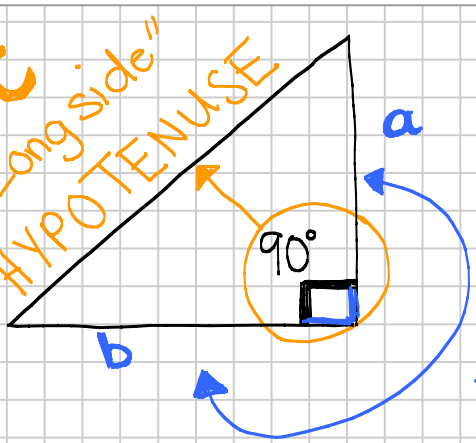
C1 Pythagorean Theorem

Note Title 12/05/2014

always across from the 90° corner → c

"Long side" HYPOTENUSE



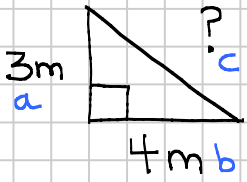
★ if one is ?, call it "a" (missing)

can either be a or b

"shorter sides"

touching/making the 90° corner

2 Formulas



Want to find LONG SIDE, c

$$c = \sqrt{a^2 + b^2}$$

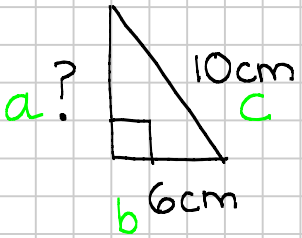
$$c = (3m)^2 + (4m)^2$$

$$c = (3m)(3m) + (4m)(4m)$$

$9m^2 + 16m^2$

$$c = \sqrt{25m^2} \rightarrow \boxed{c = 5m}$$

5×5 m×m



Want to find short side, a

$$a = \sqrt{c^2 - b^2}$$

$$a = (10cm)^2 - (6cm)^2$$

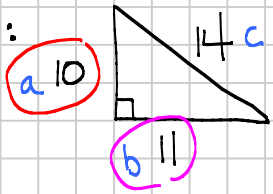
$$a = (10cm)(10cm) - (6cm)(6cm)$$

$100cm^2 - 36cm^2$

$$a = \sqrt{64cm^2} \rightarrow \boxed{a = 8cm}$$

To prove if a triangle is actually a right angle triangle, all 3 sides will be given, you substitute them into either formula, "check" if sides of equal sign "match"

ex:



$$c = \sqrt{a^2 + b^2}$$

$$14 = \sqrt{10^2 + 11^2}$$

$$14 = \sqrt{100 + 121}$$

$$14 = \sqrt{221}$$

$14 = 14.866\ldots$ NOT a RT △