

7-3 Solving Right Triangles

Objectives:

7-3a: I can solve a right triangle by finding all angles and sides

~~A~~ To solve a right triangle means to determine the measure of all three angles and all three sides.

You can solve by using:

- Trig ratios *soh cah toa* ← sides/angles
- Pythagorean theorem *leg² + leg² = hyp²* ← sides
- Sum of all angles is 180 degrees ← angles

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Solves for side length

Solves for angles

$$\sin\left(\frac{opp}{hyp}\right)$$

$$m\angle A = \sin^{-1}\left(\frac{opp}{hyp}\right)$$

$$\cos\left(\frac{adj}{hyp}\right)$$

$$m\angle A = \cos^{-1}\left(\frac{adj}{hyp}\right)$$

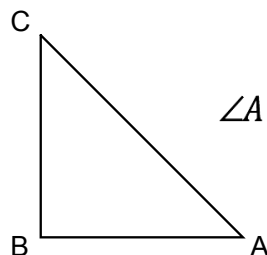
$$\tan\left(\frac{opp}{adj}\right)$$

$$m\angle A = \tan^{-1}\left(\frac{opp}{adj}\right)$$

Pythagorean Theorem $a^2 + b^2 = c^2$
leg² + leg² = hyp²

"a" and "b" are sides

"c" is always the hypotenuse

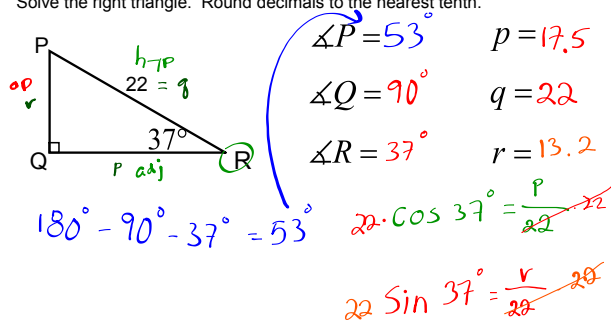


$$\angle A + \angle B + \angle C = 180^\circ$$

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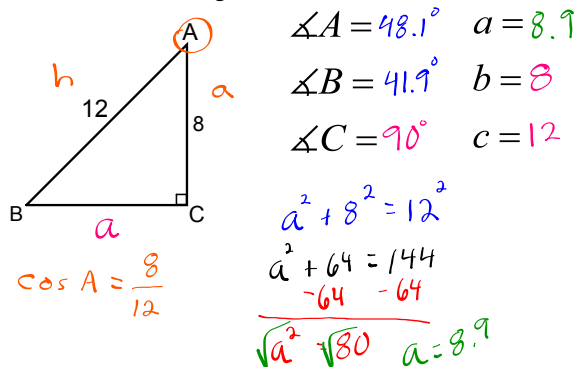
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Solve the right triangle. Round decimals to the nearest tenth.



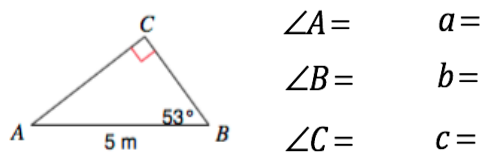
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Solve the Triangle



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Solve the Triangle



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