Name: Date: Period:

Draw the pictures and use the Pythagorean Theorem to solve the following problems. Show all your work on a separate piece of paper.

1. A wire reaches from the top of a 26-meter telephone pole to a point on the ground 8 meters from the base of the pole. What is the length of the wire to the nearest tenth of a meter?

2. The lengths of the legs of a right triangle are 3 and 6. Find, in simplest radical form, the length of the hypotenuse of the right triangle.

3. In the accompanying diagram of rectangle ABCD, AB = 6 and BC = 8. What is the length of AC?

4. Express in simplest radical form, the length of one leg of a right triangle if the hypotenuse is 9 and the other leg is 5.

5. Find the length, in simplest radical form, of the hypotenuse of an isosceles right triangle whose leg equals 3. (Isosceles means two equal legs).

6. Triangle ABC is a right triangle with right angle at C. If AB = 13 and BC = 12, Find AC.

7. Lyle recently purchased a 15-foot ladder to paint a second-floor window which is 12 feet off the ground. For safety, the ladder must be placed at least 6 feet from the wall. Is the ladder bought long enough?

8. A TV antenna is braced on two sides with 20-foot lengths of wire, forming an isosceles triangle with side lengths of 20 ft. If the base of the triangle is 24 ft, how tall is the antenna?

9. Keisha wants to store her fishing pole against the back wall of her closet. If the fishing pole is 12 ft long and the dimensions of the back wall are 10 ft by 8 ft, will the pole fit?

10. How high is the top window ledge above the ground?
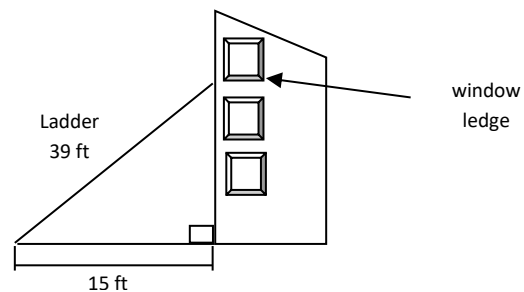
11. A catcher throws a baseball from home plate to second base. How many feet does the ball travel?