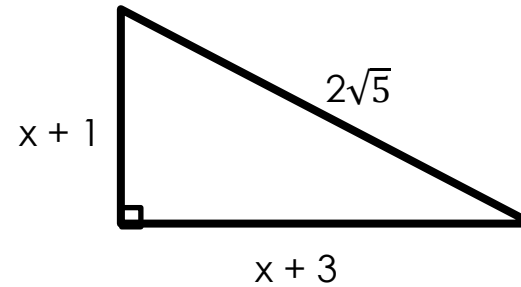


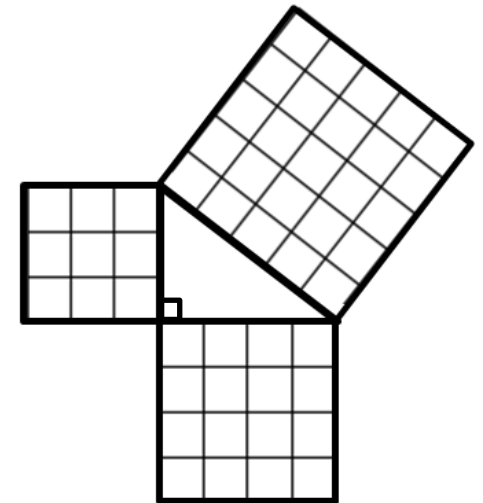
THE PYTHAGOREAN THEOREM

Example 5:

Find the unknown side lengths.



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



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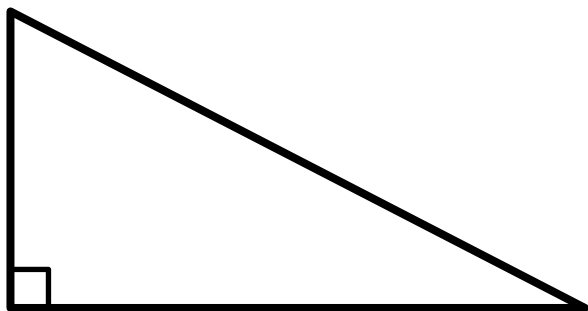
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VOCABULARY

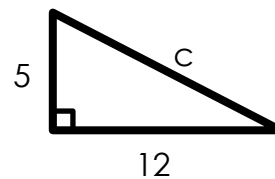
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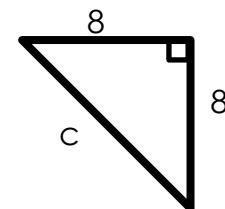
Example 1:

Find the unknown side length.



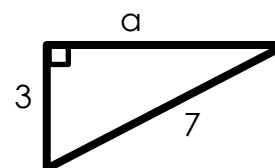
Example 2:

Find the unknown side length.



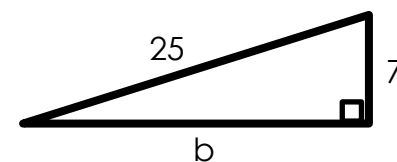
Example 3:

Find the unknown side length.



Example 4:

Find the unknown side length.



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EXAMPLES

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EXAMPLES

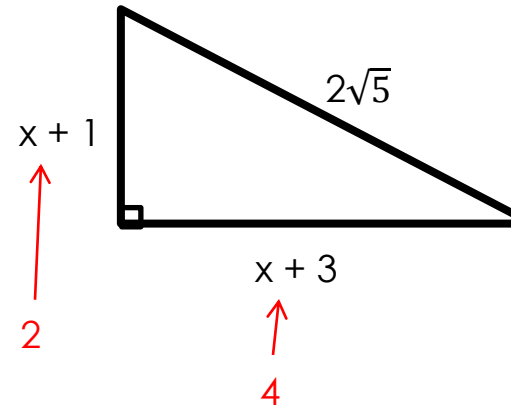
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Answer Key!

THE PYTHAGOREAN THEOREM

Example 5:

Find the unknown side lengths.

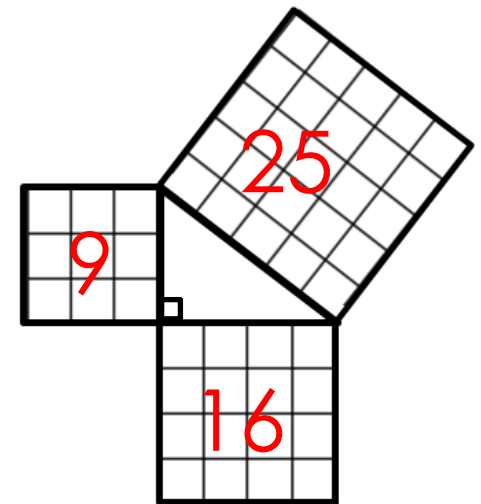


$$\begin{aligned} a^2 + b^2 &= c^2 \\ (x+1)^2 + (x+3)^2 &= (2\sqrt{5})^2 \\ x^2 + 2x + 1 + x^2 + 6x + 9 &= 4\sqrt{25} \\ 2x^2 + 8x + 10 &= 20 \\ 2x^2 + 8x - 10 &= 0 \\ 2(x^2 + 4x - 5) &= 0 \\ 2(x-1)(x+5) &= 0 \end{aligned}$$

Solutions $x = 1$ or $x = -5$
Length cannot be negative so
we will use $x = 1$.

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

$$\begin{aligned} 3^2 + 4^2 &= 5^2 \\ 9 + 16 &= 25 \\ 25 &= 25 \end{aligned}$$



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VOCABULARY

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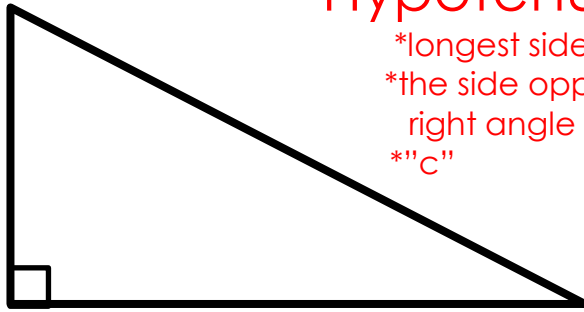
Cut this piece off

Hypotenuse

- *longest side
- *the side opposite the right angle
- *"c"

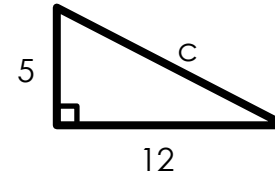
Legs

- *the two sides that form the right angle
- "a" and "b"



Example 1:

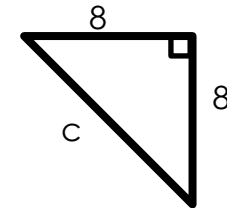
Find the unknown side length.



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

Example 2:

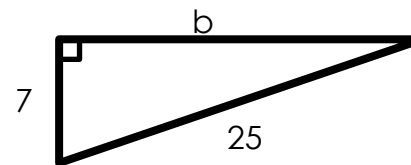
Find the unknown side length.



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

Example 3:

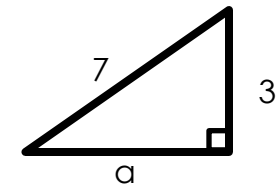
Find the unknown side length.



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

Example 4:

Find the unknown side length.



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

Cut this piece off

Cut this piece off

EXAMPLES

Cut this piece off

EXAMPLES

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.

The final product should look like this:

