

Find the area of the given triangle:

1. In $\triangle RPQ$ , $q = 14$ , $p = 12$ , $r = 9$	2. In $\triangle XYZ$ , $y = 13.9$ , $x = 15.6$ , $z = 8.1$
3. In $\triangle ZXY$ , $y = 8.6$ , $x = 6$ , $m\angle Z = 84^\circ$	4. In $\triangle TRS$ , $s = 8$ , $r = 17$ , $m\angle T = 82^\circ$

Draw a picture and solve.

- A piece of sheet metal is to be cut using a blowtorch so that it forms a triangle with the side lengths of 6 feet, 5 feet, and 9 feet. Find the measures of the angles.
- Two ships leave a port at 9:00AM. One travels at a bearing of  $N53^\circ W$  at 12 mph and the other travels at a bearing of  $S67^\circ W$  at 16 mph. Approximate how far apart they are at noon that day.

7. Two rangers, one at Station A and one at Station B, observe a fire in the forest. The angle at Station A formed by the lines of sight to Station B and to the fire is  $65.23^\circ$ . The angle at Station B formed by the lines of sight to Station A and to the fire is  $56.47^\circ$ . The stations are 10 km apart.
- How far from Station A is the fire?
  - How far from Station B is the fire?
8. A boat is sailing due east parallel to the given shoreline at a speed of 10 mph. At a given time the bearing to the lighthouse is  $S70^\circ E$ , and 15 minutes later the bearing is  $S63^\circ E$ . Find the distance from the boat to the lighthouse.
9. The course for a boat race starts at point A and proceeds in the direction  $N42^\circ W$  to point B, then in the direction  $S30^\circ W$  to point C, and finally back to A. Point C lies 5 km directly west of point A. Approximate the total distance of the race course.