# Mathematics

(www.tiwariacademy.com)

(Chapter – 5) (I'm Up and Down, and Round and Round) (Assignment 1)

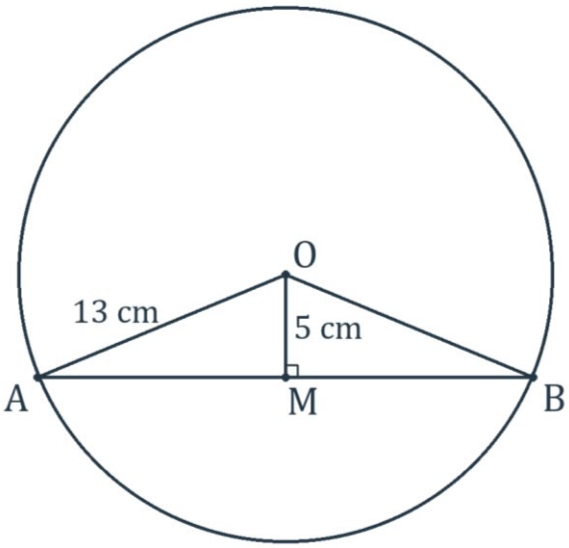
(Class – 9)

Name _____ Date _____

Answer all 15 questions. Choose one option for each MCQ. Show your working and give reasons where required. Figures are schematic unless stated otherwise.

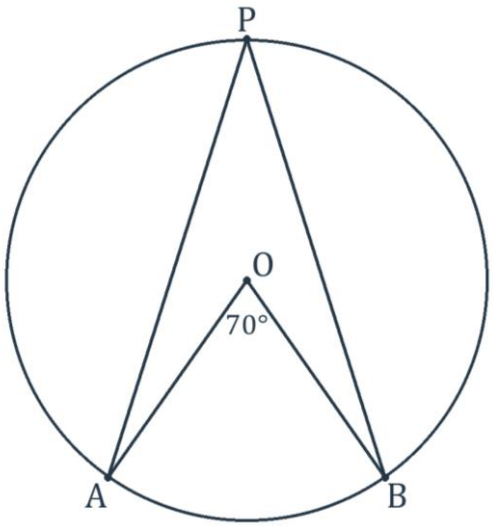
**Section A: Multiple Choice Questions**

**1.** In a circle, a chord is 5 cm away from the centre. If the radius of the circle is 13 cm, what is the length of the chord?



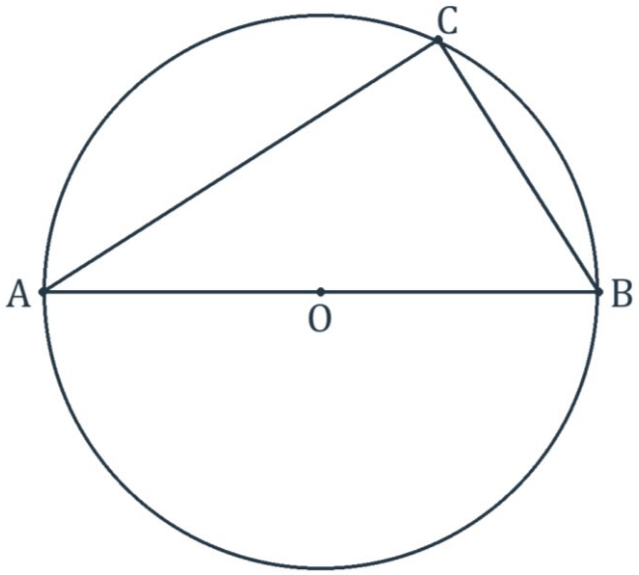

(a) 12 cm (b) 24 cm
(c) 26 cm (d) 10 cm

**2.** An arc of a circle subtends an angle of 70° at the centre. What is the measure of the angle subtended by the arc at a point on the circle?




(a) 35° (b) 70°
(c) 140° (d) 110°

**3.** The diameter of a circle is AB. Point C is on the circumference. What is the measure of the ∠ACB? Explain your reasoning.

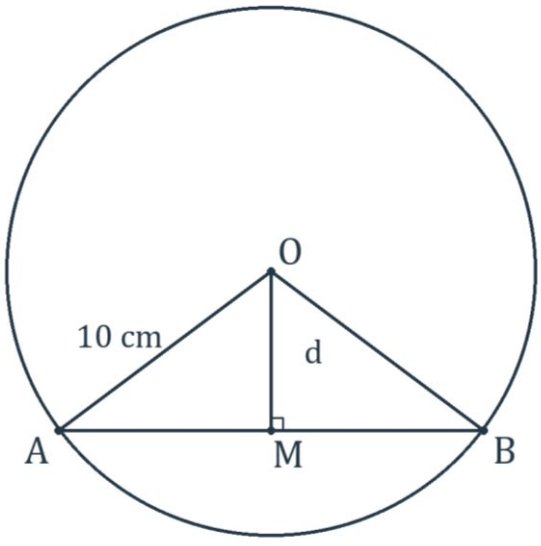



(a) 180°; a straight angle
(b) 45°; half a right angle
(c) 90°; half the central angle
(d) 60°; an equilateral triangle

**4.** How many circles pass through two points on a plane?

(a) Exactly one
(b) Exactly two
(c) None
(d) Infinitely many

**5.** A chord is 16 cm long in a circle of radius 10 cm. How far is it from the centre?




AB = 16 cm

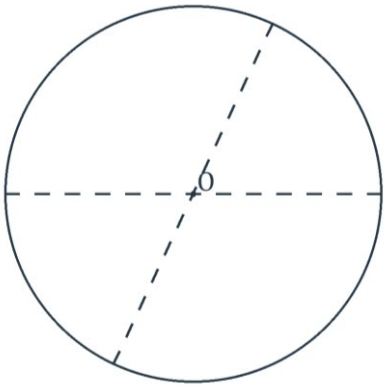
(a) 4 cm
(b) 6 cm
(c) 8 cm
(d) 12 cm

## Section B: Very Short Answer Questions

**6.** List some objects from nature that resemble a circle.

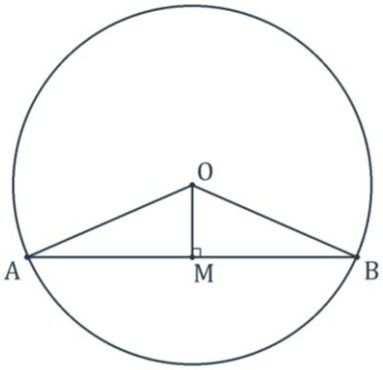
**Answer:**

**7.** Jamuna has a circular piece of paper. She is trying to locate its centre. Amina gives her a suggestion. She follows the instructions and is thrilled to find that it works. Can you guess what Amina told her?




**Answer:**

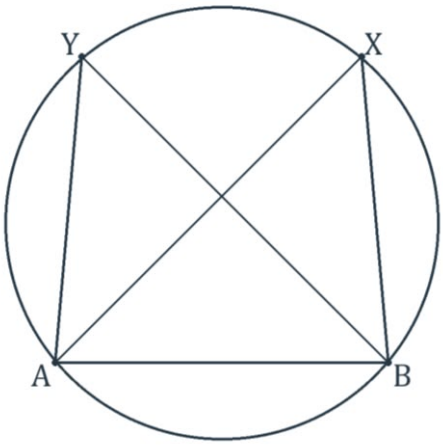
**8.** Show that the triangle formed by a chord and the centre of the circle is isosceles.




**Answer:**

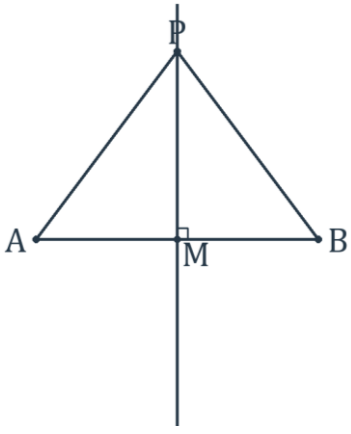
**9.** Let A and B be two points on a circle with centre O.

(i) Are there points X, Y on the circle, on the same side of AB, such that ∠AXB is different from ∠AYB?




**Answer:**

**10.** The locus of points at a given distance from a given point is a circle. What can we say about the locus of points equidistant from two given points?




**Answer:**

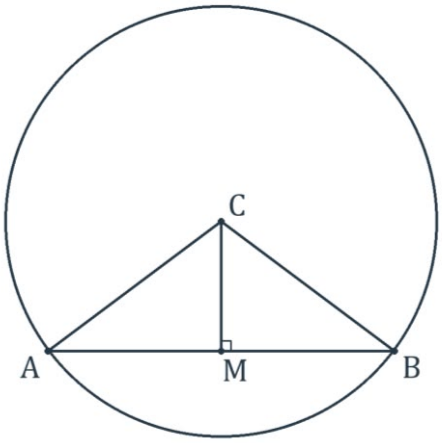
## Section C: Short and Long Answer Questions

**11.** Draw ΔABC with AB = 5 cm, ∠A = 70° and ∠B = 60°. Draw the circumcircle of ΔABC. Is the centre inside or outside the triangle?

**Answer:**

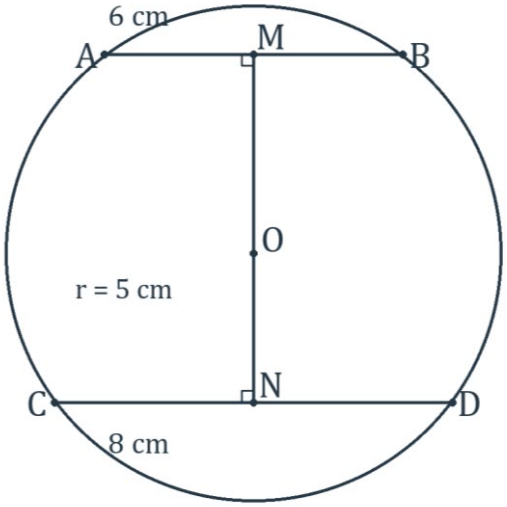
**12.** Can you explain why the converse to Theorem 4 is true, i.e., why does the perpendicular from the centre of a circle to a chord of the circle bisect the chord?

(**Hint:** Use figure. You are told that ∠CMA = ∠CMB = 90°. You need to show that AM = BM.)



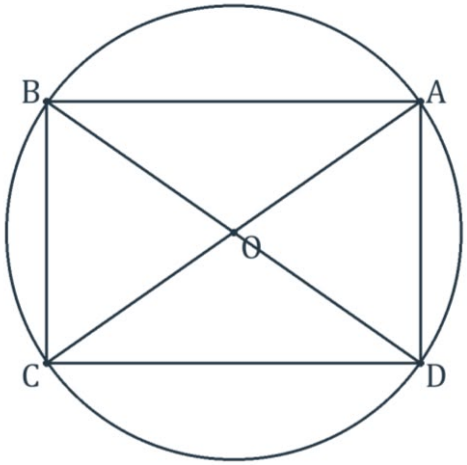

**Answer:**

**13.** Two parallel chords of lengths 6 cm and 8 cm are on opposite sides of the centre of a circle. If the radius of the circle is 5 cm, find the distance between the midpoints of the chords.




**Answer:**

**14.** Show that rectangle is the only parallelogram that can be inscribed in a circle.




**Answer:**

**15.** A circle has radius 10 cm. A chord AB is 6 cm from the centre O. Find AB and the perimeter of triangle OAB. Draw a labelled sketch.

**Answer:**