

Name: _____

Level 2 Further Maths

Circle Theorems



Corbettmaths

Ensure you have: Pencil or pen

Guidance

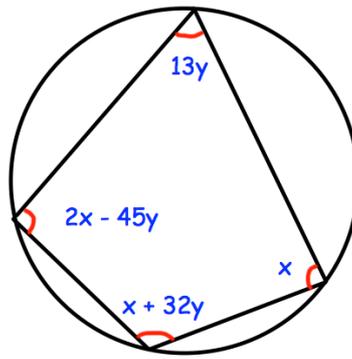
1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Revision for this topic

www.corbettmaths.com/more/further-maths/



1.

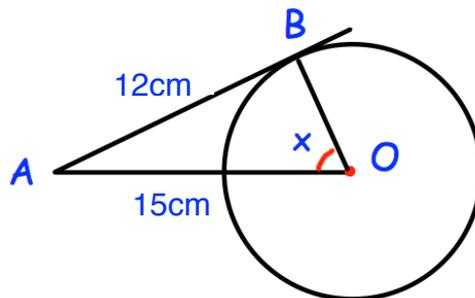


Find the values of x and y

$$x = \dots\dots\dots^\circ \quad y = \dots\dots\dots^\circ$$

(3)

2.



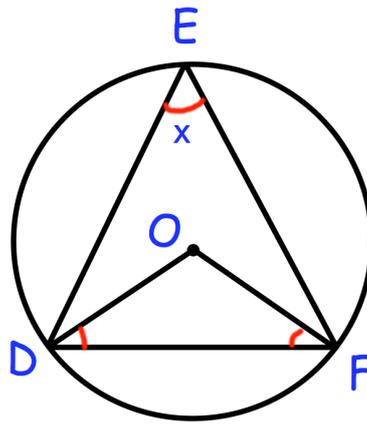
AB is a tangent to the circle.

Calculate the size of angle x .

$$x = \dots\dots\dots^\circ$$

(3)

3.

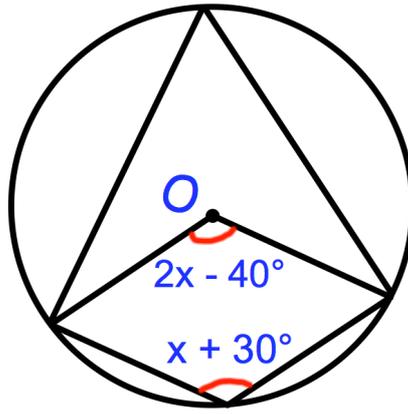


Given $\angle ODF = 2y - 10^\circ$ and $\angle OFD = y + 22^\circ$

Find $\angle DEF$

.....^o
(3)

4.

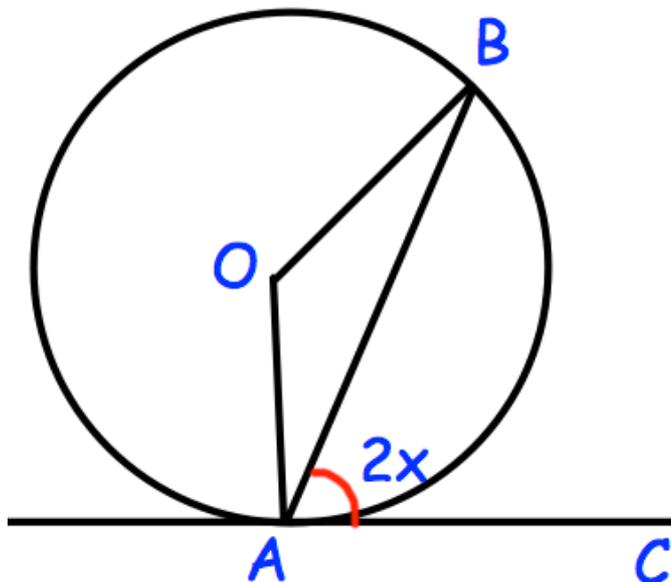


Work out the size of x

$$x = \dots\dots\dots^\circ$$

(4)

5.

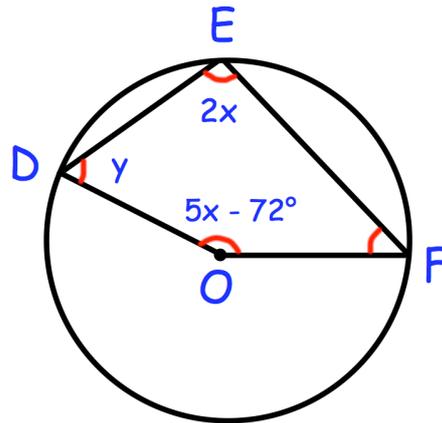


A and B are points on the circumference of a circle, centre O.
CA is a tangent to the circle.
Angle CAB = $2x$

Prove that angle AOB = $4x$
Give reasons for each stage of your working.

(4)

6.



The points D, E and F are points on a circle, centre O.

$$\text{Angle DEF} = 2x$$

$$\text{Angle DOF} = 5x - 72^\circ$$

$$\text{Angle EDO} = y$$

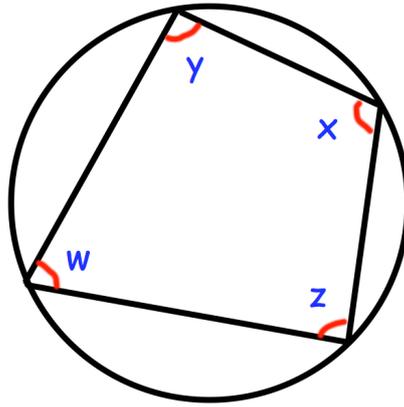
Angle EFO is 14° smaller than angle DEF

Work out the value of y

$$y = \dots\dots\dots^\circ$$

(5)

7.



$$w : x = 2 : 3$$

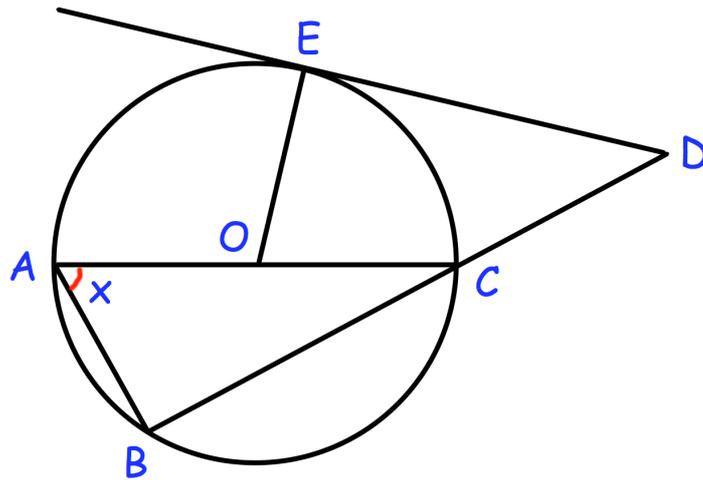
$$x : y = 9 : 8$$

Work out the size of angle z.

$$z = \dots\dots\dots^\circ$$

(5)

8.



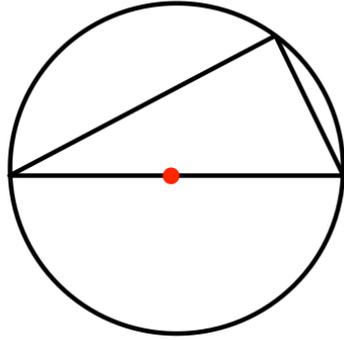
AC is the diameter of a circle, centre O.
DE is the tangent to the circle.
BCD is a straight line.
 $AO = CD$

Angle BAC = x

Express angle COD in terms of x .

.....
(5)

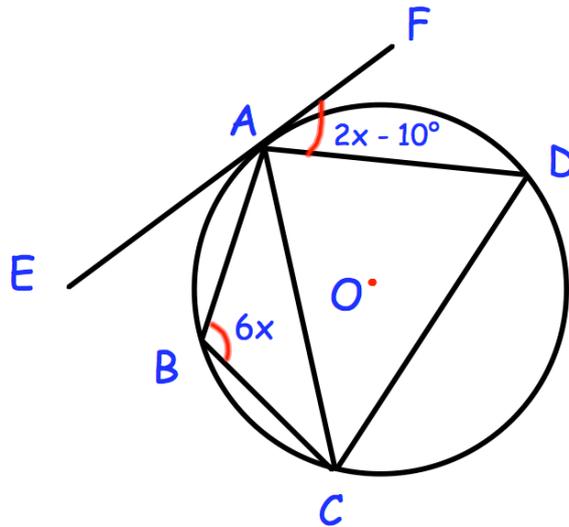
9.



Prove that the angle in a semi-circle is always 90°

(3)

10.



EF is a tangent to a circle, centre O.

$$\angle DAF = 2x - 10^\circ$$

$$\angle ABC = 6x$$

$$AC = CD$$

Find the size of angle $\angle DAF$

.....
(4)