

Circle Theorems

For Pearson Edexcel GCSE Mathematics (1MA1) • Higher tier

Name _____

Total marks: **29**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. Diagrams are NOT accurately drawn.

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

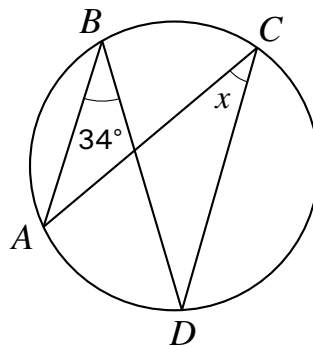


Diagram **NOT** accurately drawn

Find the size of angle x .
Give a reason for your answer.

(2)

(Total for Question 1 is 2 marks)

- 2 A, B, C and D are points on a circle.

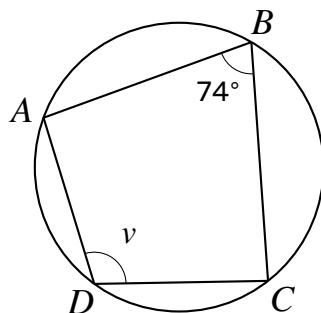


Diagram **NOT** accurately drawn

$ABCD$ is a cyclic quadrilateral.

Find the size of angle v .

Give a reason for your answer.

(2)

(Total for Question 2 is 2 marks)

- 3 A, B and C are points on a circle.

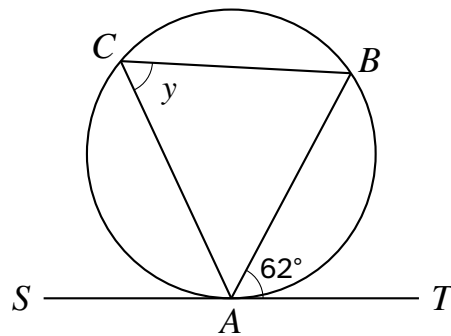


Diagram **NOT** accurately drawn

ST is the tangent to the circle at A .

Angle $BAT = 62^\circ$

Find the size of angle y .

Give a reason for your answer.

(2)

(Total for Question 3 is 2 marks)

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

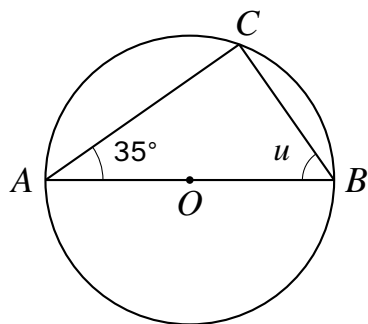


Diagram **NOT** accurately drawn

AB is a diameter of the circle.

Work out the size of angle u .

Give a reason for each stage of your working.

(3)

(Total for Question 4 is 3 marks)

- 5 A and B are points on a circle, centre O .

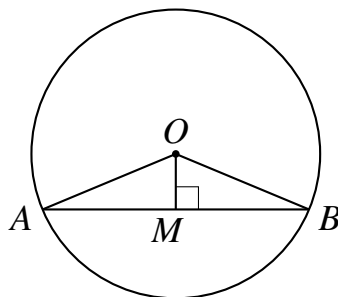


Diagram **NOT** accurately drawn

M is the point on the chord AB such that OM is perpendicular to AB .

$OA = 13$ cm and $AB = 24$ cm

Work out the length of OM .

..... cm
(3)

(Total for Question 5 is 3 marks)

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

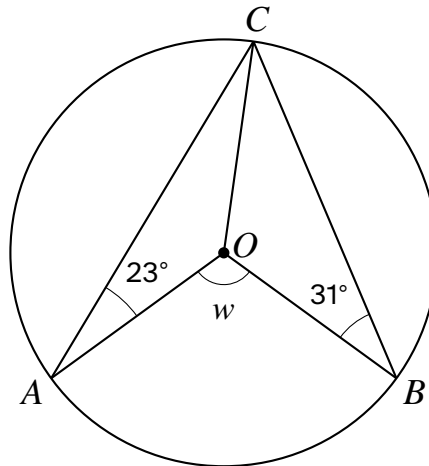


Diagram **NOT** accurately drawn

Angle $OAC = 23^\circ$ and angle $OBC = 31^\circ$

Work out the size of angle w .

You must give a reason for each stage of your working.

(4)

(Total for Question 6 is 4 marks)

7 A and B are points on a circle, centre O .

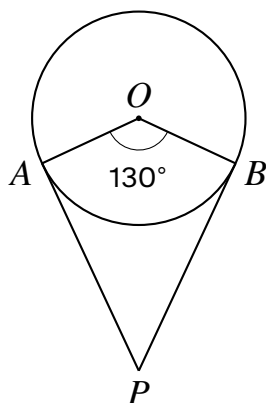


Diagram **NOT** accurately drawn

PA and PB are tangents to the circle from the point P .

Angle $AOB = 130^\circ$

Show that triangle PAB is isosceles and find angle PAB .

Give reasons for your answer.

(3)

(Total for Question 7 is 3 marks)

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

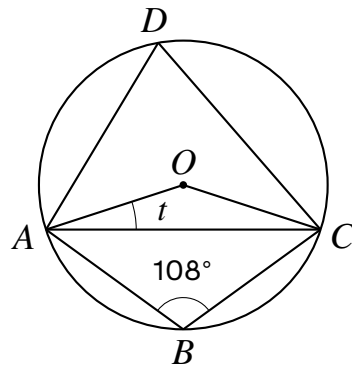


Diagram **NOT** accurately drawn

$ABCD$ is a cyclic quadrilateral. Angle $ABC = 108^\circ$

Work out the size of angle t .

Give a reason for each stage of your working.

(4)

(Total for Question 8 is 4 marks)

- 9 A, B, C and D are points on a circle.

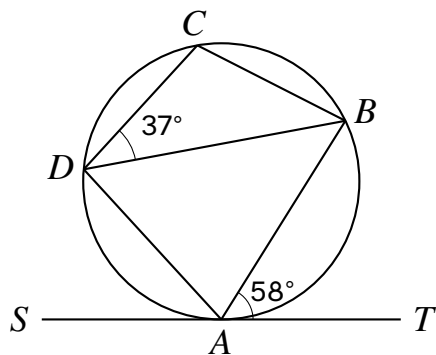


Diagram **NOT** accurately drawn

SAT is the tangent to the circle at A .

Angle $TAB = 58^\circ$ and angle $BDC = 37^\circ$

Work out the size of angle ADC .

Give a reason for each stage of your working.

(3)

(Total for Question 9 is 3 marks)

- 10 A, B, C and D are points on a circle.

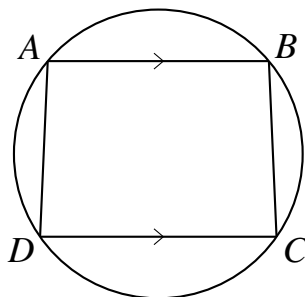


Diagram **NOT** accurately drawn

AB is parallel to DC .

Prove that angle ADC = angle BCD .

(3)

(Total for Question 10 is 3 marks)
