Name: _____

Date: _____

Diameter Perpendicular to a Chord

During our study of circles, we learned that if we have a chord on a circle, and we put a diameter perpendicular to that chord on the same circle, the diameter cuts the chord exactly in half.

This helps us to find missing measures for different parts of the circle. Use this idea to answer the following questions. Keep in mind, you need to draw a picture of the idea first, and then use it to answer the question. If necessary (most answers are whole numbers), round answers to the nearest tenth. *Remember to put units on everything!!!*

1. Suppose a chord of a circle is 10 inches long and the radius of the circle is 13 inches. How far is the chord from the center of the circle?

2. Suppose a chord is 20 inches long and is 24 inches from the center of the circle. Find the length of the radius of the circle.

3. If a chord of a circle is 5 feet from the center of the circle and is 24 feet long, find the length of the radius of the circle.

4. If the diameter of a circle is 30 centimeters long and a chord in the circle is 24 centimeters long, find the distance between the chord and the center of the circle. (Hint: will radius be useful here?)

5. Suppose a chord of a circle is 24 meters long and is 15 meters from the center of the circle. Find the length of the radius of the circle.

6. Suppose the diameter of a circle is 34 inches long and a chord is 30 inches long. Find the distance between the chord and the center of the circle.

7. Suppose the diameter of a circle is 50 millimeters long and a chord is 7 millimeters from the center of the circle. Find the length of the chord.

8. Suppose a chord of a circle is 16 inches long and is 6 inches from the center of the circle. Find the length of a radius of the circle.

9. Find the length of a chord that is 5 inches from the center of a circle with a radius of 13 inches.

10. Suppose a radius of a circle is 17 units and a chord is 30 units long. Find the distance from the center of the circle to the chord.