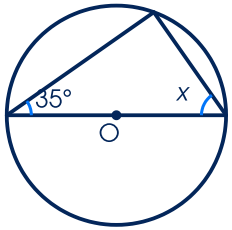
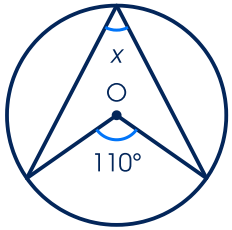
GCSE HIGHER · REVISION MAT 1

Circle theorems

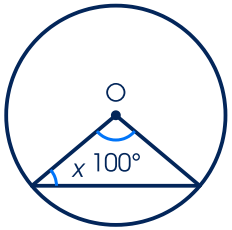
1 AB is a diameter. Find x.



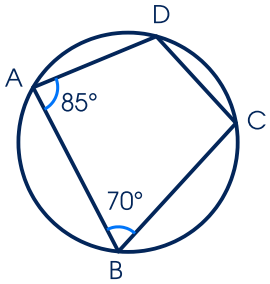
2 O is the centre. Find x.



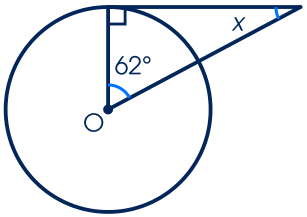
3 O is the centre. Find x.
Give reasons for your answer.



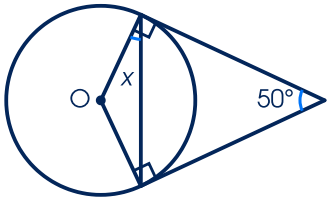
4 ABCD is a cyclic quadrilateral.
Find angles C and D.



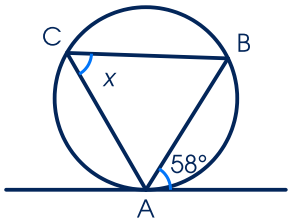
5 PT is a tangent at T. Show that $x = 28°$.



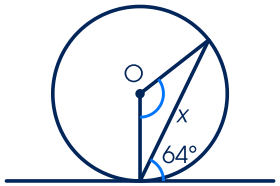
6 PA and PB are tangents. Find x.



7 The line is a tangent at A. Show that $x = 58°$.



8 The line is a tangent at A.
O is the centre. Find x.



ANSWERS · REVISION MAT 1

Circle theorems

1 Angle in a semicircle = 90°

$x = 180 - 90 - 35 = 55°$

2 **$x = 55°$: the angle at the centre is twice the angle at the circumference.**

3 OA = OB (radii), so the triangle is isosceles.

$x = (180 - 100) \div 2 = 40°$

4 Opposite angles add to 180°.

C = 95°, D = 110°

5 Tangent ⊥ radius: angle OTP = 90°

$x = 180 - 90 - 62 = 28°$

6 Angle AOB = 360 − 90 − 90 − 50 = 130°

OA = OB

$x = 25°$

7 **Alternate segment theorem: angle between tangent and chord equals the angle in the alternate segment.**

8 Angle in alternate segment = 64°

Angle at centre is double

$x = 128°$

Mr&Mrs MATHS