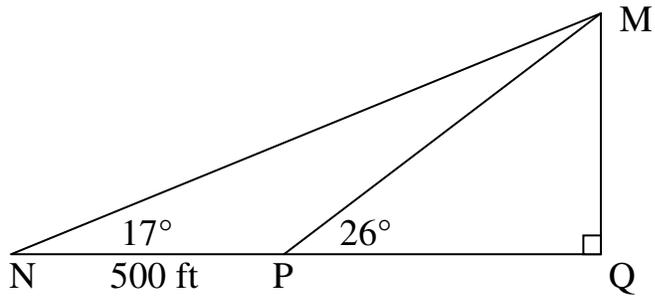


4. A school building is topped by a flag pole. A surveyor on the ground makes the following measurements:

- * The angle of elevation from his position to the top of the building is 34° .
- * The distance from his position to the top of the building is 493 feet.
- * The distance from his position to the top of the flag pole is 529 feet.

- a. How far away from the base of the building is the surveyor located?
- b. How tall is the building?
- c. What is the angle of elevation from the surveyor to the top of the flag pole?
- d. How tall is the flag pole?

5.



a. Find PM .

b. Find QM .

6. Two observers simultaneously measure the angle of elevation of a helicopter. One angle is measured as 23° , the other as 44° . If the observers are 400 feet apart and the helicopter lies over the line joining them, how high is the helicopter?

7. Pat needs to determine the height of a tree before cutting it down to be sure that it will not fall on a nearby fence. The angle of elevation of the tree from one position on a flat path from the tree is 34° , and from a second position 52 feet farther along this path it is 27° . What is the height of the tree?

8. The navigator of a ship at sea spots two lighthouses that she knows to be 5 miles apart along a straight seashore. She determines that the angles formed between two line-of-sight observations of the lighthouses and the line from the ship directly to shore are 23° and 47° .

- a. How far is the ship from each of the lighthouses?
- b. How far is the ship from shore?

Pre-Calculus B
Chapter 8 Review – Part 2
Calculator

Name _____

If a picture is not given, draw a picture. State the exact answer(s), in simplified form, and their approximations rounded to three decimal places.

9. A golfer hits an errant tee shot that lands in the rough. A marker in the center of the fairway is 110 yards from the center of the green. While standing on the marker and facing the green, the golfer turns 105° toward his ball. He then paces off 25 yards to his ball. How far is the ball from the center of the green?

10. An airplane flies due north from Ft. Myers to Sarasota, a distance of 80 miles and then turns through an angle of 72° and flies to Orlando, a distance of 50 miles.

- How far is it directly from Ft. Myers to Orlando?
- What bearing should the pilot use to fly directly from Ft. Myers to Orlando?

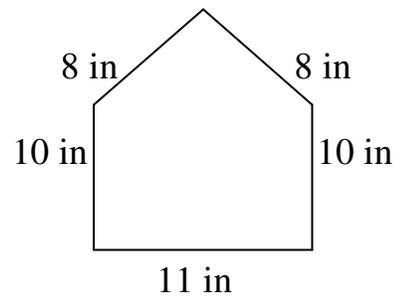
11. A cruise ship maintains an average speed of 14 knots in going from San Juan, Puerto Rico, to Barbados, West Indies, a distance of 610 nautical miles. To avoid a tropical storm, the captain heads out of San Juan in a direction of 32° off a direct heading to Barbados. the captain maintains the 14 knot speed for 12 hours, after which time the path to Barbados becomes clear of storms.

- a. Through what angle should the captain turn to head directly to Barbados?
- b. Once the turn is made, how far will it be before the ship reaches Barbados if the same 14 knot speed is maintained?

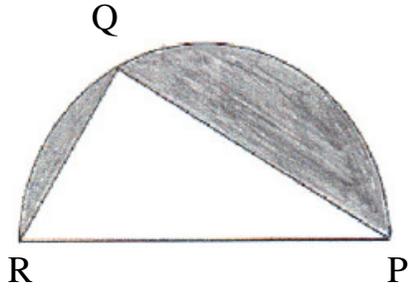
12. The dimensions of a triangular lot are 93 feet by 62 feet by 87 feet. If the price of such land is \$7 per square foot, how much does the lot cost?

13. A cone-shaped tent is made from a circular piece of canvas 23 feet in diameter by removing a sector with central angle 44° and connecting the ends. What is the surface area of the tent?

14. The dimensions of home plate for a certain baseball stadium are as shown. Find the area of home plate.



15. See the following figure. Find the area of the shaded region enclosed in a semicircle of diameter 26 inches. The length of the chord PQ is 10 inches. Triangle PQR is a right triangle.



16. Find the area of the segment of a circle whose radius is 6 inches, formed by a central angle of 40° . Draw a picture.