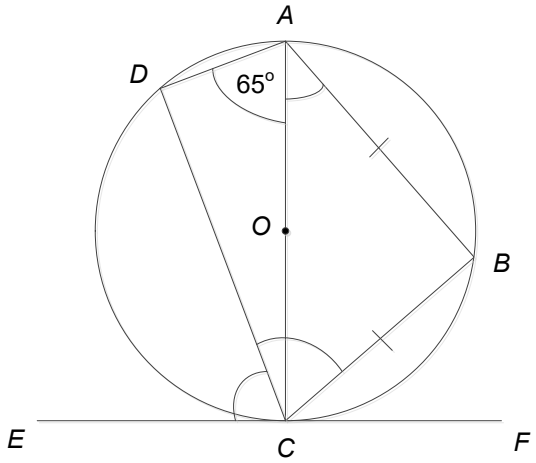
Topic Test 1 (20 minutes)

Circle theorems (non-calculator) - Higher

The diagram shows a circle centre *O*.

AB = *BC*

ECF is a tangent.



Not drawn accurately

Use the diagram to answer questions 1 to 3.

1 What is the size of angle *CAB*?

Circle your answer.

[1 mark]

25° 40° 45° 65°

2 What is the size of angle *ECD*?

Circle your answer.

[1 mark]

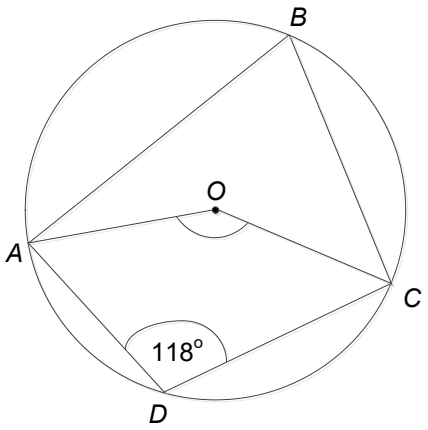
25° 40° 45° 65°

3 Work out the size of angle *BCD.*

[2 marks]

Answer _____ degrees

4 *O* is the centre of the circle.



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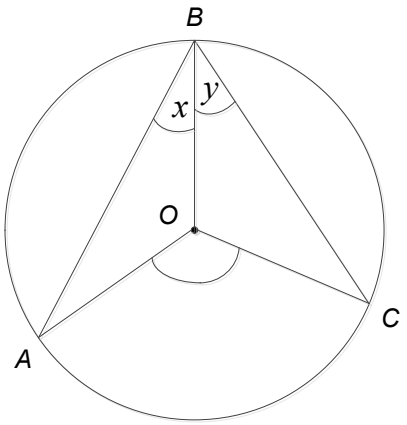
Work out the size of the obtuse angle *AOC*.

State clearly any circle theorem you use to answer the question.

[4 marks]

Answer _____ degrees

5 *O* is the centre of the circle.



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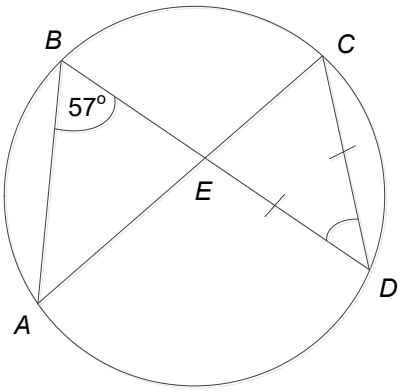
Prove that angle $AOC = 2(x + y)$.

[4 marks]

6 $CD = DE$



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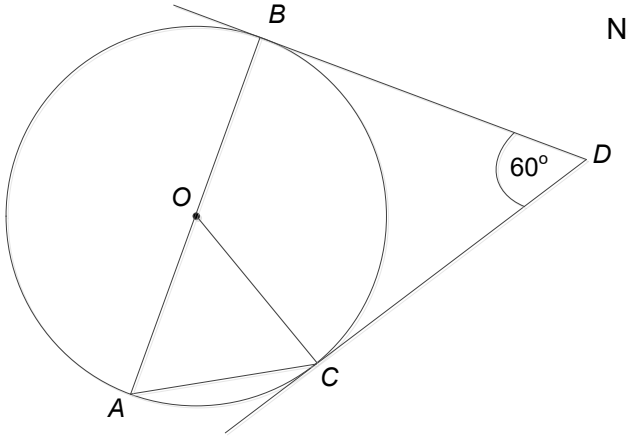
Work out the size of angle CDE.
State clearly any circle theorem you use to answer the question.

[4 marks]

Answer _____ degrees

7 *BD* and *CD* are tangents to the circle centre *O*.



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Prove that *OAC* is an equilateral triangle.

[4 marks]