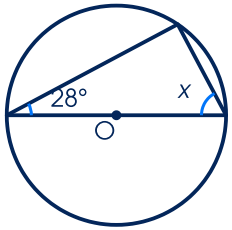
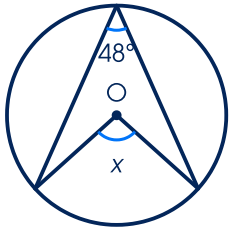
GCSE HIGHER · REVISION MAT 2

Circle theorems

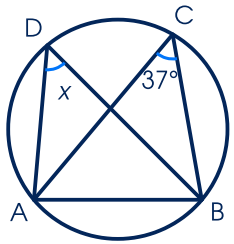
1 AB is a diameter. Find x.



2 O is the centre. Find x.

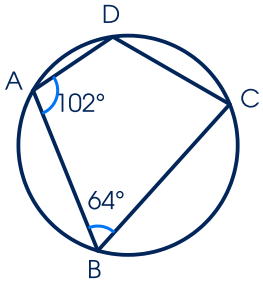


3 Find x. Give reasons for your answer.

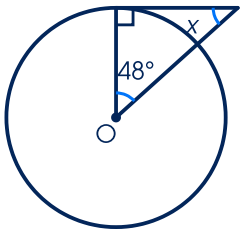


4 ABCD is a cyclic quadrilateral.

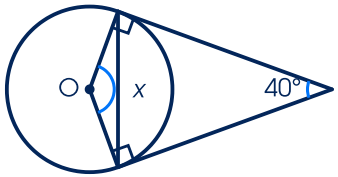
Find angles C and D.



5 PT is a tangent at T. Show that $x = 42°$.

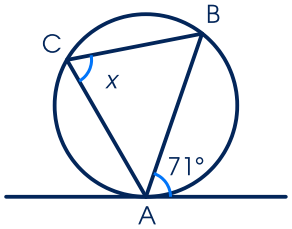


6 PA and PB are tangents. Find x.



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

Give reasons for your answer.

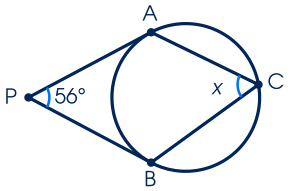


8 PA and PB are tangents to a circle, centre O.

Angle APB = 56°.

C is a point on the major arc AB.

Find angle ACB.



ANSWERS · REVISION MAT 2

Circle theorems

1 Angle in a semicircle = 90°

$x = 62°$

2 **$x = 2 \times 48 = 96°$**

The angle at the centre is twice the angle at the circumference.

3 **$x = 37°$: angles in the same segment are equal.**

4 Opposite angles add to 180°.

C = 78°, D = 116°

5 Angle OTP = 90° (tangent ⊥ radius)

$x = 180 - 90 - 48 = 42°$

6 Angles OAP and OBP are 90°

$x = 360 - 180 - 40 = 140°$

7 **$x = 71°$ (alternate segment theorem)**

8 Angle AOB = 360 − 180 − 56 = 124°

Angle ACB = 62° (half the angle at the centre)