 + 9 = 49$
$a^2 = 40$
$\sqrt{a^2} = \sqrt{40}$
$a = \sqrt{40}$
$a = \sqrt{4} \cdot \sqrt{10}$
$a = 2\sqrt{10}$

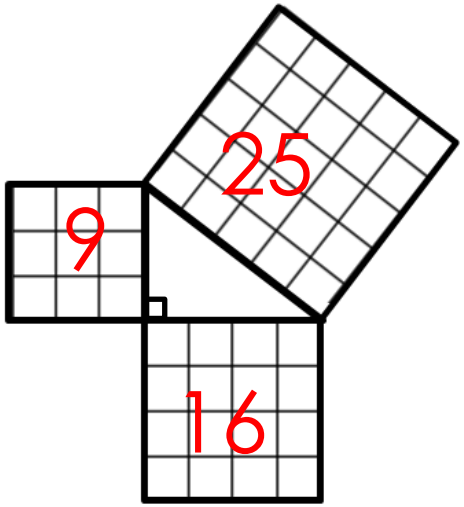
## Example 5:




$a^2 + b^2 = c^2$
$7^2 + b^2 = 25^2$
$49 + b^2 = 625$
$b^2 = 576$
$\sqrt{b^2} = \sqrt{576}$
$b = 24$

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

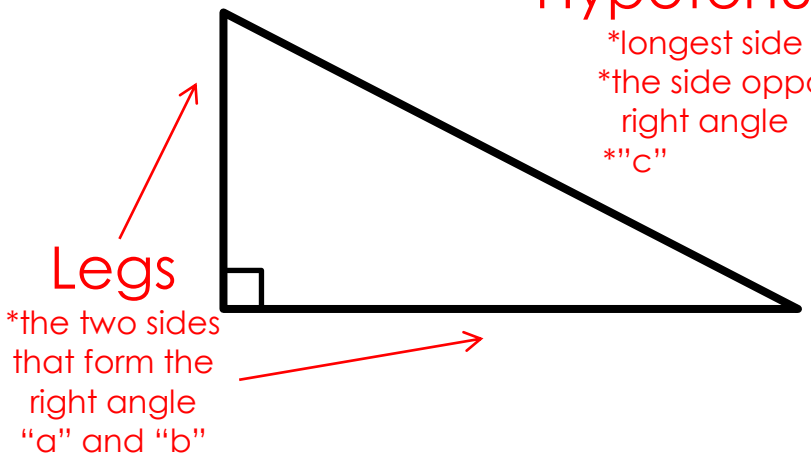
$3^2 + 4^2 = 5^2$
$9 + 16 = 25$
$25 = 25$




Cut this piece off

VOCABULARY

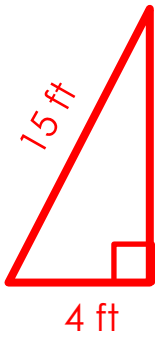
Cut this piece off




## Example 6:

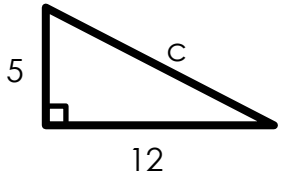
Bobby leans a 15-ft ladder against his house. The base of the ladder is placed 4 feet from the base of the house. How far up the house does the ladder reach?

$a^2 + b^2 = c^2$
$4^2 + b^2 = 15^2$
$16 + b^2 = 225$
$b^2 = 209$
$\sqrt{b^2} = \sqrt{209}$
b = 14.46 ft



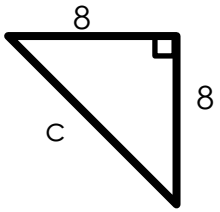

Find the unknown side lengths.

## Example 1:




$a^2 + b^2 = c^2$
$5^2 + 12^2 = c^2$
$25 + 144 = c^2$
$169 = c^2$
$\sqrt{169} = \sqrt{c^2}$
13 = c

## Example 2:

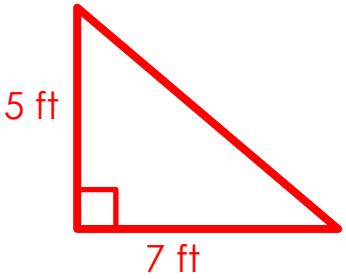



$a^2 + b^2 = c^2$
$8^2 + 8^2 = c^2$
$64 + 64 = c^2$
$128 = c^2$
$\sqrt{128} = \sqrt{c^2}$
$\sqrt{128} = c$
$\sqrt{64} \cdot \sqrt{2} = c$
$8\sqrt{2} = c$

## Example 3:

Jane and Zachary start walking at the same point, but Zachary walks 5 feet north while Jane walks 7 feet east. How far apart are Jane and Zachary when they stop?

$a^2 + b^2 = c^2$
$5^2 + 12^2 = c^2$
$25 + 49 = c^2$
$74 = c^2$
$\sqrt{74} = \sqrt{c^2}$
8.6 = c




Cut this piece off

SOLVING FOR A OR B

Cut this piece off

SOLVING FOR C

Cut this piece off

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**Directions:**

Step 1: Print pages 1 & 2 front to back (flip pages on long edge) so that the text faces in opposite directions.

Step 2: Cut the page in half (along the dotted line).

Step 3: Take the half page that has the title "The Pythagorean Theorem and place that on top of the half page with example 5 on it.

Step 4: Fold in half & secure with staples.

Step 5: Create the tabs at the bottom by cutting off the extra pieces.