

7.2

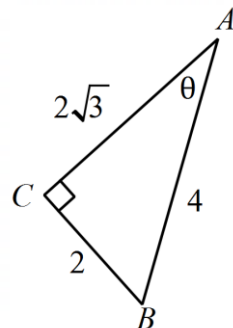
Date:

Objective:

Review: SOH CAH TOA is a helpful mnemonic for remembering the definitions of the trigonometric functions sine, cosine and tangent. Fill in the blanks below.

Do you remember **SOH CAH TOA**?: $\sin \theta = \frac{o}{h}$ _____ $\cos \theta = \frac{a}{h}$ _____ $\tan \theta = \frac{o}{a}$ _____

Review:



$\sin \theta =$ _____ $\csc \theta =$ _____

$\cos \theta =$ _____ $\sec \theta =$ _____

$\tan \theta =$ _____ $\cot \theta =$ _____

Use your calculator to find the value of the trig functions (make sure it is in degree mode).

The reciprocal trig functions $\csc \theta$, $\sec \theta$, and $\cot \theta$ as:

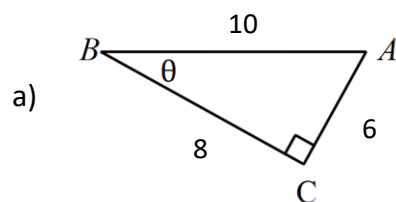
$\csc \theta = \frac{1}{\sin \theta}$ $\sec \theta = \frac{1}{\cos \theta}$ $\cot \theta = \frac{1}{\tan \theta}$

**Use the reciprocal functions to evaluate cosecant, secant and cotangent on a calculator.

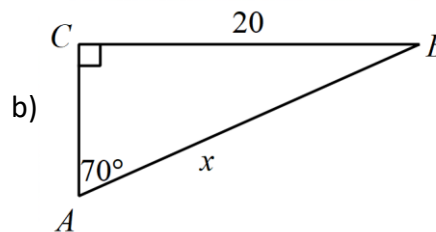
Examples: Round your answers to the nearest ten-thousandth.

- a) $\sin 41^\circ$
- b) $\cos 76^\circ$
- c) $\sec 23^\circ$
- d) $\cot 92^\circ$

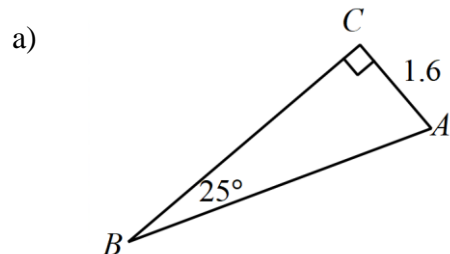
Example: Use an inverse trigonometric ratio to find the indicated angle. Round to the nearest tenth.



Example: Use a trigonometric ratio to find the indicated side. Round to the nearest tenth.



Example: Use right triangle trigonometry to find all the missing parts of the right triangle.

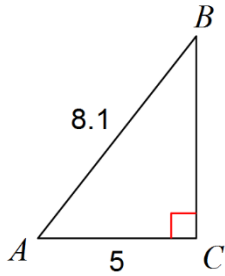


$m\angle A =$ _____ $a =$ _____

$m\angle B =$ _____ $b =$ _____

$m\angle C =$ _____ $c =$ _____

b)



$$m\angle A = \underline{\hspace{2cm}} \quad a = \underline{\hspace{2cm}}$$

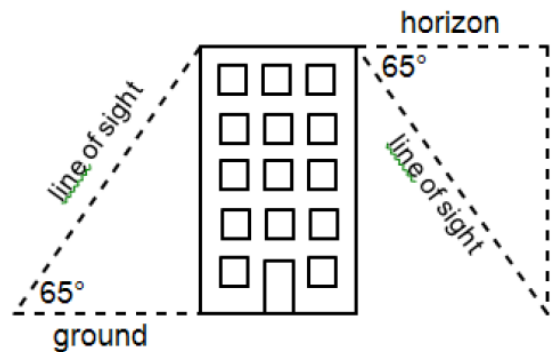
$$m\angle B = \underline{\hspace{2cm}} \quad b = \underline{\hspace{2cm}}$$

$$m\angle C = \underline{\hspace{2cm}} \quad c = \underline{\hspace{2cm}}$$

Applications of Trigonometry-

Angle of elevation- is the angle made with the ground and your line of sight to an object above you.

Angle of depression- is the angle from the horizon and your line of sight to an object below you.



a) A truck traveled up a ramp 30 feet. The angle of elevation from the level ground to the top of the ramp is 50° . Find the height at which the truck stopped.

b) The Sandlot boys are sitting in the treehouse looking at The Beast. The angle of depression from their line of sight to The Beast is 17° . If The Beast is standing 34 feet away from the base of the treehouse, how tall is the treehouse? Round to the nearest tenth.

c) From the top of a 100-foot lookout tower, a forest ranger spots a fire at a 25° angle of depression. How far was the fire from the base of the lookout tower?