

Secondary Math III
 Finding Angles
 Assignment 6.5

Name _____
 Period _____

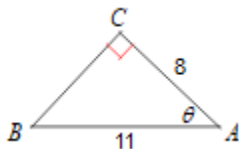
Use a calculator to find θ in degrees (round to the nearest degree).

1. $\sin \theta = 0.7071$

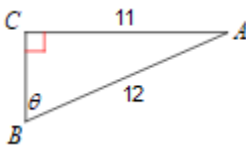
2. $\cos \theta = -3$

3. $\tan \theta = 3.7321$

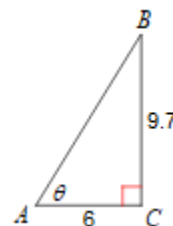
4.



5.



6.



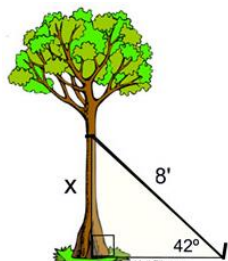
Find the smallest positive value of θ exactly in degrees and radians without a calculator.

7. $\cos \theta = \frac{\sqrt{3}}{2}$

8. $\sin \theta = -\frac{1}{\sqrt{2}}$

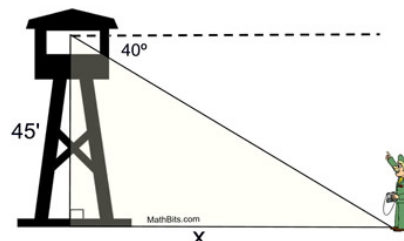
9. $\tan \theta = 0$

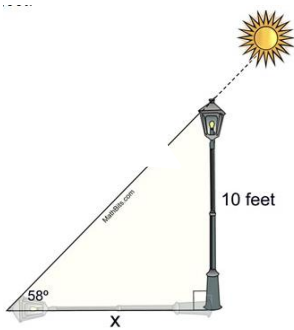
Applications involving Trigonometry:



10. A nursery plants a new tree and attaches a guy wire to help support the tree while its roots take hold. An eight-foot wire is attached to the tree and to a stake in the ground. From the stake in the ground the angle of elevation of the connection with the tree is 42° . Find to the nearest tenth of a foot, the height of the connection point on the tree.

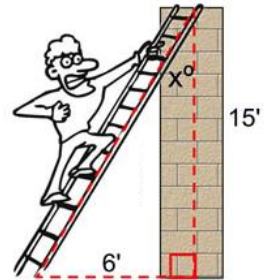
11. From the top of a fire tower, a forest ranger sees his partner on the ground at an angle of depression of 40° . If the tower is 45 feet in height, how far is the partner from the base of the tower, to the nearest tenth of a foot?





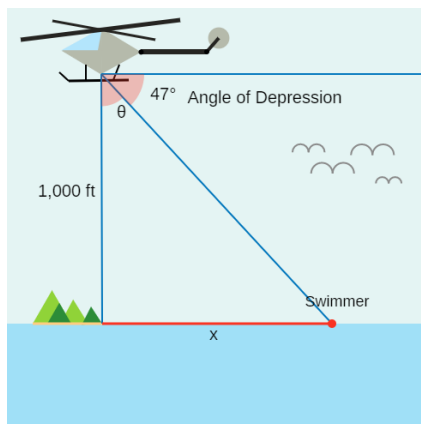
12. Find the shadow cast by a 10 foot lamp post when the angle of elevation of the sun is 58° . Find the length to the *nearest tenth of a foot*.

13. A ladder leans against a brick wall. The foot of the ladder is 6 feet from the wall. The ladder reaches a height of 15 feet on the wall. Find to the *nearest degree*, the angle the ladder makes with the wall.



Remember from Geometry last year ... the side opposite the largest angle is the longest side ...

14. Two legs of a right triangle have lengths 8 and 15. Find the measure of the smaller acute angle to the *nearest tenth of a degree*.



15. A helicopter lifts up 1000 feet over an island and spots a swimmer that needs to be rescued. Using a distant landmark, the helicopter pilot determines the angle of depression (47°). How far away from the island is the swimmer? (round to *nearest tenth of a foot*)

16. As the angle of depression increases, what are the effects of the swimmer? **EXPLAIN** to get the credit.

- a) the swimmer gets closer to island
- b) the swimmer gets further from the island
- c) the helicopter gets closer to the island
- d) the helicopter gets further from the island