

Name: \_\_\_\_\_

# Pythagorean Triples

If three positive integers (a, b, and c) that represent the length of each side of a right triangle, satisfy the equation

$$a^2 + b^2 = c^2 \text{ it is called a Pythagorean triple.}$$

formula for every odd number.

odd number.

$$\frac{(n^2 - 1)}{2} \text{ (even number)}$$

$$+ 1) \text{ (odd number)}$$

formula for every even number.

\* side **a** is an even number.

\* side **b** =  $\left(\frac{a}{2}\right)^2 - 1$  (odd number)

\* side **c** =  $(\frac{a}{2} + 1)$  (odd number)

In a Pythagorean triple, two sides will always be represented by odd numbers and one side will be an even number.

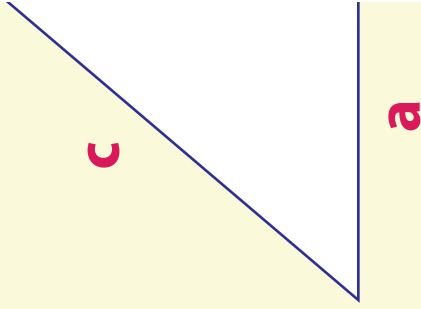
## PREVIEW

Gain complete access to the largest collection of worksheets in all subjects!

Members, please log in to download this worksheet.

Not a member? Please sign up to gain complete access.

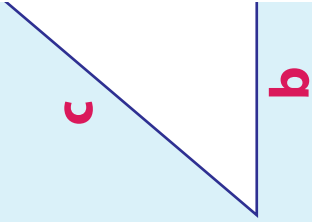
www.mathworksheets4kids.com



Name: \_\_\_\_\_

# Pythagorean Triples

**Example with an even number**



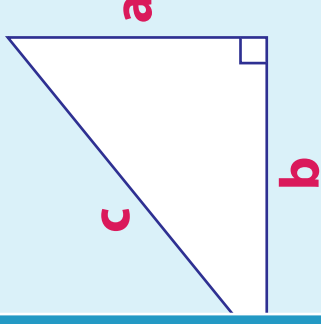
**If  $a = 4$ , (even number)**

$$b = \left(\frac{a}{2}\right)^2 - 1 = 3 \text{ (odd number)}$$

$$c = (b + 2) = 3 + 2 = 5 \text{ (odd number)}$$

**Hence 3, 4, and 5 is a "Pythagorean Triple".**

**Example with an odd number**



**(odd number)**

$$b = \frac{a^2 - 1}{2} = \frac{9 - 1}{2} = 4 \text{ (even number)}$$

$$c = (b + 1) = 4 + 1 = 5 \text{ (odd number)}$$

**Hence 3, 4, and 5 is a "Pythagorean Triple".**

**PREVIEW**

Gain complete access to the largest collection of worksheets in all subjects!

Members, please log in to download this worksheet.

Not a member? Please sign up to gain complete access.

[www.mathworksheets4kids.com](http://www.mathworksheets4kids.com)