

Math Virtual Learning

Geometry/Honors Geometry

Finding Missing Angles in Right Triangles

April 6, 2020



Lesson: April 6, 2020

Objective/Learning Target:

Students will use inverse trig operations to find the missing angle in right triangles.

Bell Work

Given: right triangle ABC, where angle B is the right angle, $AB = 4$ and $BC = 3$.
Find the missing side, AC.

Hint: [Use the Pythagorean Theorem.](#)

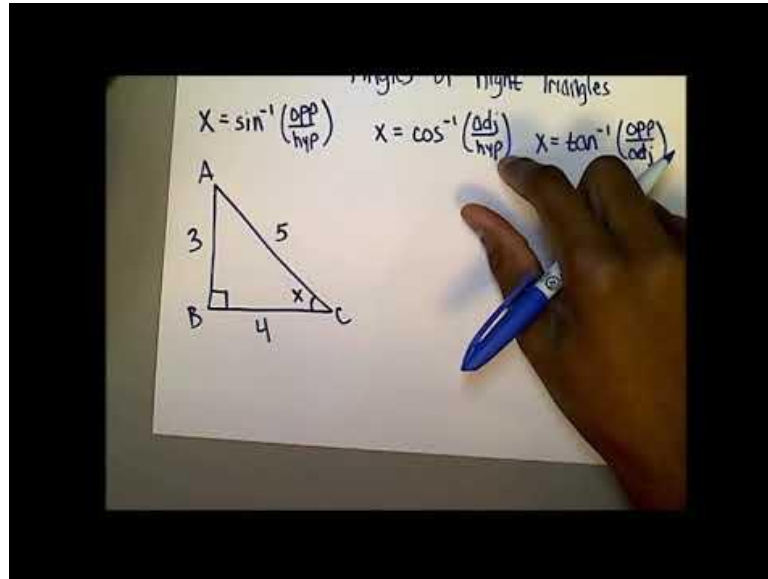
Bell Work **ANSWER KEY**

Given: right triangle ABC, where angle B is the right angle, $AB = 4$ and $BC = 3$.
Find the missing side, AC.

$$\mathbf{AC = 5}$$

Learn

In order to find the missing angles of right triangles you will use inverse trig operations. Watch the lesson video in detail by clicking below.

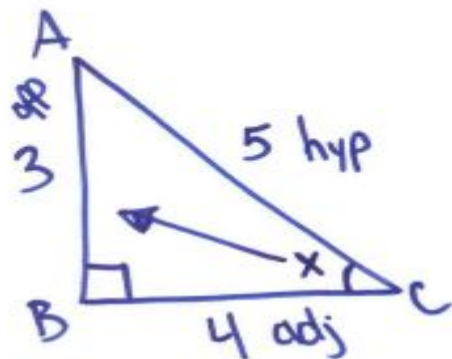


Learn

Study the examples shown.

Angles of Right Triangles

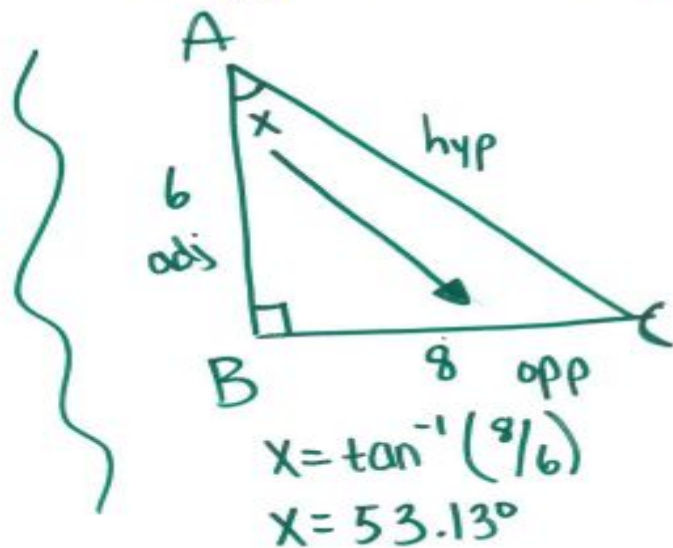
$$x = \sin^{-1}\left(\frac{\text{opp}}{\text{hyp}}\right)$$



$$x = \sin^{-1}\left(\frac{3}{5}\right)$$
$$x = 36.87^\circ$$

$$x = \cos^{-1}\left(\frac{\text{adj}}{\text{hyp}}\right)$$

$$x = \tan^{-1}\left(\frac{\text{opp}}{\text{adj}}\right)$$



$$x = \tan^{-1}\left(\frac{8}{6}\right)$$
$$x = 53.13^\circ$$

Learn

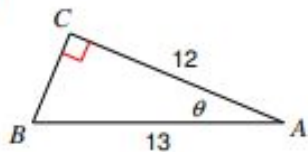
Things to remember:

- To find angles, use trig inverses
- Be sure your calculator is in “Degree” Mode
- Opposite and adjacent sides vary based on the angle you’re working with.
The hypotenuse will always be opposite the right angle box or the longest side of the triangle.

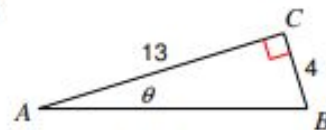
Practice

On a sheet of paper, find the missing angles for each problem, # 1 - 8.

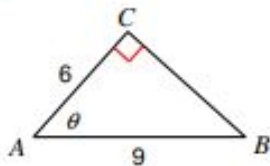
1)



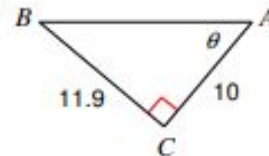
2)



3)



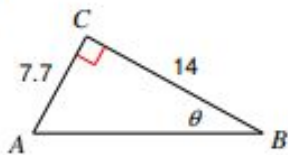
4)



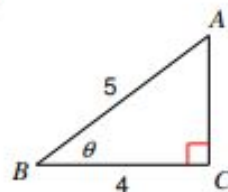
Practice

On a sheet of paper, find the missing angles for each problem, # 1 - 8.

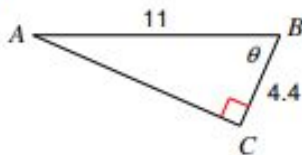
5)



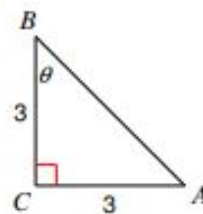
6)



7)



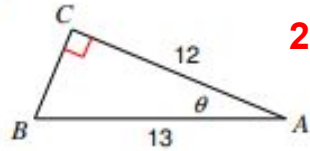
8)



Practice **ANSWER KEY**

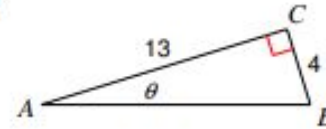
Check your answers.

1)



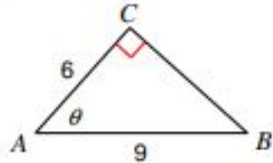
22.62 deg

2)



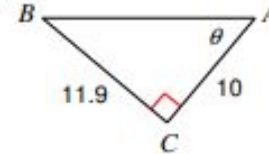
17.10 deg

3)



48.19 deg

4)

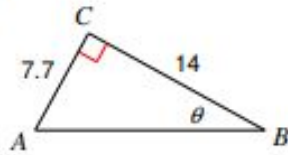


49.96 deg

Practice **ANSWER KEY**

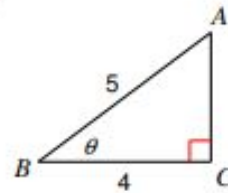
Check your answers.

5)



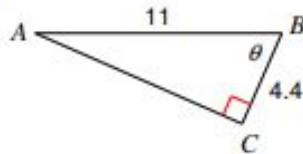
28.81 deg

6)



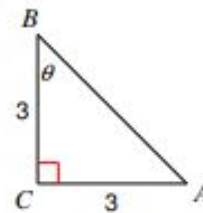
38.67 deg

7)



68.68 deg

8)



45 deg