

# Day 2: Solving Triangles

Date \_\_\_\_\_

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1) Review: Test Yourself! Without looking back at your notes, fill in the following:

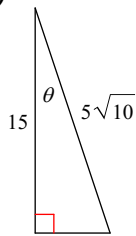
$$\sin \theta =$$

$$\cos \theta =$$

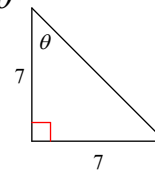
$$\tan \theta =$$

**Find the value of the trig function indicated.**

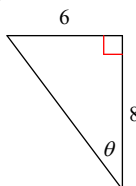
2)  $\tan \theta$



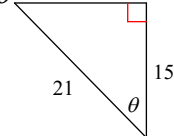
3)  $\cos \theta$



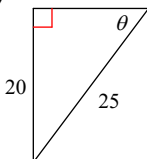
4)  $\tan \theta$



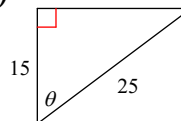
5)  $\cos \theta$



6)  $\sin \theta$

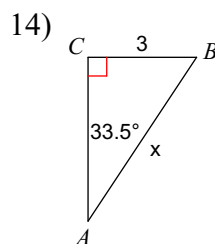
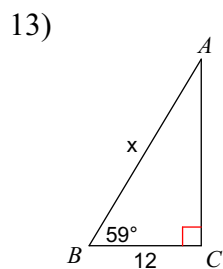
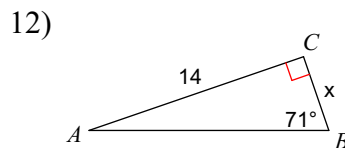
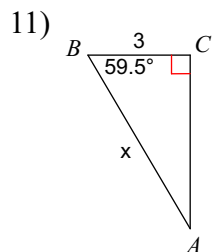
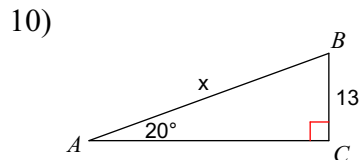
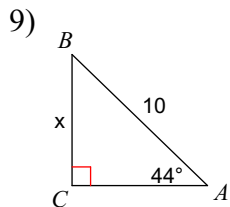


7)  $\sin \theta$



- 8) If we are given an angle, then we can use our trig functions to find missing sides of right triangles.
- 1 - Set up your trig equation. SOH-CAH-TOA.
  - 2 - Solve for  $x$ .
  - 3 - Plug in the information on your calculator and round your answer.

**Use trigonometric ratios to find the measure of each side indicated. Round to the nearest tenth.**



15) Find  $a$  if  $b = 5$ ,  $m\angle B = 31^\circ$

16) Find  $a$  if  $b = 15$ ,  $m\angle A = 71^\circ$

17) We can even use our trig functions to solve for missing angles. However, since we don't know the angle we have to use the inverse function. We call these the arc functions.

$$\arcsin \theta =$$

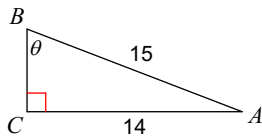
$$\arccos \theta =$$

$$\arctan \theta =$$

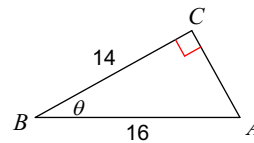
Again, we set up the equation, then we use our calculator to plug in the arc functions and find the angle.

**Use trigonometric ratios to find the measure of each angle indicated. Round to the nearest tenth.**

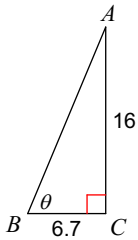
18)



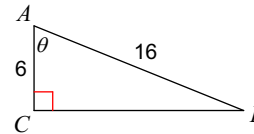
19)



20)



21)



22) Find  $m\angle A$  if  $c = 11.4$ ,  $b = 10$

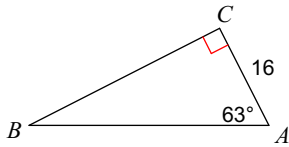
23) Find  $m\angle B$  if  $c = 16$ ,  $a = 14$

24) Now that we know how to find missing sides AND missing angles using the trig functions, we can SOLVE A TRIANGLE!

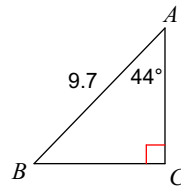
Solving a triangle means to find EVERY side and EVERY angle.

**Solve each triangle. Round answers to the nearest tenth.**

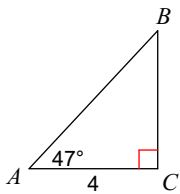
25)



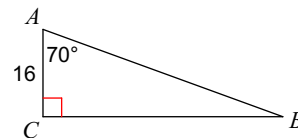
26)



27)



28)



**In each problem, angle C is a right angle. Solve each triangle rounding answers to the nearest tenth.**

29)  $c = 14$ ,  $m\angle B = 56^\circ$

30)  $m\angle A = 43^\circ$ ,  $b = 12$