Name: Date: Period:

Draw the pictures and use the Pythagorean Theorem to solve the following problems.

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. The dimensions of a rectangle are 14 centimeters by 48 centimeters. Find, in centimeters, the length of the diagonal of the rectangle.

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

8. The hypotenuse of a right triangle is 25. If one leg is 20, find the other leg.

9. The length of the hypotenuse of a right triangle is 7 and the length of one leg is 4. What is the length of the other leg?

10. Which of the following could be the lengths of the sides of a right triangle?
    (a) 3, 5, 8
    (b) 5, 12, 13
    (c) 2, 4, 6
    (d) 5, 5, 5