5.8 in-class practice Trigonometry Fall16

Name_____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Solve the problem.

1) Two boats leave a dock together, each traveling in a straight line. One boat travels at 22 mph and the other at 15 mph. If the angle between their courses measures 32.2°, how far apart are they after 36 minutes? Round your answer to the nearest tenth of a mile.

1) _____

2) From a boat on the river below a dam, the angle of elevation to the top of the dam is 25° 49'. If the dam is 2943 feet above the level of the river, how far is the boat from the base of the dam (to the nearest foot)?

2) _____

3) A surveyor is measuring the distance across a small lake. He has set up his transit on one side of the lake 100 feet from a piling that is directly across from a pier on the other side of the lake. From his transit, the angle between the piling and the pier is 35°. What is the distance between the piling and the pier to the nearest foot?

3) _____

4) A building 160 feet tall casts a 60 foot long shadow. If a person stands at the end of the shadow and looks up to the top of the building, what is the angle of the person's eyes to the top of the building (to the nearest hundredth of a degree)? (Assume the person's eyes are 4 feet above ground level.)

4) _____

5) A building 200 feet tall casts a 90 foot long shadow. If a person looks down from the top of the building, what is the measure of the angle between the end of the shadow and the vertical side of the building (to the nearest degree)? (Assume the person's eyes are level with the top of the building.)

5) _____

6) A radio transmission tower is 200 feet tall. How long should a guy wire be if it is to be attached 9 feet from the top and is to make an angle of 34° with the ground? Give your answer to the nearest tenth of a foot.

6) _____

7) To find the distance between two small towns, an electronic distance measuring (EDM) instrument is placed on a hill from which both towns are visible. If the distance from the EDM to the towns is 3.7 miles and 3.4 miles and the angle between the two lines of sight is 35°, what is the distance between the towns? Round your answer to the nearest tenth of a mile.

7) _____

8) Two airplanes leave an airport at the same time, one going northwest (N35°W) at 421 mph and the other going east at 340 mph. How far apart are the planes after 3 hours to the nearest mile?

8) _____

9) Two ships leave a harbor together traveling on courses that have an angle of 129° between them. If they each travel 533 miles, how far apart are they to the nearest mile?

9) _____

1) 7.4 mi
2) 6083 feet
3) 70 feet
4) 68.96°
5) 24°
6) 341.6 feet
7) 2.2 mi
8) 2111 mi
9) 962 mi