Mathematics

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(Chapter – 5) (I'm Up and Down, and Round and Round) (Assignment 3)

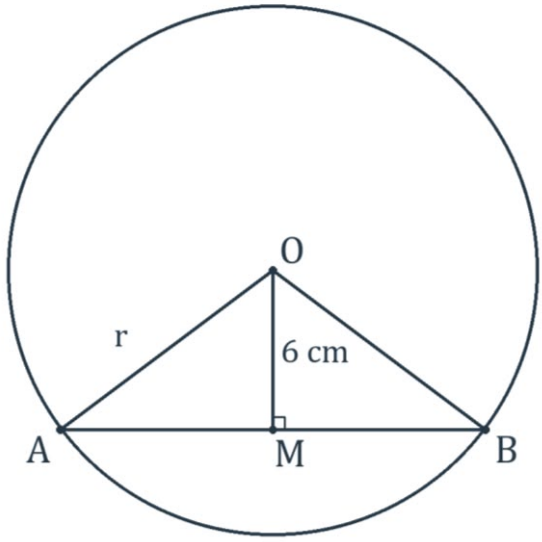
(Class – 9)

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

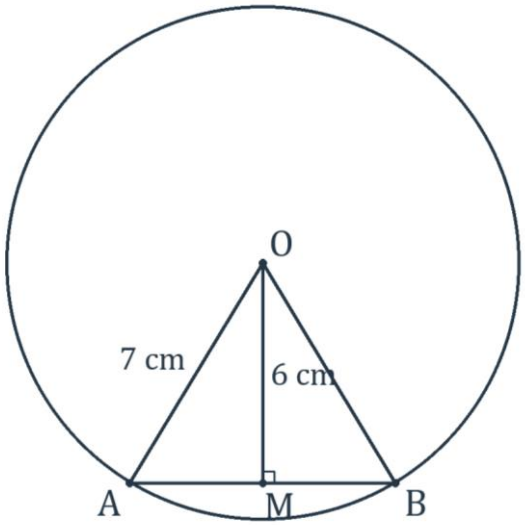
1. The distance of a chord of length 16 cm from the centre of a circle is 6 cm. Find the radius of the circle.



AB = 16 cm

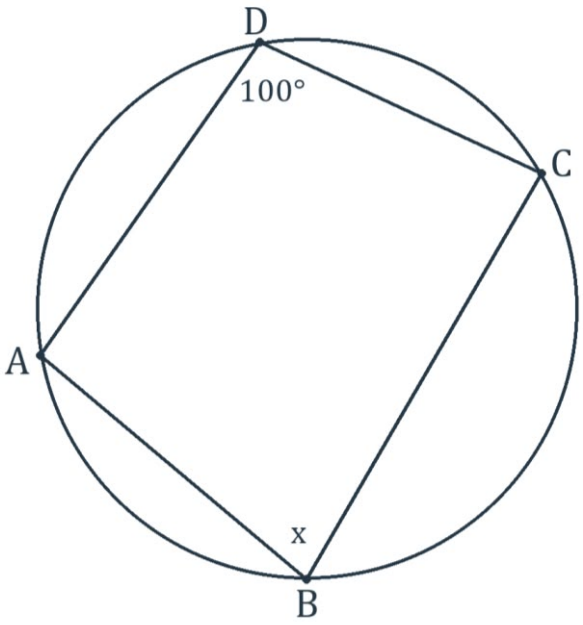
(a) 8 cm
(b) 6 cm
(c) 10 cm
(d) 14 cm

2. Find the length of the chord of a circle where the radius is 7 cm and perpendicular distance is 6 cm.



(a) $\sqrt{13}$ cm
(b) $2\sqrt{13}$ cm
(c) 13 cm
(d) 2 cm

3. Find x in figure.

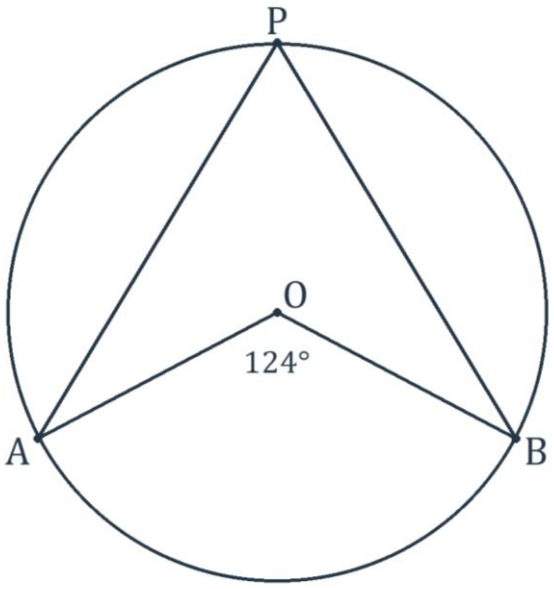


(a) 80°
(b) 100°
(c) 50°
(d) 160°

4. What is the length of the longest chord in a circle of radius 5 units? Is there a smallest chord?

(a) 5 units; yes
(b) 10 units; yes
(c) 5 units; no
(d) 10 units; no

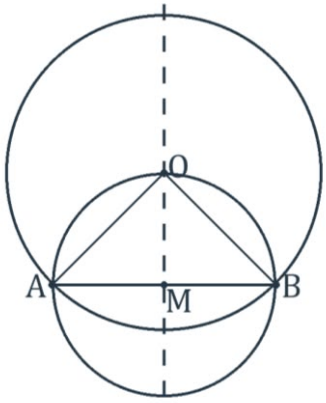
5. A minor arc subtends 124° at the centre. What angle does it subtend at a point on the major arc?



(a) 31°
(b) 62°
(c) 124°
(d) 248°

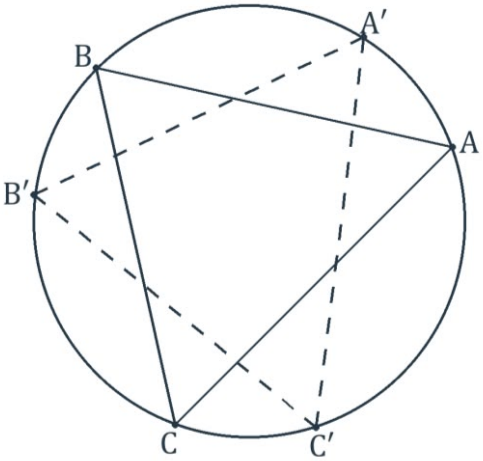
Section B: Very Short Answer Questions

6. Are there circles of all possible radii passing through A and B? What is the radius of the smallest circle passing through A and B? What is the radius of the largest circle passing through A and B?



Answer:

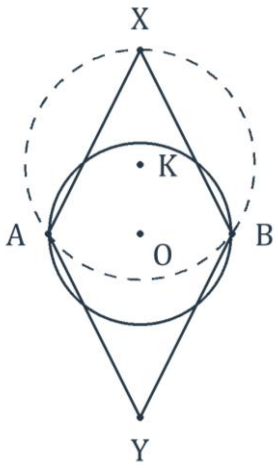
7. The circumcircle of a given ΔABC is drawn. Can there be other triangles congruent to ΔABC that share the same circumcircle?



Answer:

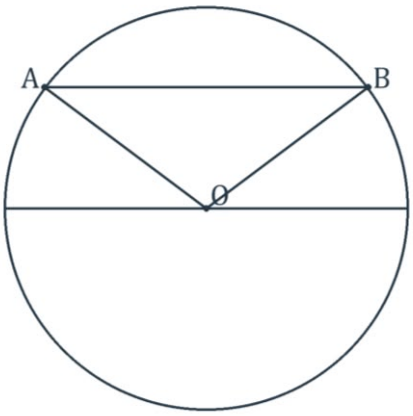
8. Let A and B be two points on a circle with centre O.

(iii) If ∠AXB = ∠AYB, and X and Y do not lie on the circle, does the circle through A, B and X also pass through Y?



Answer:

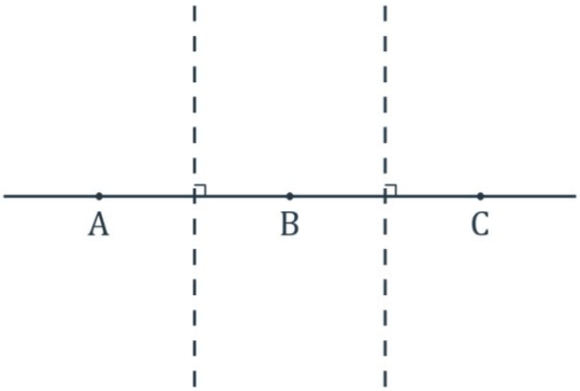
9. "There is no chord of a circle that is longer than its diameter." How do you justify this statement?



Answer:

10. A, B and C are three collinear points.

Can you show that for three collinear points A, B and C, the perpendicular bisector of AB and BC are parallel?



Answer:

Section C: Short and Long Answer Questions

11. Draw ΔABC, with AB = 6 cm, BC = 7 cm and CA = 7 cm. Draw the circumcircle of ΔABC. Let the circumcentre be O. Measure OA, OB, OC.

Answer:

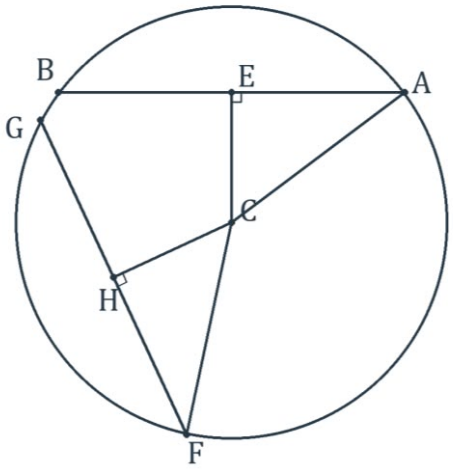
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12. Consider figure. If CE is perpendicular to AB, CH is perpendicular to GH, and CE = CH, show that AB = GF.

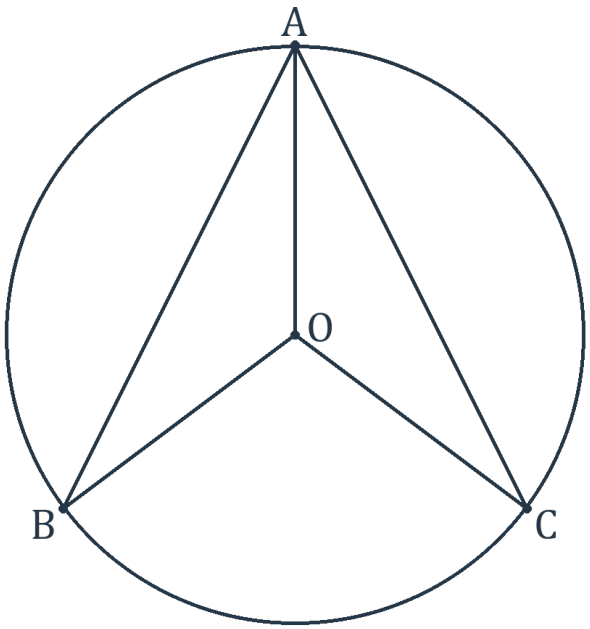


Answer:

13. Draw a circle in which a chord of 6 cm length stands at a distance of 3 cm from the centre. (**Hint:** Is it a circumcircle of a suitable triangle?)

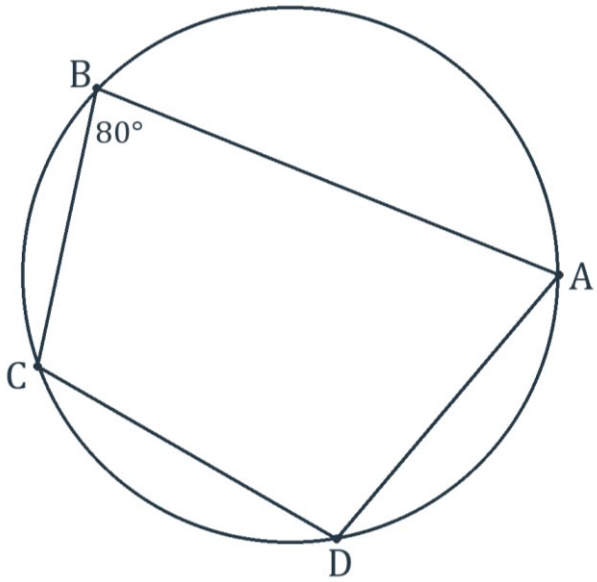
Answer:

14. In a circle with centre O, chords AB and AC are congruent. Explain why this statement is true: "The centre of the circle lies on the angle bisector of ∠BAC".



Answer:

15. In a cyclic quadrilateral ABCD, $\angle A : \angle C = 2 : 3$ and $\angle B = 80°$. Find all four angles and justify your answer.



Answer: