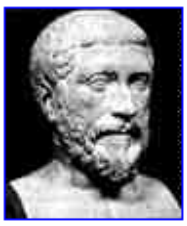
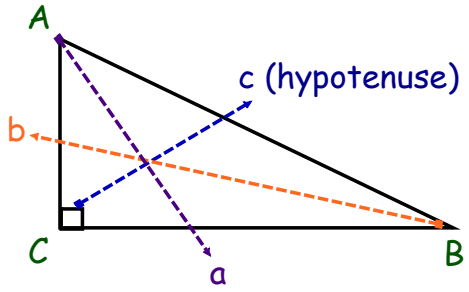


# Pythagorean Theorem

- is a fundamental relationship amongst the sides on a **RIGHT triangle.**

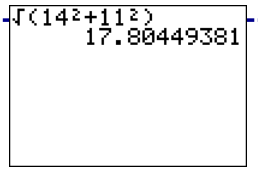



$$c^2 = a^2 + b^2$$

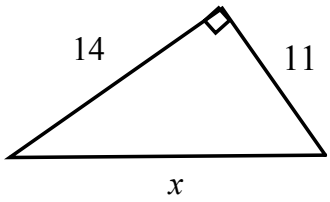
OPTIONS...

#1. Finding the unknown hypotenuse:

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




ex:




$x^2 = 14^2 + 11^2$

$x^2 = 196 + 121$

$\sqrt{x^2} = \sqrt{317}$

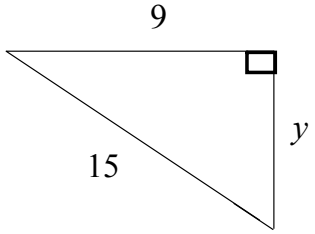
$x = 17.8$

#2. Finding an unknown side

3-4-5

$$a^2 = c^2 - b^2$$

ex:

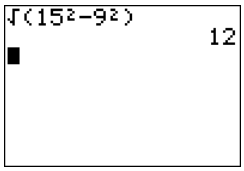



$y^2 = 15^2 - 9^2$

$y^2 = 225 - 81$

$\sqrt{y^2} = \sqrt{144}$

$y = 12$



# Pythagorean Triples

Verifying a Pythagorean Triple...

| LS | = | RS |
|---|---|---|
| $6^2+6^2$ | | $12^2$ |
| $36+36$ | $\neq$ | 144 |
| 72 | | No |

| LS | RS |
|---|---|
| | |

# Pythagorean Triples...

1. 3-4-5
2. 5-12-13
3. 7-24-25

* Any multiple of these is a triple too!