Chapter 10 Test

For #1 to 4, select the correct answer.

1. The perpendicular from the centre of a circle to a chord _____ the chord.
   A bisects   **B** intersects   **C** is tangent to   **D** passes through

2. Which of the following describes an inscribed angle in a circle?
   A segments that have both endpoints on the circumference of a circle
   B the angle formed by two chords that share a common endpoint on the circumference of a circle
   C an angle formed by two radii of a circle where the endpoints are on the circle
   D an angle where the vertex is inside the circle at the intersection of two chords

3. The measure of the central angle of a circle is _____ the measure of an inscribed angle subtended by the same arc in the circle.
   A twice   **B** half   **C** equal to   **D** supplementary to

4. Which of the following describes a tangent to a circle?
   A a line that intersects the circle at two points
   B a chord that intersects the circle at two points
   C a line that intersects the circle at only one point
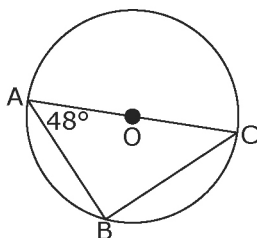   **D** a chord that intersects the circle at only one point

Use the following diagram to complete the statements in #5 and 6.
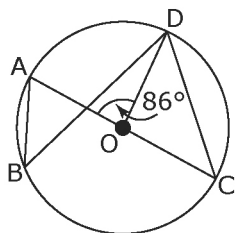
5. If the measure of ∠AOD is 86°, then the measure of ∠AOD is _____.
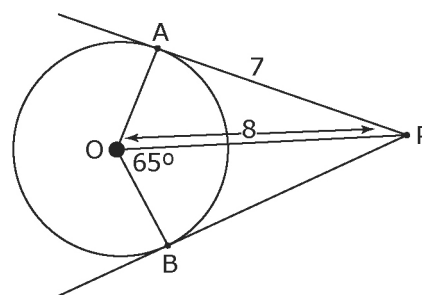**6.** The measure of ∠ABD is _____.

Short Answer

7. What is the measure of ∠ACB?

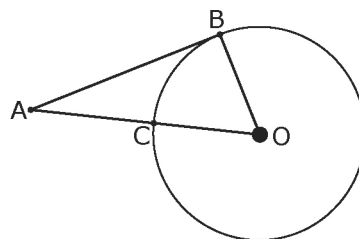**8.** The centre of the circle is O. Points A and B
are tangent to the circle.
   a) What is the measure of ∠PAO?
   b) What is the length of $\overline{OB}$?
   c) What is the measure of ∠BPO?

Extended Response

9. In the diagram, $\overline{AB}$ is tangent to the circle.
The length of $\overline{AB}$ is 24 cm and
the length of $\overline{OB}$ is 10 cm.
   a) What is the length of $\overline{AO}$?
   b) What is the length of $\overline{AC}$?

10. A subway track must pass through a cylindrical tunnel. The tunnel is 6 m in
diameter. How wide should the track bed be so that the maximum height at
the centre of the tracks is 4.5 m? Express your answer to the nearest tenth
of a metre.