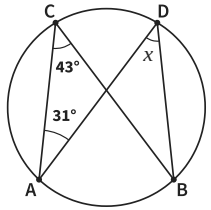
Circle theorems: angles in the same segment

ANSWERS

1

Find x. Give a reason.



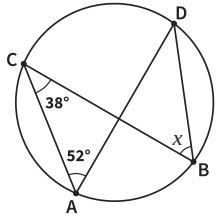
x = **angle ACB**

x = 43°

Reason: Angles in the same segment are equal.

2

Find x. Give a reason.



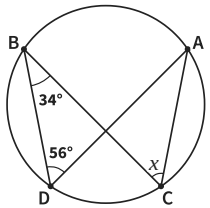
x = **angle** CAD

x = 52°

Reason: Angles in the same segment are equal.

3

Find x. Give a reason.



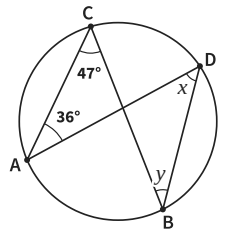
x = angle ADB

x = 56°

Reason: Angles in the same segment are equal.

4

Find x and y. Give a reason.



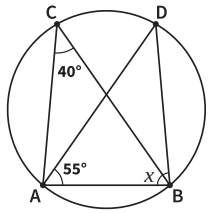
x = 47°

y = 36°

Reason: Angles in the same segment are equal.

5 Notice the change!

Find x. Give a reason.



Angle ADB = 40°

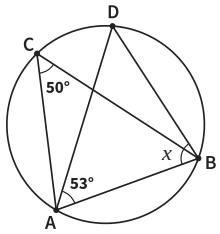
$x = 180 - 55 - 40$

x = 85°

Reason: Angles in the same segment are equal.

6

Find x. Give a reason.



Angle ADB = 50°

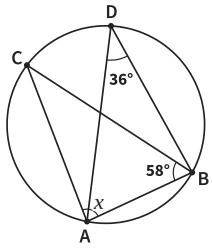
$x = 180 - 53 - 50$

x = 77°

Reason: Angles in the same segment are equal.

7

Find x. Give a reason.



Angle ACB = 36°

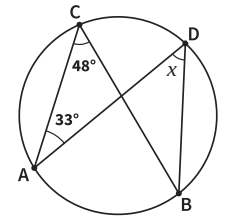
$x = 180 - 58 - 36$

x = 86°

Reason: Angles in the same segment are equal.

8

Ben says $x = 33°$ because angles in the same segment are equal.
Explain Ben's mistake.



33° stands on chord CD,

x stands on chord AB: x = angle ACB

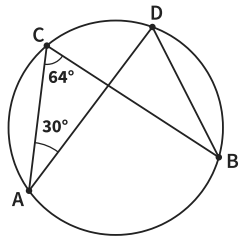
x = 48°

Circle theorems: angles in the same segment *further practice*

ANSWERS

9

Find angle ADB.



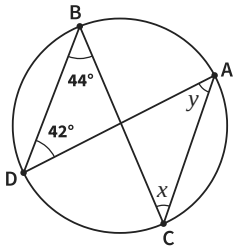
ADB and ACB stand on chord AB

Angles in the same segment are equal.

Answer 64°

10

Find x and y.



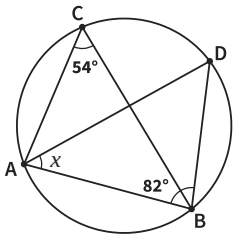
x and 42° stand on chord AB

y and 44° stand on chord CD

Answer $x = 42°$, $y = 44°$

11

Find x.



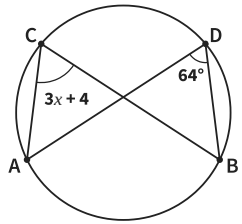
angle ADB = 54°

180 − 82 − 54

Answer 44°

12

Find x.



3x + 4 = 64

3x = 60

Answer 20

13

C and D are on a circle, on the same side of the chord AB.

Angle ACB = $2x + 30°$ and angle ADB = $4x - 10°$. Find the size of angle ACB.

2x + 30 = 4x − 10, so 40 = 2x, x = 20

2 × 20 + 30

Answer 70°

14

Four lights A, B, C and D are on a circular ring. C and D are on the same arc AB. From C, lights A and B are 41° apart. How far apart are A and B from D?

C and D are in the same segment

Answer 41°

15

C and D are on a circle, on opposite sides of the chord AB. Mia says angle ACB = angle ADB. Is she right? Explain.

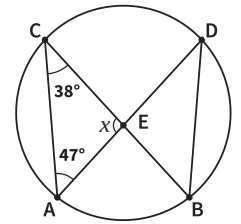
C and D are not in the same segment

So Not always

16

The chords AD and BC cross at E.

Find x.



angle ACE = 38, angle CAE = 47

180 − 38 − 47

Answer 95°