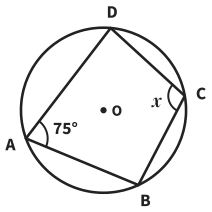
Circle Theorems: Cyclic Quadrilaterals

1

ABCD is a cyclic quadrilateral. Find x.



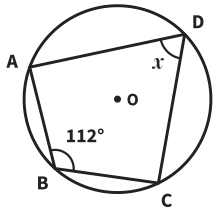
$x + 75 = 180$

Reason Opposite angles in a cyclic quadrilateral add up to 180°.

$x =$ _____

2

ABCD is a cyclic quadrilateral. Find x.



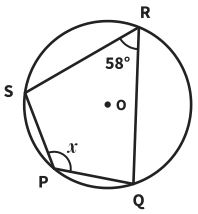
$x + 112 = 180$

Reason Opposite angles in a cyclic

$x =$ _____

3

PQRS is a cyclic quadrilateral. Find x.

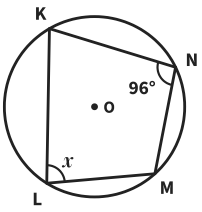


Reason Opposite

$x =$ _____

4

KLMN is a cyclic quadrilateral. Find x.

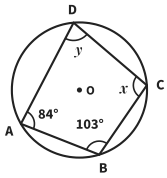


Reason

$x =$ _____

5

ABCD is a cyclic quadrilateral.
Find x and y.



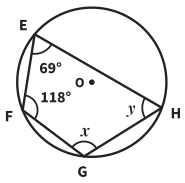
$x = 180 - 84$

Reason

$x =$ _____

6

EFGH is a cyclic quadrilateral.
Find x and y.

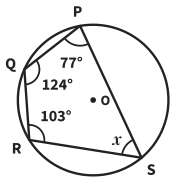


Reason

$x =$ _____

7 *Notice the change!*

PQRS is a cyclic quadrilateral. Find x.

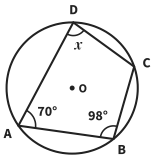


Reason

$x =$ _____

8

ABCD is a cyclic quadrilateral.
Ria says $x = 180 - 70 = 110°$.
Explain her mistake and find x.

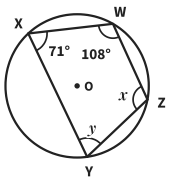


$x =$ _____

Circle Theorems: Cyclic Quadrilaterals *further practice*

9

WXYZ is a cyclic quadrilateral.
Find x and y.



Answer _____

10

The angles of a quadrilateral, in order, are 72°, 96°, 108° and 84°. Can all four corners lie on a circle? Explain.

Answer _____

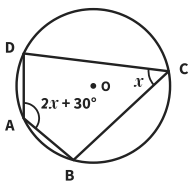
11

Three angles of a cyclic quadrilateral, in order, are 64°, 118° and 116°.
Find the fourth angle.

Answer _____

12

ABCD is a cyclic quadrilateral. Find x.



$x =$ _____

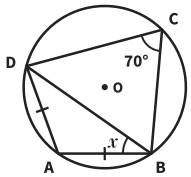
13

Four lamp posts A, B, C and D stand on the edge of a round pond, in that order.
Angle DAB is twice angle BCD.
Find angle BCD.

Answer _____

14

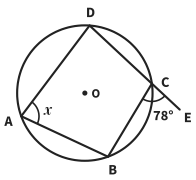
ABCD is a cyclic quadrilateral with AB = AD. Angle BCD = 70°.
Find angle ABD, marked x.



Answer _____

15

ABCD is a cyclic quadrilateral.
DC is carried on to E. Angle BCE = 78°.
Find x.



$x =$ _____

16

Two opposite angles of a cyclic quadrilateral are equal. Find their size.
Explain how you know.

So _____