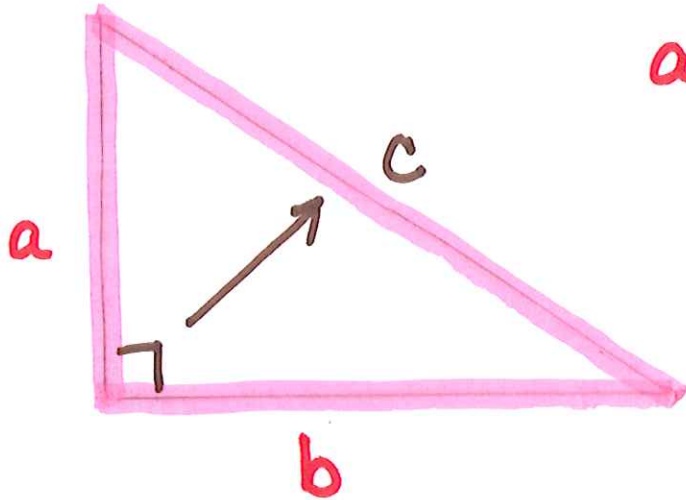


Pythagorean Theorem

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

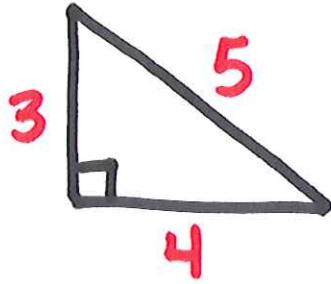


a and b are legs.; They form the right angle.

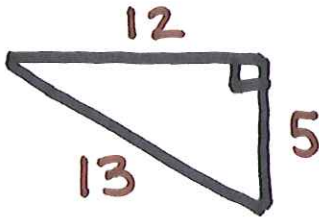
c is the hypotenuse.

It is across from the right angle.

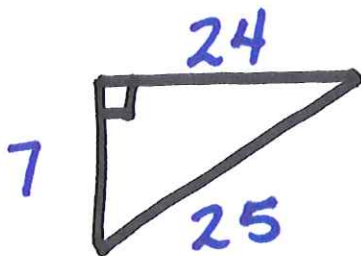
Pythagorean Triples



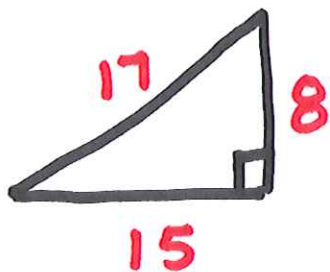
The legs are 3 and 4.
The hypotenuse is 5.



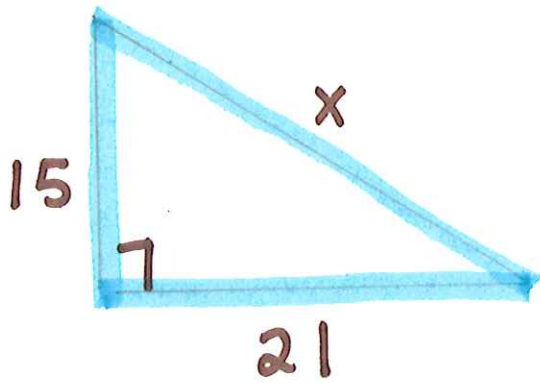
The legs are 5 and 12.
The hypotenuse is 13.



The legs are 7 and 24.
The hypotenuse is 25.



The legs are 8 and 15.
The hypotenuse is 17.



Find the value of x .

Step 1: Write the formula.

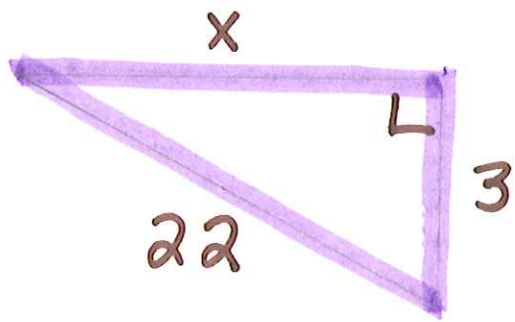
$$a^2 + b^2 = c^2$$

Step 2: Identify the hypotenuse.



Step 3: Plug in and solve.

$$15^2 + 21^2 = x^2$$
$$666 = x^2$$
$$\sqrt{666} = \sqrt{x^2}$$
$$25.8 = x$$

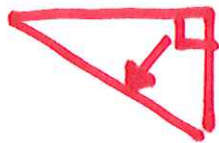


Find the value of x .

Step 1: Write the formula.

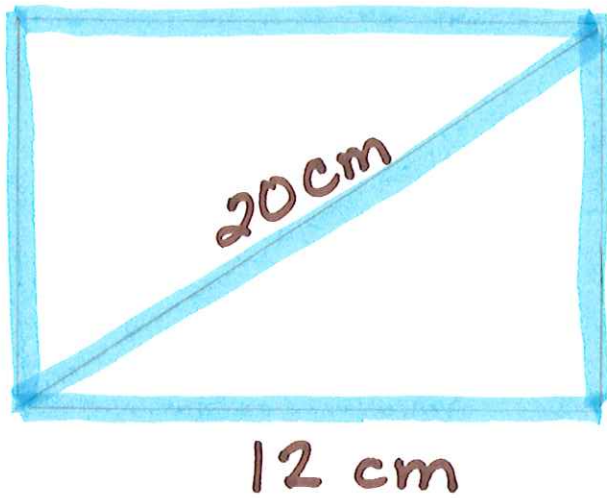
$$a^2 + b^2 = c^2$$

Step 2: Identify the hypotenuse.



Step 3: Plug in and solve.

$$\begin{array}{r} 3^2 + x^2 = 22^2 \\ -3^2 \qquad -3^2 \\ \hline x^2 = 475 \end{array}$$
$$\sqrt{x^2} = \sqrt{475}$$
$$x = 21.8$$



Find the area
of the
rectangle.

Find the width.

$$\begin{array}{r} 12^2 + w^2 = 20^2 \\ -12^2 \quad \quad -12^2 \\ \hline w^2 = 256 \end{array}$$

$$\begin{array}{l} \sqrt{w^2} = \sqrt{256} \\ w = 16 \end{array}$$

Find the area.

$$A = lw$$

$$A = 12(16) = 192 \text{ cm}^2$$