Circle Theorems

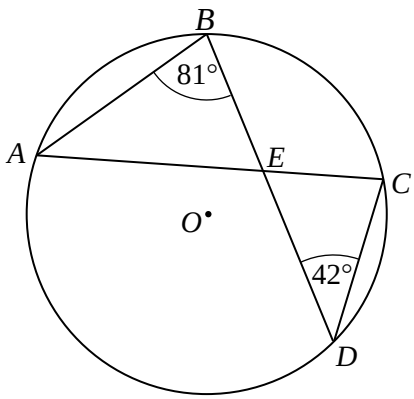
SCAN ME

REVISE THIS TOPIC

CHECK YOUR ANSWERS

SCAN ME

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



Angle *ABD* = 81°
Angle *BDC* = 42°

(a) Work out the size of angle *CAB*.

.....°

(1)

(b) Work out the size of angle *ACD*.

.....°

(1)

(c) Work out the size of angle *AEB*.

.....°

(1)

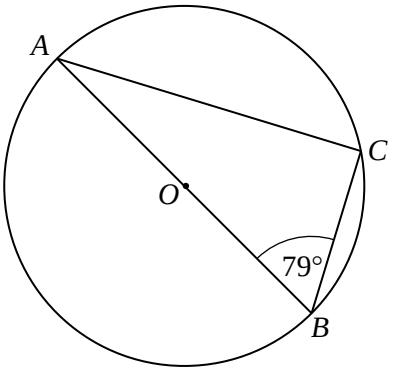
(d) Work out the size of angle *BEC*.

.....°

(1)

(Total for Question 1 is 4 marks)

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



Angle *ABC* = 79°

(a) Work out the size of angle *CAB*.

.....°

(1)

(b) Give a reason for your answer to part (a)

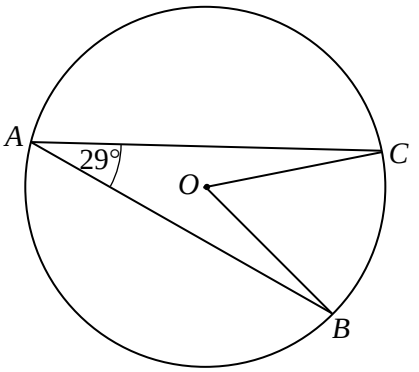
.....

.....

(1)

(Total for Question 2 is 2 marks)

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



Angle *CAB* = 29°

(a) Work out the size of angle *COB*.

.....°

(1)

(b) Give a reason for your answer to part (a)

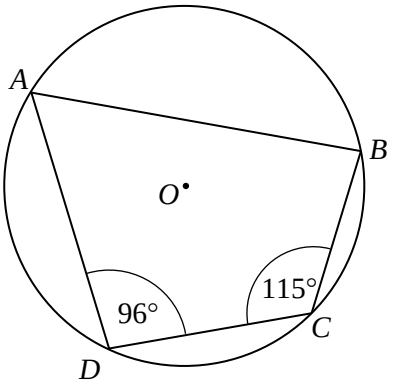
.....

.....

(1)

(Total for Question 3 is 2 marks)

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



Angle *ADC* = 96°
Angle *BCD* = 115°

(a) Work out the size of angle *ABC*.

.....°

(1)

(b) Give a reason for your answer to part (a)

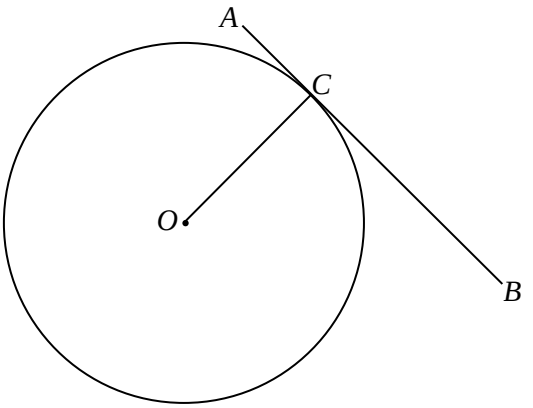
.....

.....

(1)

(Total for Question 4 is 2 marks)

5 *A*, *B*, and *C* are points on the circumference of a circle with centre *O*.
AB is the tangent to the circle at point *C*.



(a) Write down the size of angle *OCB*.

.....°

(1)

(b) Give a reason for your answer to part (a)

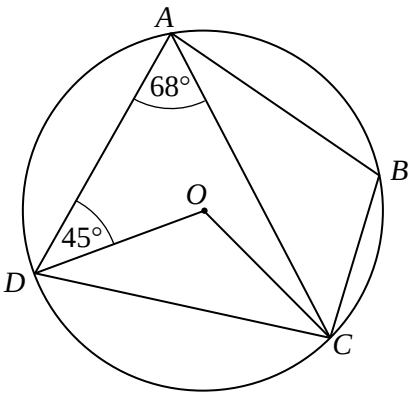
.....

.....

(1)

(Total for Question 5 is 2 marks)

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



Angle *DAC* = 68°
Angle *ADO* = 45°

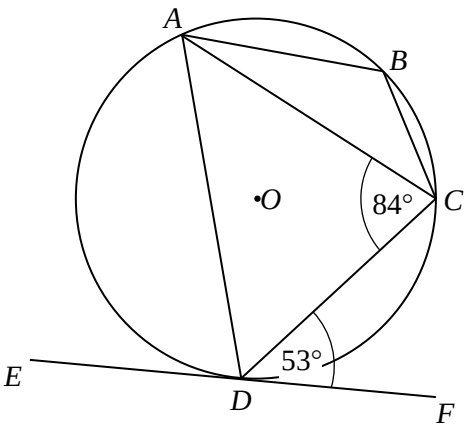
Work out the size of angle *ABC*.
Give reasons for each stage of your working.

°

.....

(Total for Question 6 is 4 marks)

7 *A*, *B*, *C* and *D* are points on the circumference of a circle with centre *O*.
EF is the tangent to the circle at point *D*.



Angle *ACD* = 84°
Angle *CDF* = 53°

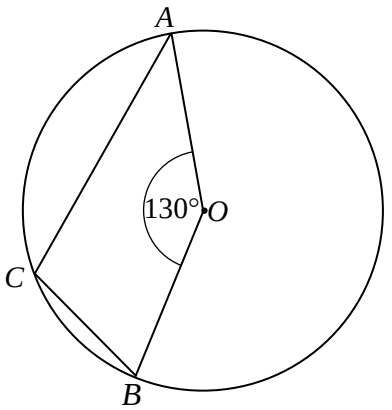
Work out the size of angle *ABC*.
Give reasons for each stage of your working.

°

.....

(Total for Question 7 is 4 marks)

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



Angle *AOB* = 130°

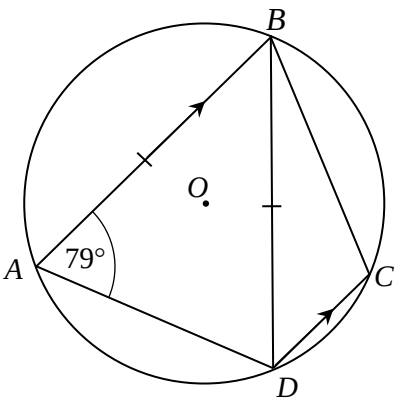
Work out the size of angle *ACB*.
Give reasons for each stage of your working.

°

.....

(Total for Question 8 is 3 marks)

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



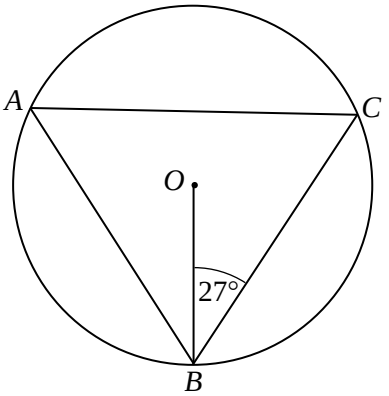
Angle *BAD* = 79°
BA = *BD*
Lines *AB* and *DC* are parallel.

Work out the size of angle *DBC*.
Give reasons for each stage of your working.

.....°

(Total for Question 9 is 5 marks)

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



Angle *CBO* = 27°

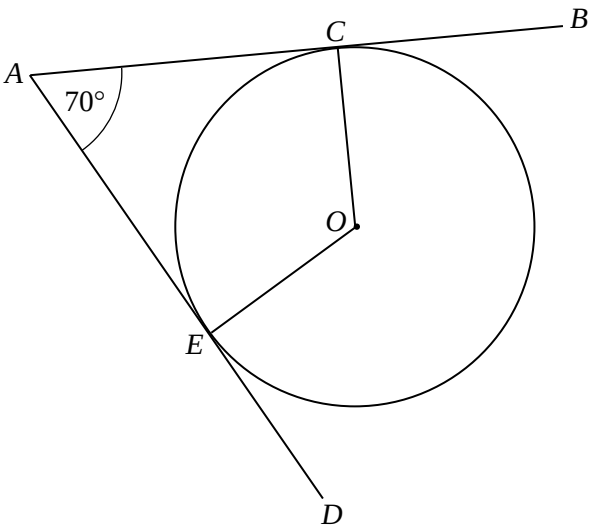
Work out the size of angle *BAC*.
Give reasons for each stage of your working.

°

.....

(Total for Question 10 is 3 marks)

11 *C* and *E* are points on the circumference of a circle with centre *O*.



AB and *AD* are tangents to the circle at *C* and *E*.
Angle *EAC* = 70°

(a) Work out the size of angle *COE*.

.....°

(2)

OC = 5 cm

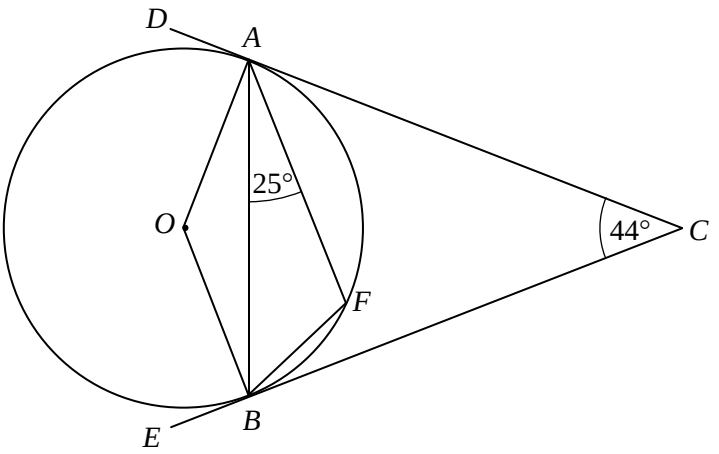
(b) Work out the length of *CA*.
Give your answer to 1 decimal place.

..... cm

(2)

(Total for Question 11 is 4 marks)

12 A and B are points on the circumference of a circle with centre O.



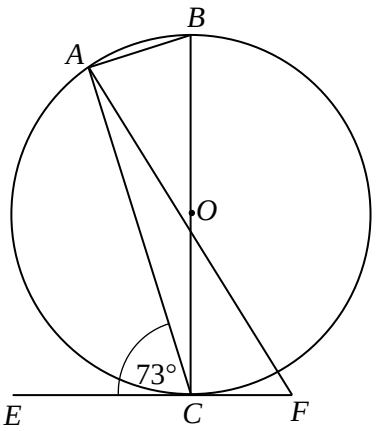
DC and EC are tangents to the circle at A and B.
Angle $ACB = 44°$
Angle $BAF = 25°$

Work out the size of angle FBC.

.....°

(Total for Question 12 is 4 marks)

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



EF is the tangent to the circle at *C*.
Angle *ACE* = 73°
Angle *FAB* = 5 × Angle *CAF*

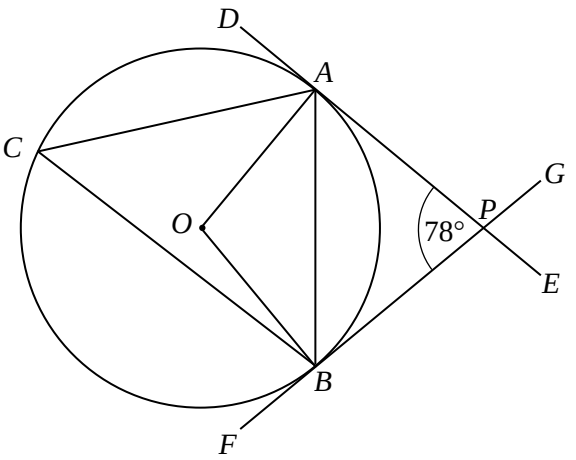
Work out the size of angle *AFC*.

°

.....

(Total for Question 13 is 4 marks)

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



DE and *FG* are tangents to the circle at *A* and *B* that intersect at the point *P*.
Angle *APB* = 78°

(a) Work out the size of angle *ACB*.

.....°

(2)

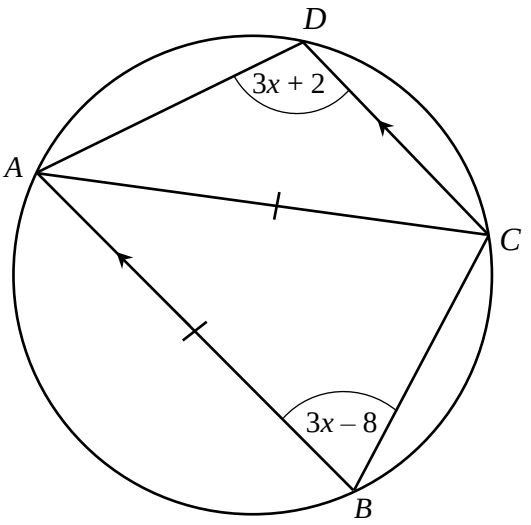
(b) Work out the size of angle *ABP*.

.....°

(2)

(Total for Question 14 is 4 marks)

15



A, *B*, *C* and *D* are points on the circumference of a circle.
ABCD is a trapezium with *AB* parallel to *DC*.

AB = *AC*

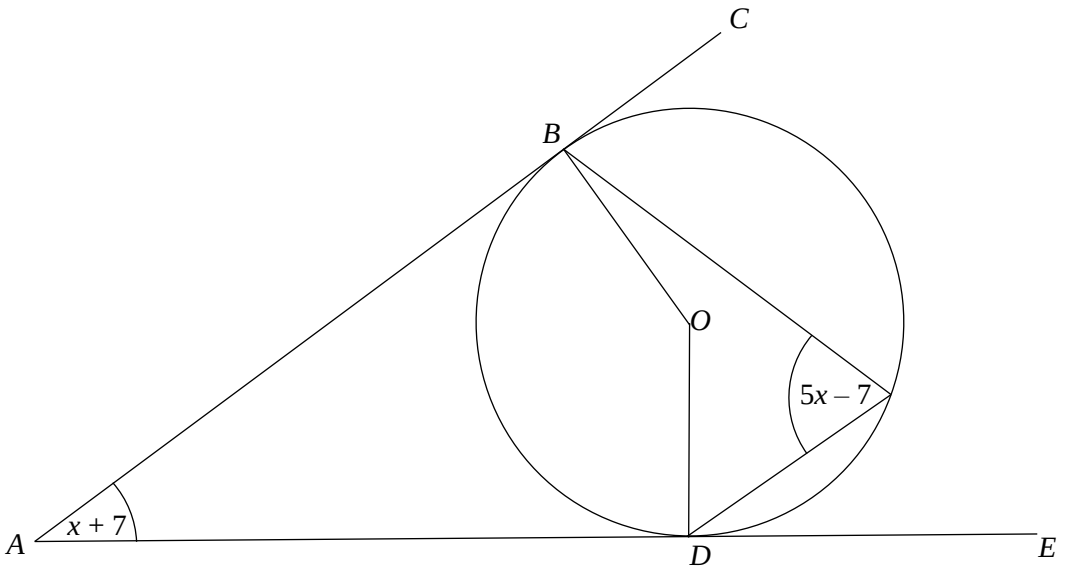
Work out the size of angle *DAC*.
You must show all your working.

°

.....

(Total for Question 15 is 5 marks)

16



B and *D* are points on the circumference of a circle, centre *O*.
ABC and *ADE* are tangents to the circle.

(a) Work out value of *x*.
You must show all your working.

x = ... °

(3)

AD = 30 cm

(b) Work out the radius of the circle.
Give your answer to three significant figures.

..... cm

(3)

(Total for Question 17 is 6 marks)