Circle Theorems

1   *A*, *B*, *C* and *D* are points on a circle, centre *O*.

1 **(a)**   Write down the size of angle *CAB*.   **[1 mark]**

Answer _____ degrees

1 **(b)**   Write down the size of angle *ACD*.   **[1 mark]**

Answer _____ degrees

1 **(c)**   Write down the size of angle *AEB*.   **[1 mark]**

Answer _____ degrees

1 **(d)**   Write down the size of angle *BEC*.   **[1 mark]**

Answer _____ degrees

4

2   *A*, *B*, and *C* are points on a circle, centre *O*.
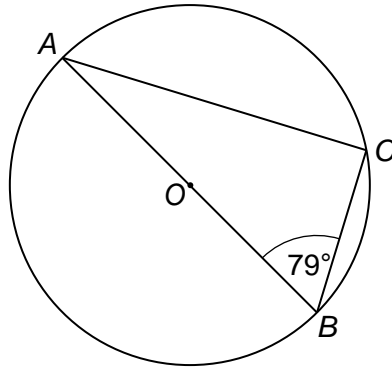
Work out the size of angle *CAB*.
Give a reason for your answer.

[2 marks]

Answer _____ degrees

Reason _____

_____

3   *A*, *B*, and *C* are points on a circle, centre *O*.
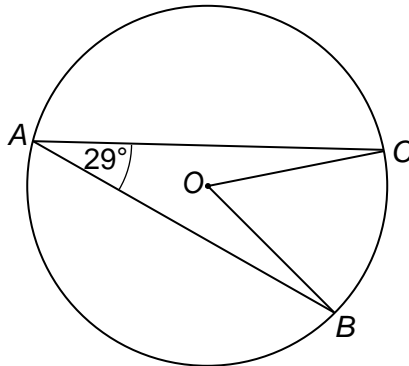
Work out the size of angle *COB*.
Give a reason for your answer.

[2 marks]

Answer _____ degrees

Reason _____

_____

4 *A*, *B*, *C* and *D* are points on a circle, centre *O*.
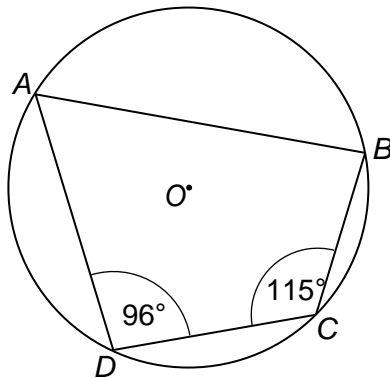

Work out the size of angle *ABC*.
Give a reason for your answer.   **[2 marks]**

Answer _____ degrees

Reason _____

_____

5 *A*, *B,* and *C* are points on a circle, centre *O*.
AB is a tangent.

Work out the size of angle *OCB*.   **[2 marks]**
Give a reason for your answer.

Answer _____ degrees

Reason _____

_____

8

Turn over ▶

6   *A*, *B*, *C* and *D* are points on a circle, centre *O*.

Work out the size of angle *ABC*.
Give reasons for your answer.

[4 marks]

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Answer _____ degrees

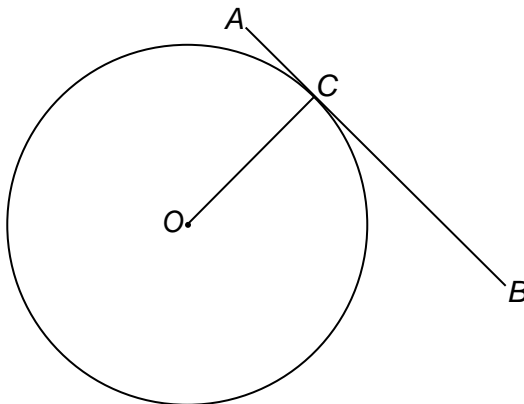**7**   *A*, *B*, *C* and *D* are points on a circle, centre *O*.
EF is a tangent.

Work out the size of angle *ABC*.
Give reasons for your answer.

[4 marks]

Answer _____ degrees

8 *A*, *B,* and *C* are points on a circle, centre *O*.

Work out the size of angle *ACB*.
Give reasons for your answer.

[3 marks]

Answer _____ degrees

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9 *A*, *B*, *C* and *D* are points on a circle, centre *O*.
BA = BD
AB and *DC* are parallel.

Work out the size of angle *DBC*.
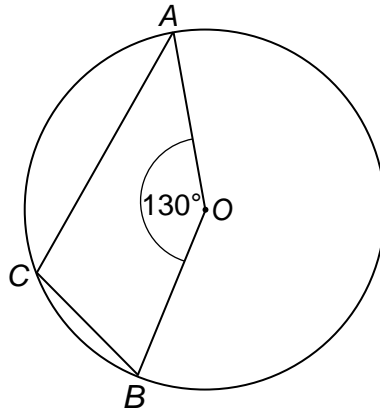Give reasons for your answer.

[5 marks]

Answer _____ degrees

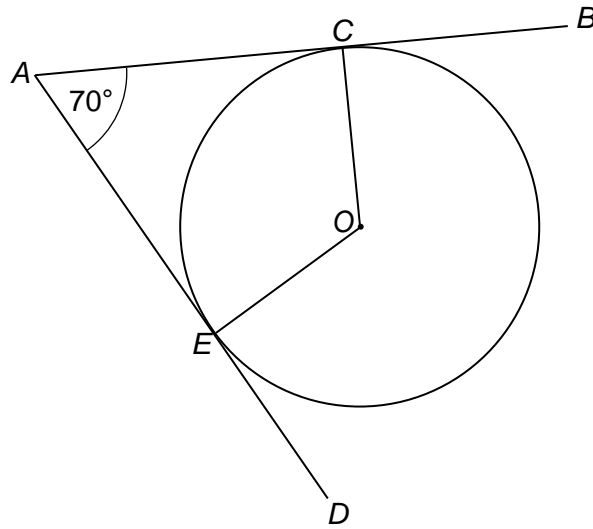**10**   *A*, *B,* and *C* are points on a circle, centre *O*.

Work out the size of angle *BAC*.
Give reasons for your answer.   **[4 marks]**

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Answer _____ degrees

11 *C* and *E* are points on a circle, centre *O*.
AB and AD are tangents.

11 (a) Work out the size of angle *COE*. **[2 marks]**

Answer _____ degrees

11 (b) *OC* = 5 cm
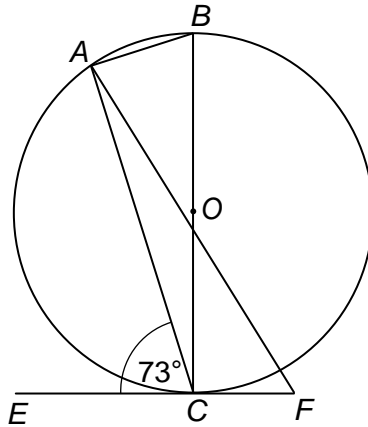Work out the length of *CA* to 1 decimal place. **[2 marks]**

Answer _____ cm

8

Turn over ▶

12   *A* and *B* are points on a circle, centre *O*.
DC and *EC* are tangents.

Work out the size of angle *FBC*.   **[4 marks]**

Answer _____ degrees

13 *A*, *B,* and *C* are points on a circle, centre *O*.
EF is a tangent.
Angle *FAB* = 5 × Angle *CAF*.
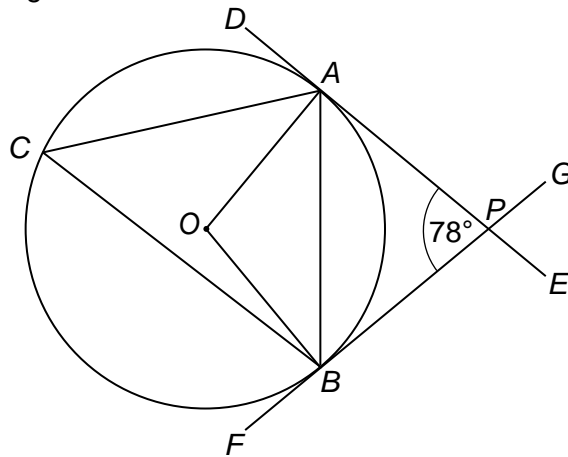

Work out the size of angle *AFC*.

[4 marks]

Answer _____ degrees

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8

14   *A*, *B*, and *C* are points on a circle, centre *O*.
        DE and *FG* are tangents.

14 (a)   Work out the size of angle *ACB*.   **[2 marks]**
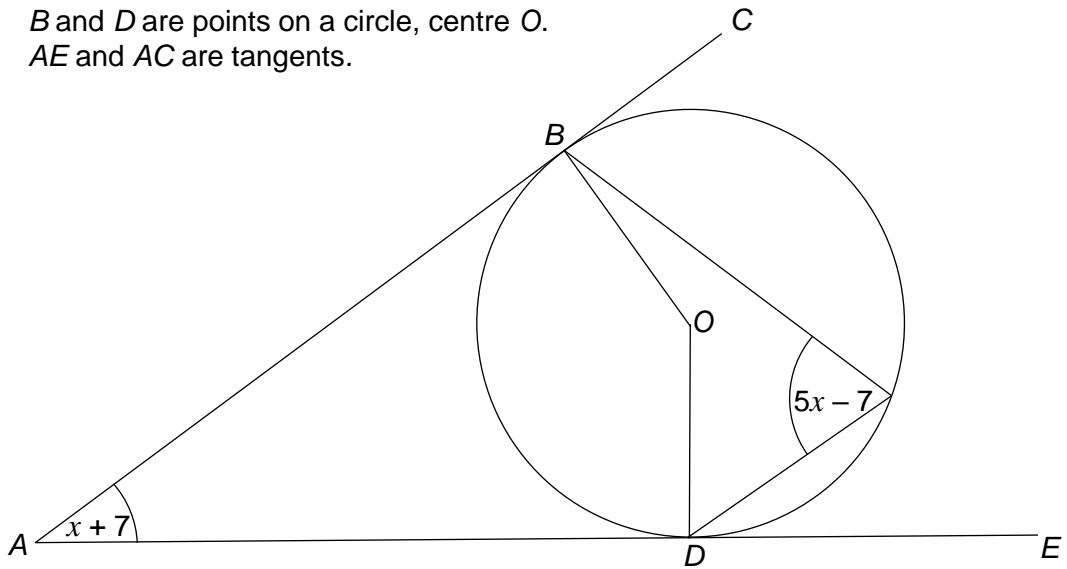
Answer _____ degrees

14 (b)   Work out the size of angle *ABP*.   **[2 marks]**

Answer _____ degrees

15   *A*, *B*, *C* and *D* are points on a circle, centre *O*.
ABCD is a trapezium with *AB* parallel to *DC*.
AB = *AC*

Work out the size of angle *DAC*.   **[5 marks]**

Answer _____ degrees

Turn over ▶

16   *B* and *D* are points on a circle, centre *O*.
           AE and *AC* are tangents.

16 (a)   Work out the value of x **[3 marks]**

Answer _____ degrees

16 (b)   *AD* = 30 cm
               Work out the length of *OD* to 3 significant figures.   **[3 marks]**

Answer _____ cm

6