

Name: _____

**ASM Tuition
Academy Circle
Theorems**

Instructions:

Use **black** ink or ball-point pen.
Answer all questions.
Answer the questions in the spaces provided
- there may be more space than you need.
Diagrams are **NOT** accurately drawn, unless otherwise indicated.
You must **show all you're working out.**

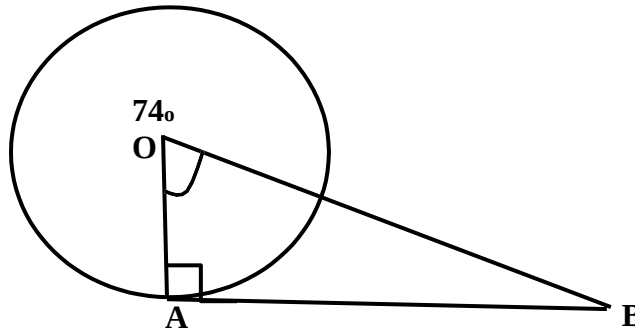
Information:

The marks for each question are shown in brackets
- use this as a guide as to how much time to spend on each question.

Advice:

Read each question carefully before you start to answer it.
Keep an eye on time.
Try to answer every question.
Check your answers if you have time at the end.

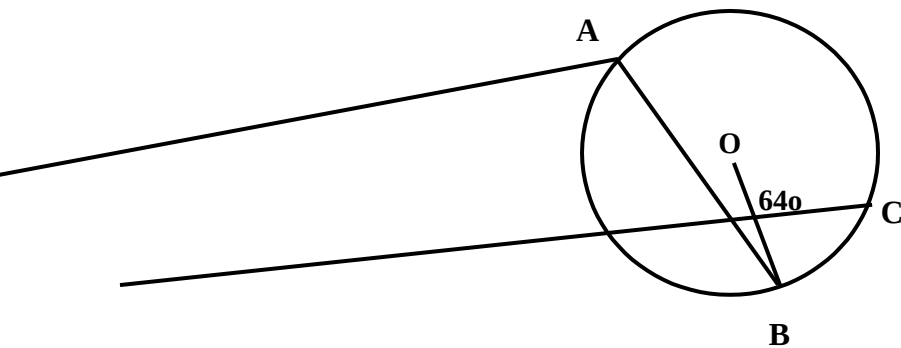
1. A is a point on the circumference of a circle, centre O. BA is a tangent to the circle.
 Angle AOB = 74°
 Work out the size of angle ABO.
 You must show all you're working.



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(Total for question 1 is 2 marks)

2. A, B, C and O are points on the circumference of a circle.
 Angle BOC = 67°



- i) Find the size of angle BAC.

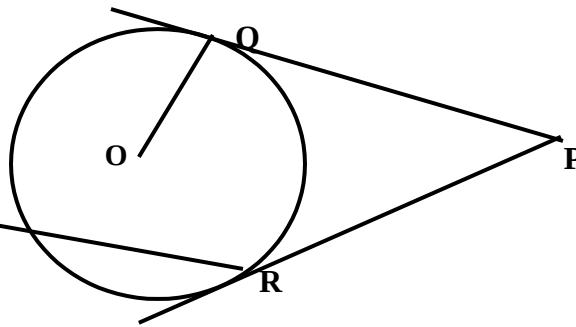
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- ii) Give a reason for your answer.

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(Total for question 2 is 2 marks)

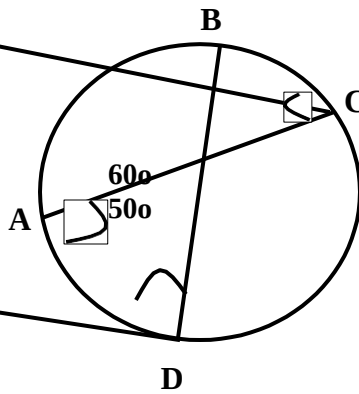
3. Q and R are points on a circle, centre O.
 PQ and PR are tangents to the circle.
 Angle QPR = 39°
 Work out the size of angle QOR.
 You must show all you're working.



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(Total for question 3 is 3 marks)

4. A, B, C and D are points on the circumference of a circle.
 Angle CAD = 60°
 Angle ADB = 50°



- i) Find the size of angle ACB.

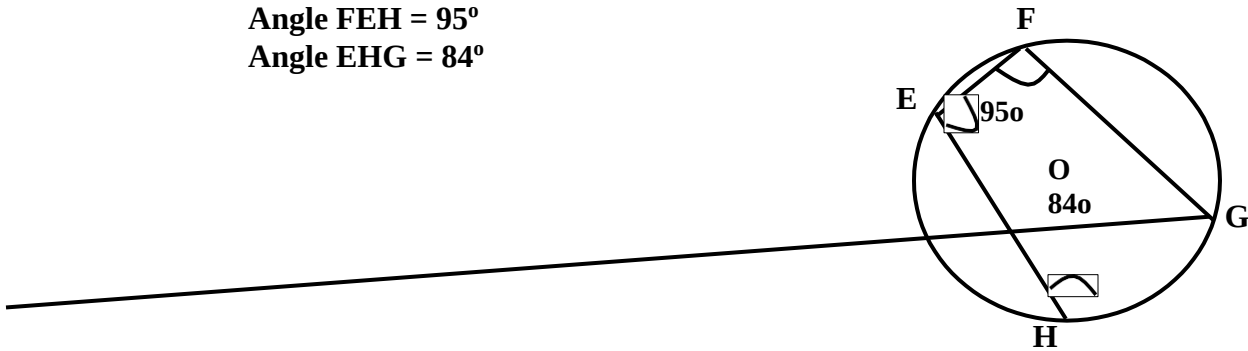
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- ii) Give a reason for your answer.

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(Total for question 4 is 2 marks)

5. E, F, G and H are points on the circumference of a circle.
 Angle FEH = 95°
 Angle EHG = 84°



- i) Find the size of angle EFG.

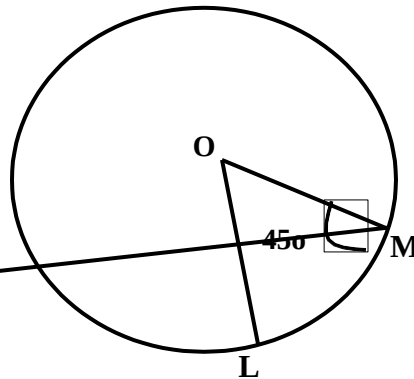
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- ii) Give a reason for your answer.

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(Total for question 5 is 2 marks)

6. L and M are points on the circumference of a circle, centre O.
 Angle LMO = 50°



- i) Find the size of angle LOM.

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- ii) Give a reason for your answer.

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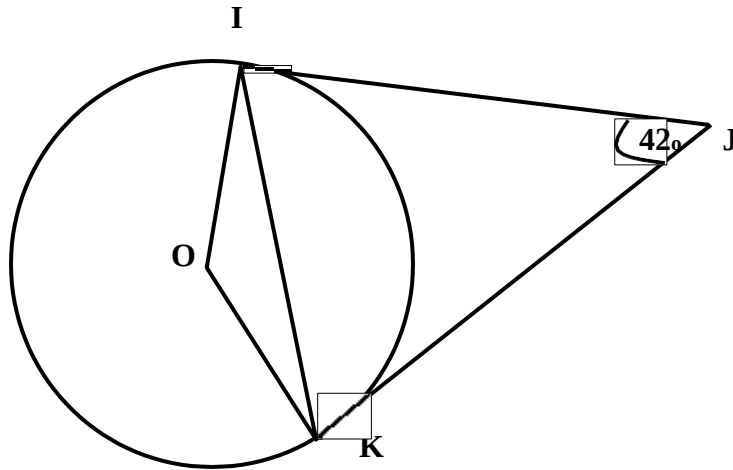
(Total for question 6 is 2 marks)

7. I and k are points on the circumference of a circle, centre O. IJ and JK are tangents to the circle.

Angle IJK = 42°

Find the size of angle OIK.

Give reason for each stage of your working.

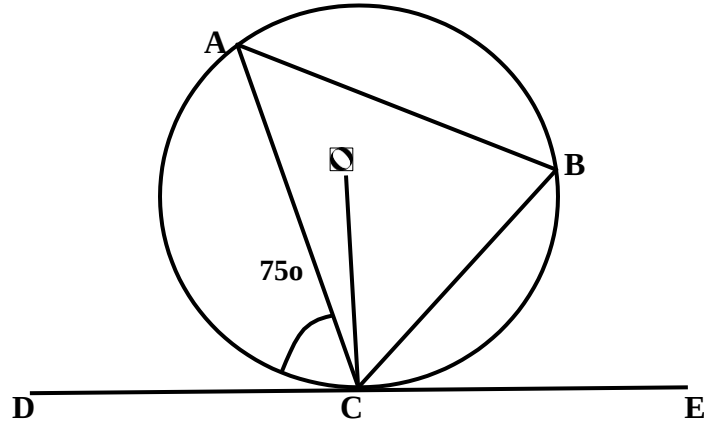


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(Total for question 7 is 4 marks)

8. A and B are points on the circumference of a circle, centre O. DCE is a tangent to the circle.

Angle ACD = 75°



- a) Find the size of angle ACO.
Give a reason for your working.

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- b) Find the size of angle ABC.
Give a reason for your working.

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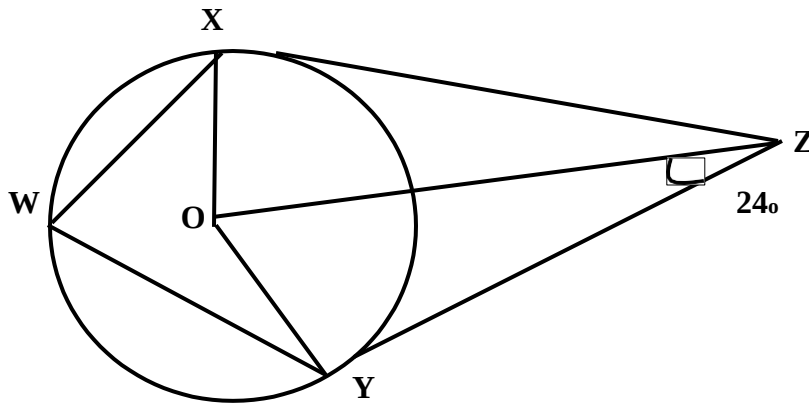
(Total for question 8 is 4 marks)

9. W, X and Y are points on the circumference of a circle, centre O.
XZ and YZ are tangent to the circle.

Angle OZY = 24°

Find the size of angle XWY.

Give reason for each stage of your working.



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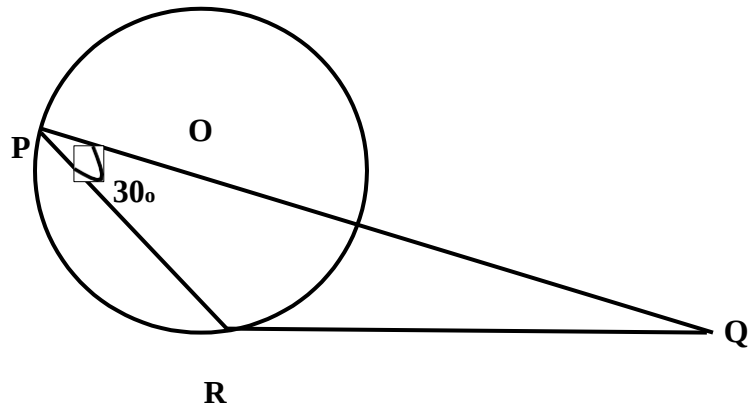
(Total for question 9 is 4 marks)

10. P and R are points on the circumference of a circle, centre O. QR are tangent to the circle.

Angle QPR = 30°

Find the size of angle PQR.

You must show all you're working.



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(Total for question 10 is 4 marks)

11. A, B and C are points on the circumference of a circle, centre O. DCE is a tangent to the circle.

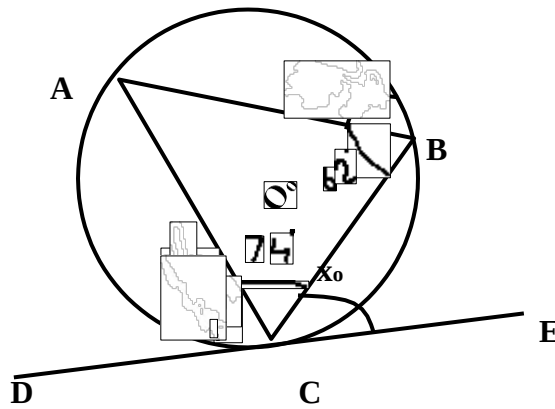
Angle ABC = 62°

Angle ACB = 74°

Angle BCE = x°

Find the value of x.

You must show all you're working.



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(Total for question 11 is 3 marks)

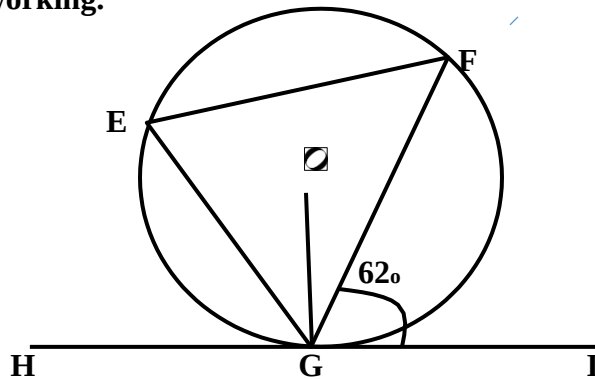
12. E, F and G are points on the circumference of a circle, centre O. HGI is a tangent to the circle.

$$EF = FE$$

$$\text{Angle FGI} = 62^\circ$$

Find the size of angle EOG.

You must show all you're working.



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(Total for question 12 is 4 marks)

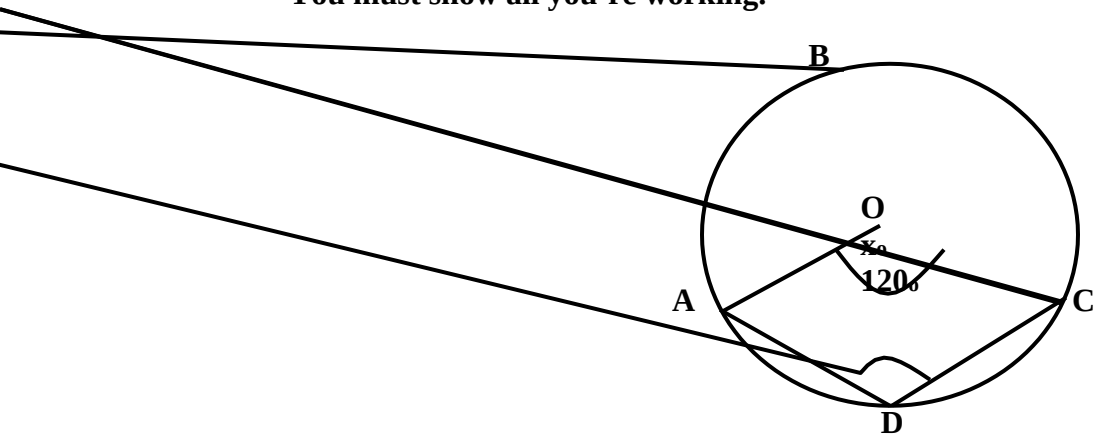
13. A, B, C and D are points on the circumference of a circle, centre O.

Angle $ADC = 120^\circ$

Angle $AOC = x^\circ$

Work out the value of x .

You must show all you're working.



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(Total for question 13 is 3 marks)

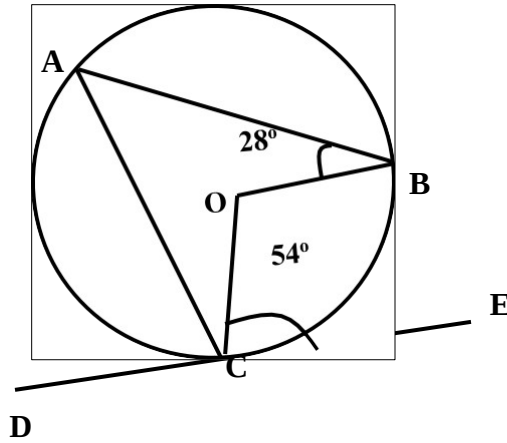
14. A, B and C are points on the circumference of a circle, centre O. DCE is a tangent to the circle.

Angle ABO = 28°

Angle BCE = 54°

Find the size of angle ACO.

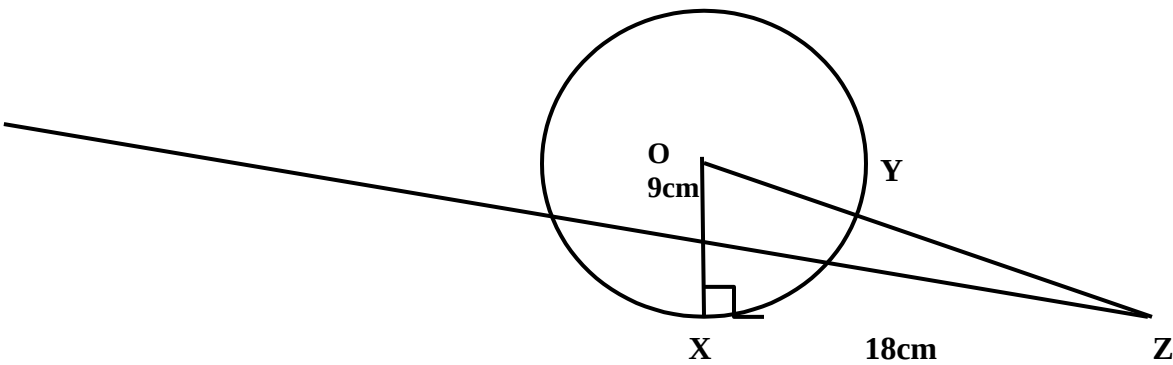
Give reasons for each stage of your working.



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(Total for question 14 is 4 marks)

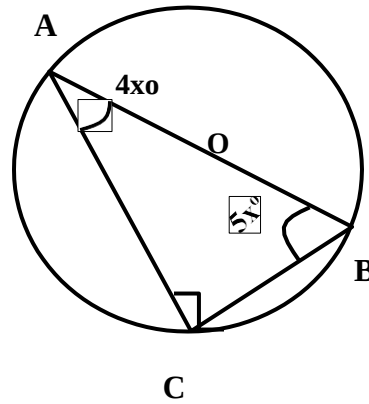
15. X and Y is a point on the circumference of a circle, centre O. XZ is a tangent to the circle.
OYZ is a straight line.
OX = 9 cm
XZ = 18 cm
Find the length of YZ.
You must show all you're working.



_____ cm

(Total for question 15 is 4 marks)

16. A, B and C are points to the circumference of a circle, centre O.
 Angle CAB = $4x^\circ$
 Angle ABC = $5x^\circ$
 Find the value of x.
 You must show all you're working.



x = _____

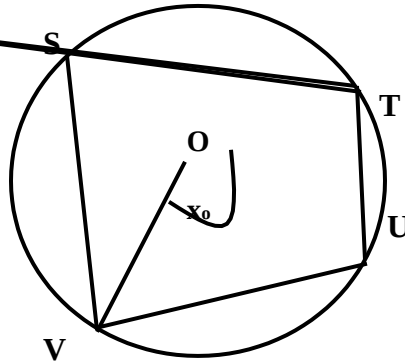
(Total for question 16 is 3 marks)

17. S, T, U and V are points on the circumference of a circle, centre O.

Angle $TOV = x^\circ$

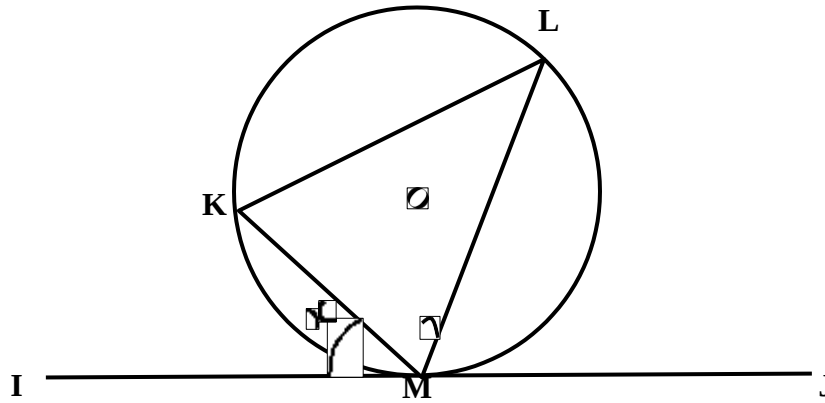
Find the size of angle TUV , in terms of x .

Give reasons for each stage of your working.



(Total for question 17 is 3 marks)

18. K, L and M are points on a circle, centre O. IMJ is a tangent to the circle at M.
 KL = LM
 Angle $IMK = x^\circ$
 Find the size of angle OML, in terms of x.
 Give reason for each stage of your working.



(Total for question 18 is 5 marks)
