Secondary II-Unit 1.3 Trig Day 3 Homework Name_____

Applying Trig Functions to the Real World

Date_____ Period____

Draw a picture of the situation described. Make sure to label all information given in the problem. Round all of your answers to the nearest whole number. *Don't forget to put your units!

1) A man is standing 50 feet from a flagpole. The angle of elevation from his feet to the top of the pole is 39°. Find the height of the flagpole.

2) A 14 foot ladder is being used to get to the top of a 12 foot wall. At what angle of elevation must the ladder be positioned in order to reach the top of the wall?

3) A slide at a water park sends riders traveling a distance of 45 feet to the pool at the bottom of the slide. If the angle of depression is 45°, what is the vertical distance that a rider travels?

4) Tourists marvel at Niagara Falls from a sightseeing boat. The boat is 150 feet away from the base of the falls. Given that Niagara Falls is 167 feet high, what is the angle of elevation from the boat to the top of the falls?

5) An airplane is flying at an altitude of 12,000 meters. There is a 32° angle of elevation from the command tower on the ground to the airplane. How far is the plane from the command tower?

6) A 300 meter cable is attached from the top of a phone pole to the ground. The angle of elevation to the top of the pole is 15°. How tall is the phone pole?

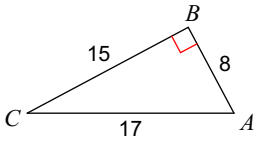
7) A great white shark is swimming 22 feet below sea level. If the shark is 67.7 feet from a sailboat (on the diagonal), what is the angle of depression from the boat to the shark?

8) A person is standing 30 meters from a traffic light. If the angle of elevation from the person's feet to the top of the traffic light is 25°, find the height of the traffic light.

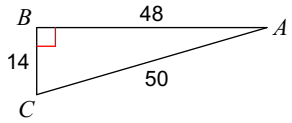
9) A little girl is watching airplanes from 100 meters away. She looks up at one plane at an angle of 77°. What is the elevation of the plane at this moment?

Find the value of each trigonometric ratio. *HINT: Find the fraction! Think SOHCAHTOA.

10) sin *C*

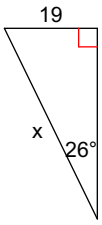


11) tan *A*

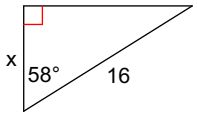


Find the missing side. Round to the nearest tenth.

12)

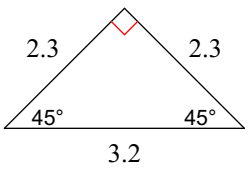


13)



Classify the triangle by its angles and sides.

14)



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