



- 5) A meteorologist reads radio signals to get information from a weather balloon. The last alert indicated that the angle of depression of the weather balloon to the meteorologist was  $41^\circ$  and the balloon was 1,810 meters away from his location on the diagonal. How high above the ground was the balloon?
- 6) A sonar operator on an anchored cruiser detects a pod of dolphins feeding at a depth of about 255 meters directly below. If the cruiser travels 450 meters west and the dolphins remain at the same depth to feed, what is the angle of depression,  $x$ , from the cruiser to the pod? What is the distance,  $y$ , between the cruiser and the pod?
- 7) A ladder manufacturer recommends that its ladders be used on level ground at an angle of  $72.5^\circ$  to the horizontal. At that angle, how far up the side of a building will the top of a 14-foot ladder reach?
- 8) Solve the right triangle  $XYZ$ , where  $\angle Y$  is a right angle,  $XZ = 12$  inches, and  $XY = 8$  inches.
- 9) Right triangle  $\triangle ABC$  has  $\angle A$  at  $40^\circ$ , right angle  $\angle C$ , and a hypotenuse of 10 cm. Solve the triangle.