Ten MORE Trig Ratio Problems

Draw a diagram for each problem (on another sheet of paper). Write the trig equation you will use to answer the question; solve. Round to the nearest tenth. These are due at the end of the period. You may work with one (1) other student, and turn in a set of team answers bearing both your names.

1. A guy wire is attached to a 100-foot tower that is perpendicular to the ground. The wire makes an angle of 55° with the ground. What is the length of the wire?

2. 2. In ΔXYZ,   Z is a right angle. If sinX = ¾, find tanY.

3. A ship travels east from Port Lincoln 24 miles before turning north. When the ship becomes disabled and radios for help, the rescue boat needs to know the fastest route to the ship. The rescue boat navigator finds that the shortest route from Port Lincoln is 48 miles long. At what angle off of due east should the rescue boat travel to take the shortest route to the ship?

4. A jet airplane begins a steady climb of 15° and flies for two miles. What is the change in altitude in **feet**?

5. A surveyor is standing 100 meters from a bridge. She determines that the angle of elevation to the top of the bridge is 35°. The surveyor's eye level is 1.45 meters above the ground. Find the height of the bridge..

6. A ladder leaning against the side of a house forms an angle of 65° with the ground. The foot of the ladder is 8 feet from the building. Find the length of the ladder to the nearest foot.

7. To secure a 500-meter radio tower against high winds, guy wires are attached to a ring 5 meters from the top of the tower. The wires form a 15° angle with the tower. Find the distance from the tower to the guy wire anchor in the ground.

8. Mary is flying a kite o a 50-meter string. The string is making a 50° angle with the ground. How high above the ground is the kite?

9. Bill Owens is an architect designing a new parking garage for the city. The floors of the parking garage are to be 10 feet apart. The exit ramps between each pair of floors are to be 75 feet long. What is the measurement of the angle of elevation of each ramp?

10. A trolley car track rises vertically 40 feet over a horizontal distance of 630 feet. What is the angle of elevation of the track?