# Circle Properties Quiz

**Grade Level:** Grade 9 | **Date:** 2025-11-15 23:54:52

Instructions: Answer all questions. Show your work where applicable.

**Question 1:** In a given circle, if two chords are of equal length, what can be concluded about the angles they subtend at the center of the circle?

A) The angle subtended by the longer chord is always greater.
B) The angles subtended by both chords are equal.
C) The angles subtended are equal only if the chords pass through the center.
D) There is no definite relationship between the chord length and the angle subtended.

**Question 2:** A chord PQ of a circle has a length of 16 cm. If a line segment from the center O of the circle is drawn perpendicular to PQ, intersecting PQ at point M, what is the length of PM? Explain your reasoning.

Answer: _____

# Answer Key

**Question 1:** B) The angles subtended by both chords are equal.

*Explanation:* According to Theorem 9.1, equal chords of a circle subtend equal angles at the center. This is a fundamental property of circles.

**Question 2:** 8 cm

*Explanation:* Theorem 9.3 states that the perpendicular from the center of a circle to a chord bisects the chord. This means point M divides the chord PQ into two equal halves, PM and MQ. Therefore, PM = PQ / 2 = 16 cm / 2 = 8 cm.