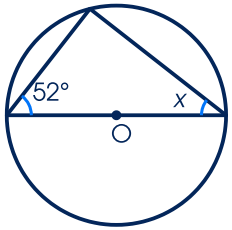
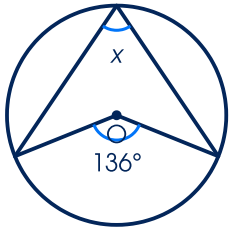
GCSE HIGHER · REVISION MAT 3

Circle theorems

1 AB is a diameter. Find *x*.

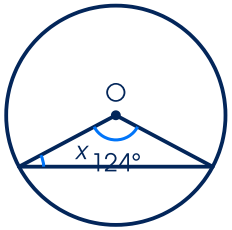


2 O is the centre. Find *x*.



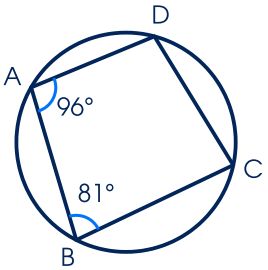
3 O is the centre. Find *x*.

Give reasons for your answer.



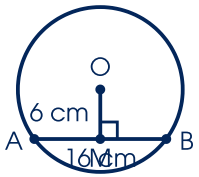
4 ABCD is a cyclic quadrilateral.

Find angles C and D.

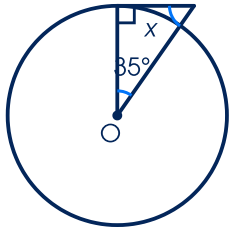


5 A chord of length 16 cm is 6 cm from the centre of a circle.

Show that the radius is 10 cm.

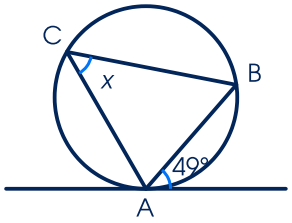


6 PT is a tangent at T. Find *x*.



7 The line is a tangent at A. Find *x*.

Give reasons for your answer.

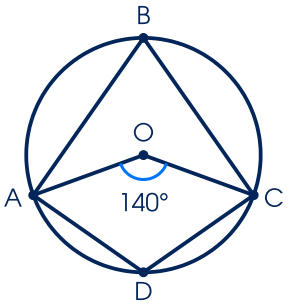


8 O is the centre of a circle.

A, B, C, D lie on the circle with B on the major arc AC and D on the minor arc AC.

Angle AOC = 140°.

Find angles ABC and ADC.



ANSWERS · REVISION MAT 3

Circle theorems

1 $x = 180 - 90 - 52 = 38°$

2 $x = 68°$

3 OA = OB (radii)

$x = (180 - 124) \div 2 = 28°$

4 C = 84°, D = 99°

5 The perpendicular from the centre bisects the chord: half-chord 8 cm.

$r = \sqrt{6^2 + 8^2} = 10$ cm

6 $x = 180 - 90 - 35 = 55°$

7 $x = 49°$

(alternate segment theorem)

8 ABC =

70° (half the angle at the centre)

ADC = 110° (cyclic quadrilateral)

Mr&Mrs MATHS