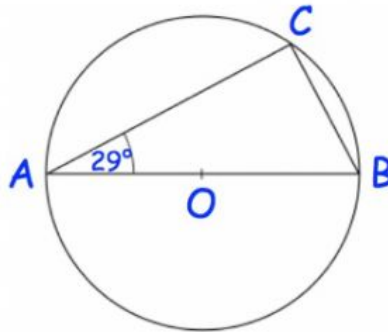


## CIRCLE THEOREMS

Answer the question. Show your working.

1. (a) In the diagram below, O is the centre of the circle and A, B and C are points on the circumference.

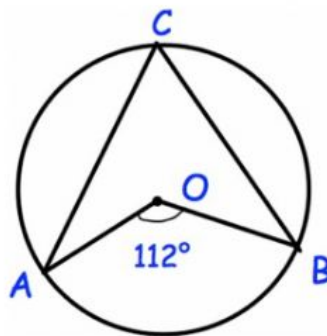


Angle A =  $29^\circ$

Work out the size of angle B.

.....<sup>°</sup>  
(1)

- (b) A, B and C are three points on the circumference of another circle. O is the centre of the circle.

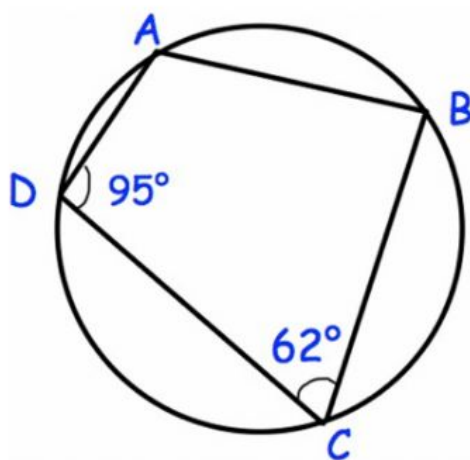


Angle AOB =  $112^\circ$

Work out the size of angle ACB.

.....<sup>°</sup>  
(1)

2. A, B, C and D are points on the circumference on a circle.



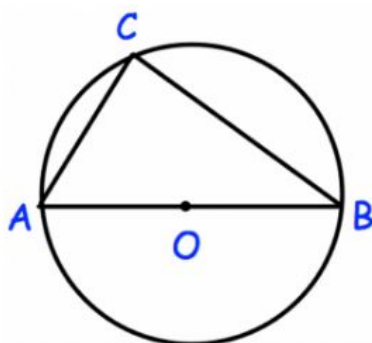
- (a) Find the size of angle DAB.

.....°  
(1)

- (b) Find the size of angle ABC.

.....°  
(1)

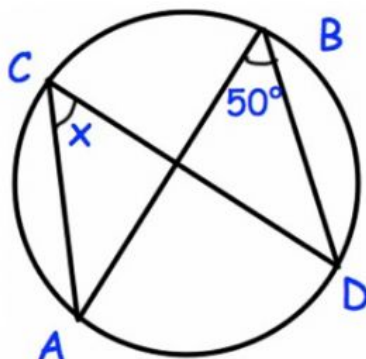
3. A circle with centre O, has points A, B and C on the circumference. Angle ABC =  $20^\circ$



Find the size of angle BAC.

.....<sup>o</sup>  
(1)

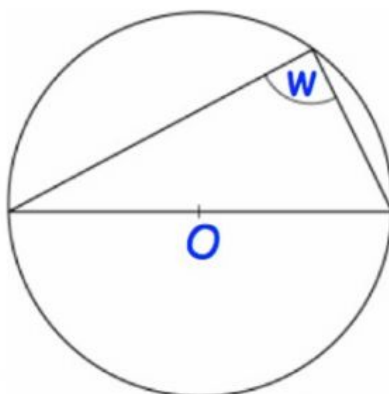
4. A, B, C and D are points on the circumference of a circle.



Find x, the size of angle ACD.

.....<sup>o</sup>  
(1)

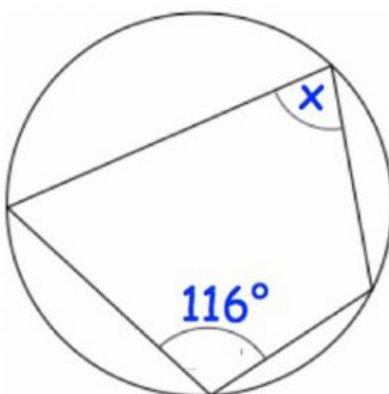
5. (a) In the diagram, O is the centre of the circle.



Write down the value of  $w$ .

.....<sup>o</sup>  
(1)

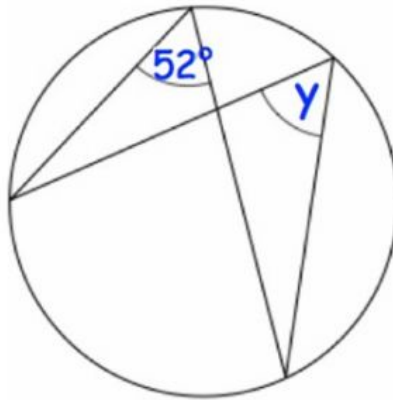
- (b)



Write down the value of  $x$ .

.....<sup>o</sup>  
(1)

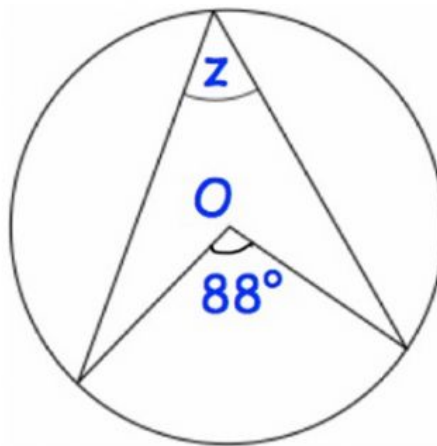
(c)



Write down the value of  $y$ .

.....<sup>o</sup>  
(1)

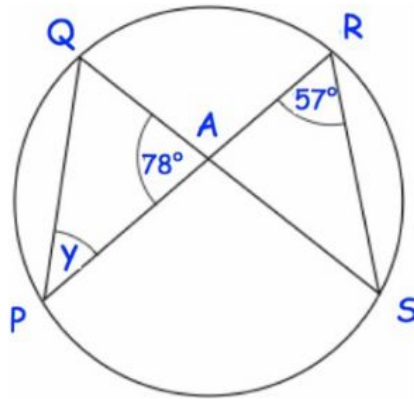
(d) In the diagram, O is the centre of the circle.



Write down the value of  $z$ .

.....<sup>o</sup>  
(1)

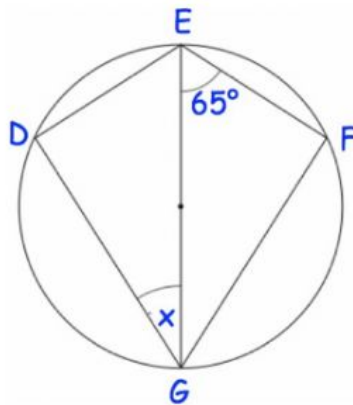
6. P, Q, R and S are four points on the circumference of a circle.  
PR meets QS at A.  
Angle PRS =  $57^\circ$  and Angle PAQ =  $78^\circ$



Work out the value of angle y.  
Include your method.

.....<sup>o</sup>  
(3)

7. The diagram shows points D, E, F and G on the circumference of a circle.  
EG is a diameter.  
DEFG is a kite.

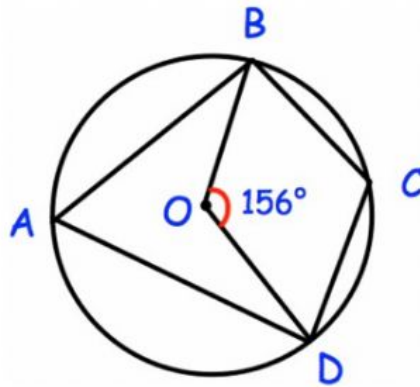


Work out the value of x.

.....<sup>o</sup>  
(2)



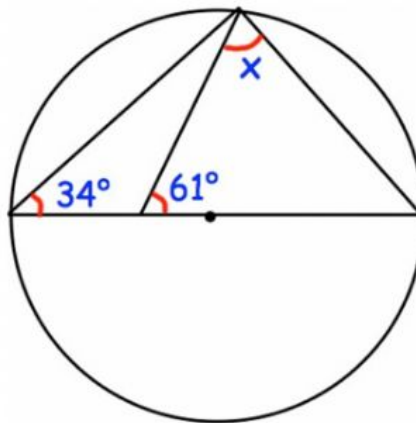
8. A, B, C and D are points on the circumference of a circle with centre O.



Work out the size of angle BCD.  
You must show your workings.

.....°  
(4)

9. AB is the diameter of a circle.

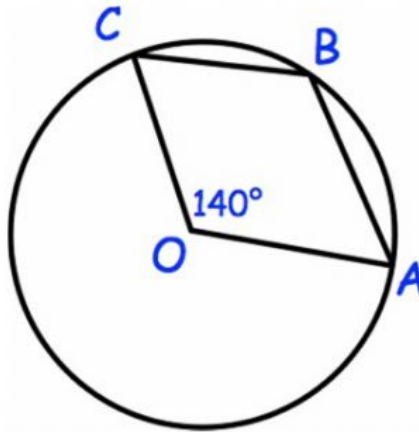


Work out the value of x.

.....°  
(3)

10. The diagram shows a circle, centre O.  
A, B and C are points on the circumference of the circle.

Angle AOC is  $140^\circ$



Explain why angle ABC is  $110^\circ$

.....

.....

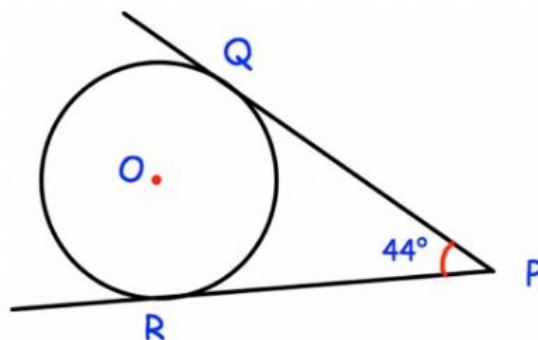
.....

.....

(2)



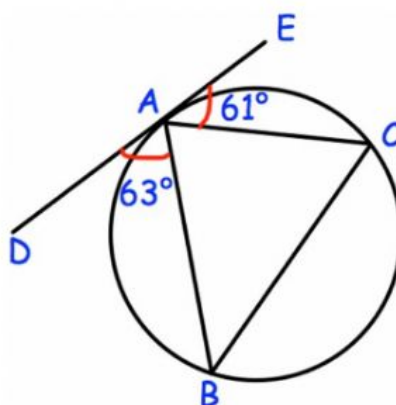
11. Q and R are points on a circle, centre O.  
PQ and PR are tangents to the circle.



Work out the size of angle POR.

.....°  
(3)

12.12.



DAE is a tangent to a circle.  
Write down the size of angle ABC.

.....°  
(1)