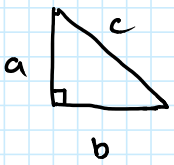
Pythagorean Theorem - Day 2

May 29 19 8:15 AM



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

* only for right angle triangles

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

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

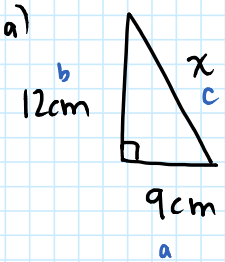
Method:

1. Label (a, b, c)
2. write formula
3. substitute numbers
4. Calculate answer

* SHOW YOUR WORK
* Include units

Ex. Find side x

a)



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

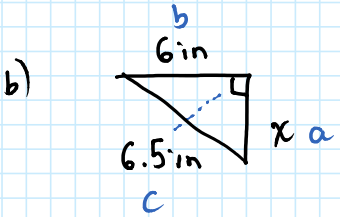
$9^2 + 12^2 = c^2$

$81 + 144 = c^2$

$225 = c^2$ ← Area

$c = \sqrt{225} = 15\text{ cm}$ ← side length

b)



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

$6.5^2 - 6^2 = a^2$

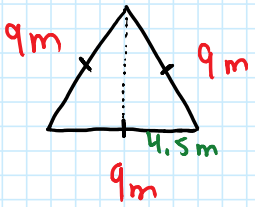
$42.25 - 36 = a^2$

$6.25 = a^2$ ← area

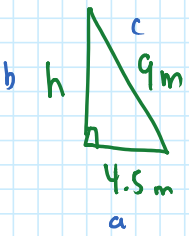
$a = \sqrt{6.25} = 2.5\text{ in}$ ← side length

Ex. The perimeter of an equilateral triangle is 27m. Find the height:

27m ÷ 3 = 9m



Ignore Left side



Bottom $9 \div 2 = 4.5\text{ m}$

height

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

$9^2 - 4.5^2 = b^2$

$81 - 20.25 = b^2$

$60.75 = b^2$

$\sqrt{60.75} = 7.8\text{ m}$