1

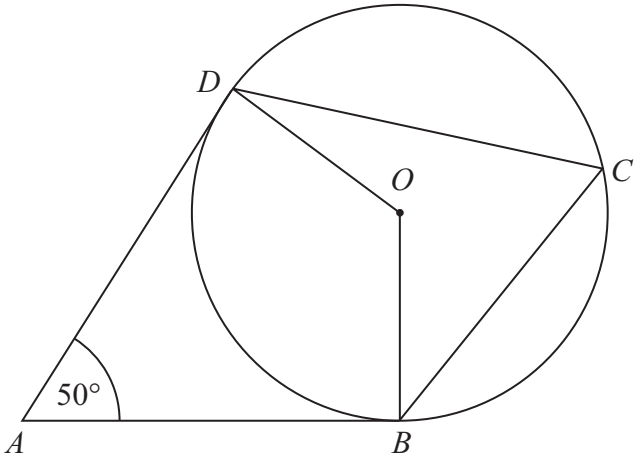


Diagram **NOT** accurately drawn

B, *C* and *D* are points on the circumference of a circle, centre *O*.
AB and *AD* are tangents to the circle.

Angle *DAB* = 50°

Work out the size of angle *BCD*.
Give a reason for each stage in your working.

(Total for Question 1 is 4 marks)

2

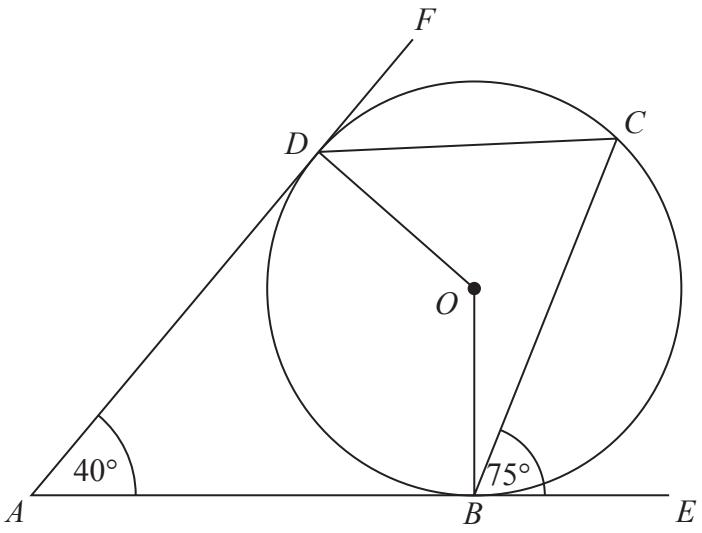


Diagram **NOT** accurately drawn

B, *C* and *D* are points on the circumference of a circle, centre *O*.
ABE and *ADF* are tangents to the circle.

Angle *DAB* = 40°
Angle *CBE* = 75°

Work out the size of angle *ODC*.

.....°

(Total for Question 2 is 3 marks)

3

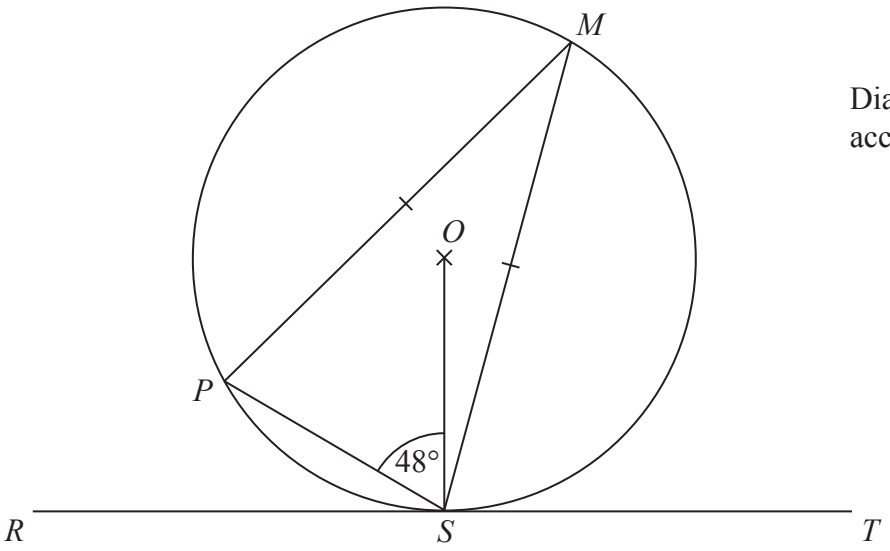


Diagram **NOT** accurately drawn

P, *M* and *S* are points on a circle, centre *O*.
RST is a tangent to the circle.

Angle *PSO* = 48°
MP = *MS*

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

(Total for Question 3 is 5 marks)

4

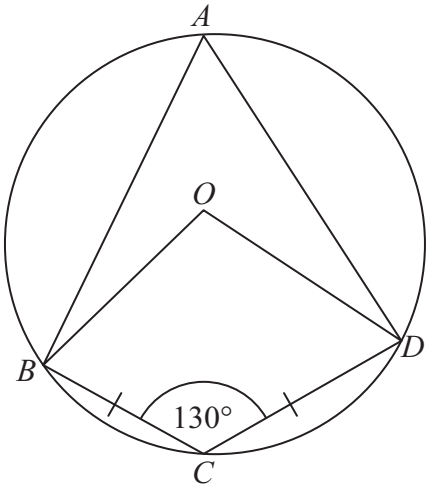


Diagram **NOT** accurately drawn

A, *B*, *C* and *D* are points on a circle, centre *O*.
BC = *CD*.
Angle *BCD* = 130°.

(a) Write down the size of angle *BAD*.
Give a reason for your answer.

.....°

(2)

(b) Work out the size of angle *ODC*.
Give reasons for your answer.

.....°

(4)

(Total 6 marks)

5

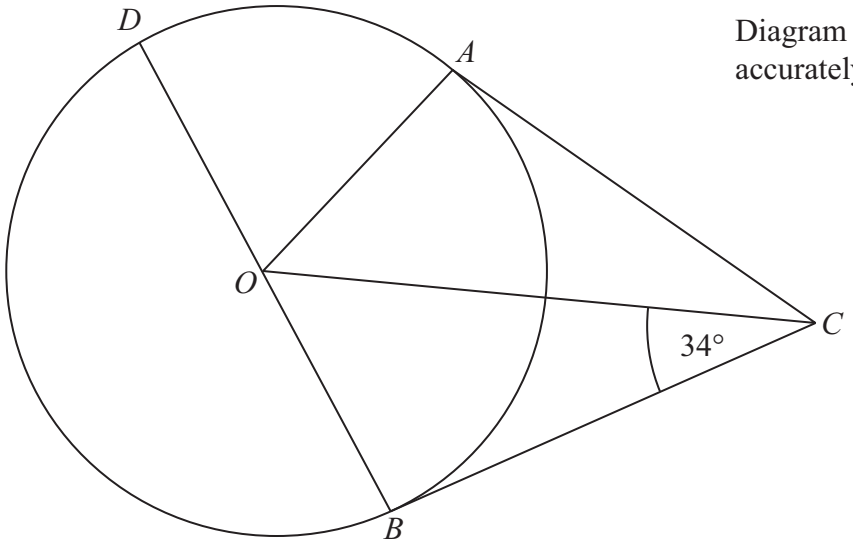


Diagram **NOT** accurately drawn

A, *B* and *D* are points on the circumference of a circle, centre *O*.
BOD is a diameter of the circle.
BC and *AC* are tangents to the circle.
Angle *OCB* = 34°.

Work out the size of angle *DOA*.

.....°

(Total for Question 5 is 3 marks)

6

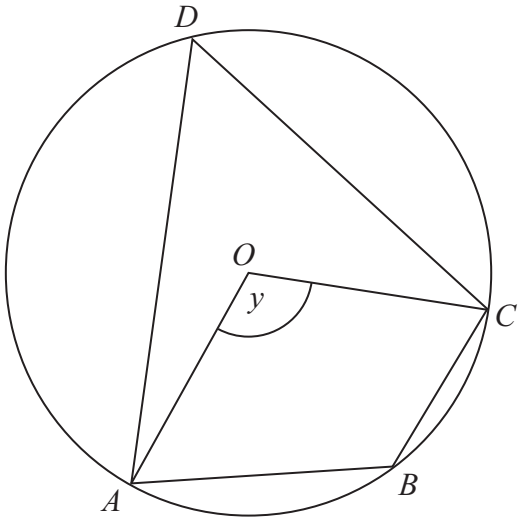


Diagram **NOT** accurately drawn

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

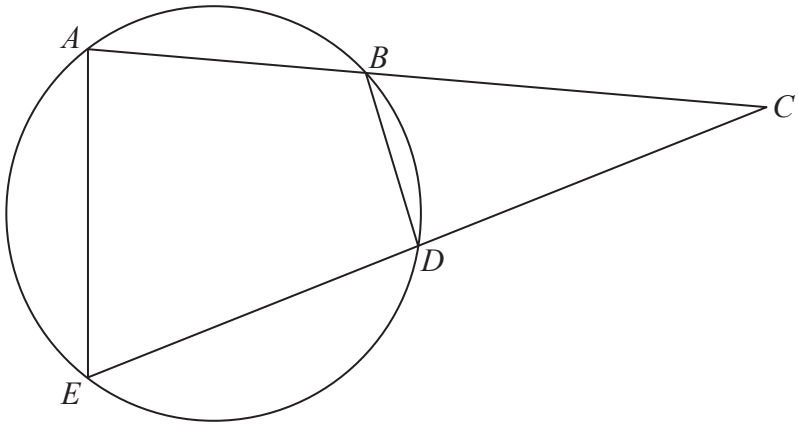
Angle *AOC* = *y*.

Find the size of angle *ABC* in terms of *y*.
Give a reason for each stage of your working.

(Total for Question 6 is 4 marks)

7

Diagram **NOT** accurately drawn



A, *B*, *D* and *E* are points on a circle.
ABC and *EDC* are straight lines.

Prove that triangle *BCD* is similar to triangle *ECA*.
You must give reasons for your working.

(Total for Question 7 is 5 marks)

8

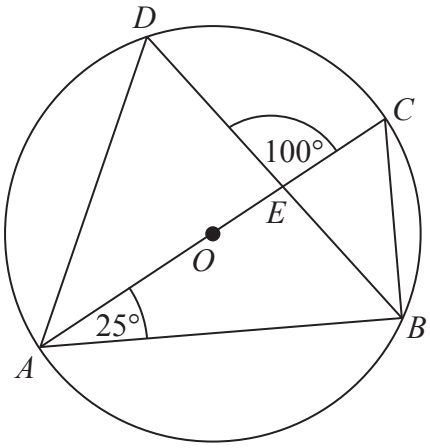


Diagram **NOT** accurately drawn

A, *B*, *C* and *D* are points on the circumference of a circle, centre *O*.
AC is a diameter of the circle.
AC and *BD* intersect at *E*.

Angle *CAB* = 25°
Angle *DEC* = 100°

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

.....°

(Total for Question 8 is 4 marks)

9

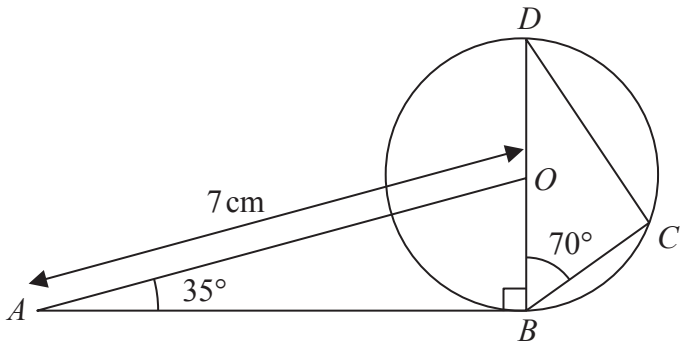


Diagram **NOT** accurately drawn

B, *C* and *D* are points on the circumference of a circle, centre *O*.
BOD is a diameter of the circle.

AO = 7 cm Angle *ABO* = 90° Angle *OAB* = 35° Angle *DBC* = 70°

*(a) Explain why angle *BCD* is 90°

.....

.....

(1)

(b) Calculate the length of *BC*.
Give your answer correct to 3 significant figures.

..... cm

(4)

(Total for Question 9 is 5 marks)

10

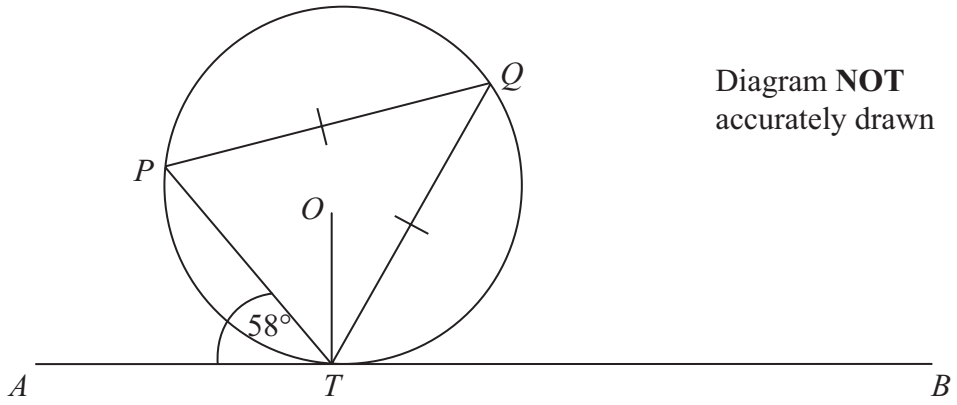


Diagram **NOT** accurately drawn

P, *Q* and *T* are points on the circumference of a circle, centre *O*.
The line *ATB* is the tangent at *T* to the circle.

PQ = *TQ*.
Angle *ATP* = 58°.

Calculate the size of angle *OTQ*.
Give a reason for each stage in your working.

.....°

(Total for Question 10 is 5 marks)