

Circle Theorems

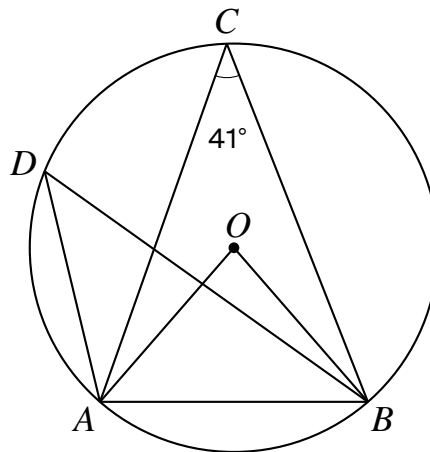
For AQA Level 2 Certificate in Further Mathematics (8365)

Name _____

Total marks: **29**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You may use a calculator.

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



Not drawn accurately

- (a) Angle $ACB = 41^\circ$
Give a reason why angle ADB is also 41° .

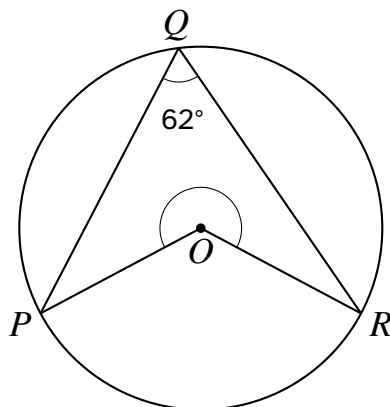
[1 mark]

- (b) Work out the size of angle OAB .
Give reasons for your answer.

[2 marks]

Answer _____ $^\circ$

- 2 P, Q and R are points on a circle, centre O .



Not drawn accurately

Angle $PQR = 62^\circ$

What is the size of the reflex angle POR ?

Circle your answer.

[1 mark]

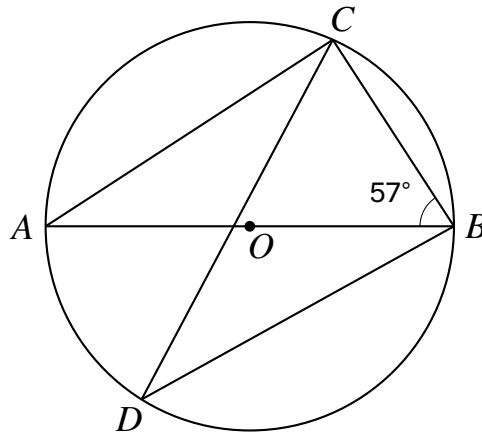
118°

124°

236°

298°

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



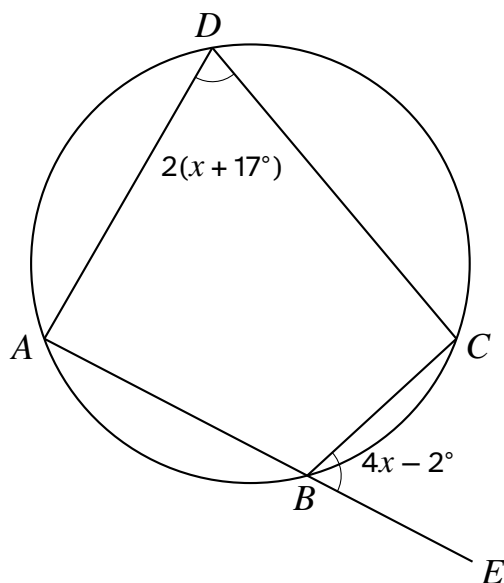
Not drawn accurately

AB is a diameter of the circle.
Angle $ABC = 57^\circ$
Work out the size of angle BDC .
Give reasons for your answer.

[3 marks]

Answer _____ $^\circ$

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



Not drawn accurately

$ABCD$ is a cyclic quadrilateral.

ABE is a straight line.

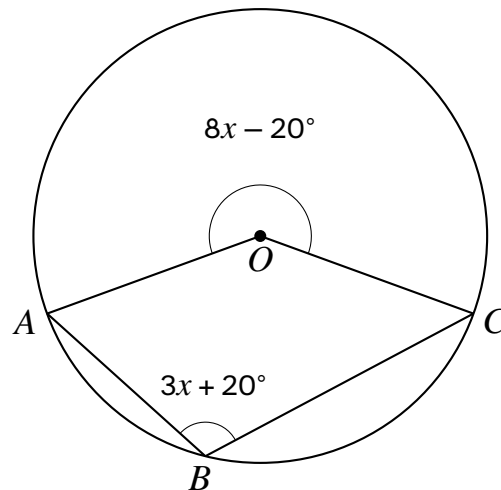
Angle $ADC = 2(x + 17^\circ)$ Angle $CBE = 4x - 2^\circ$

Work out the size of angle ABC .

[3 marks]

Answer _____[°]

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



Not drawn accurately

- (a) Work out the value of x .

[3 marks]

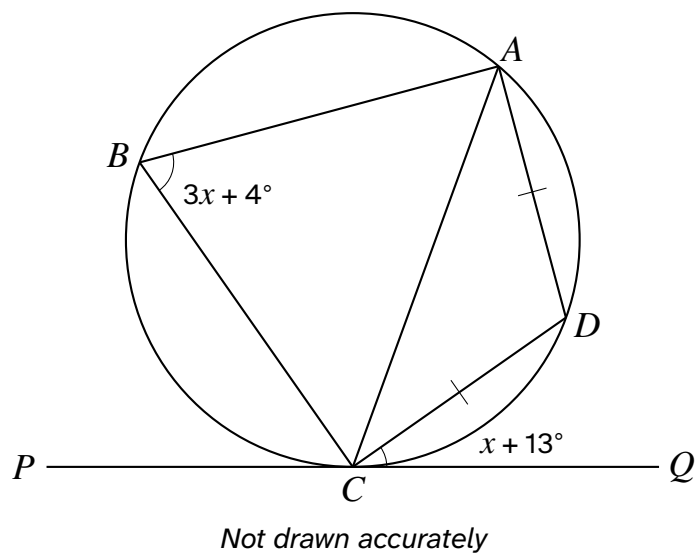
$x =$ _____

- (b) Angle $OCB = 48^\circ$
Work out the size of angle OAB .
Give reasons for your answer.

[2 marks]

Answer _____ $^\circ$

- 6 A, B, C and D are points on a circle.
 PCQ is the tangent to the circle at C .
 $AD = CD$

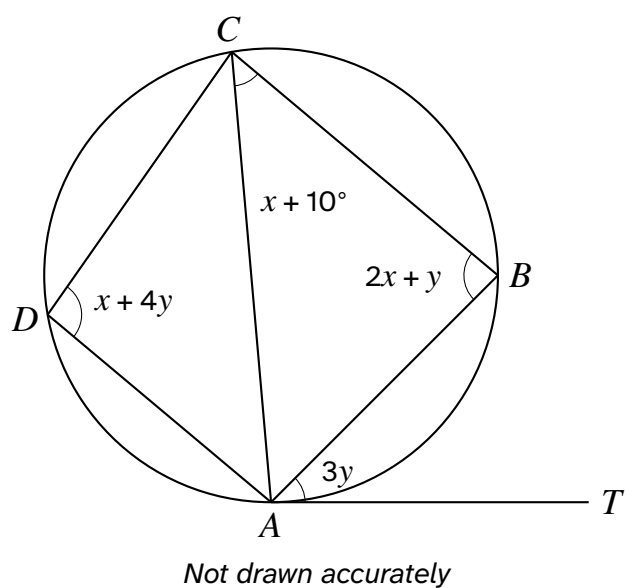


Work out the value of x .

[4 marks]

$x =$ _____

- 7 A, B, C and D are points on a circle.
 AT is the tangent to the circle at A .

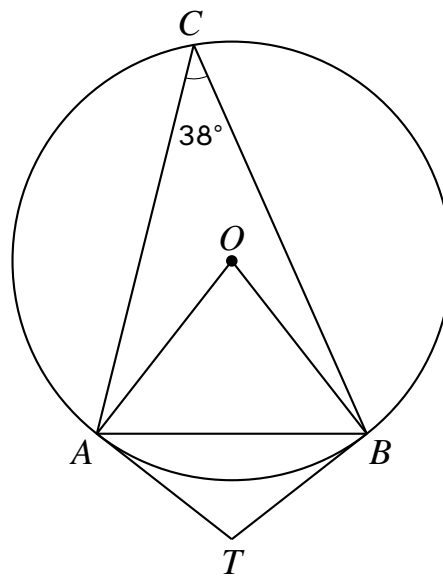


Work out the value of x and the value of y .

[4 marks]

$x =$ _____ $y =$ _____

- 8** A , B and C are points on a circle, centre O , radius 6 cm.
 TA and TB are tangents to the circle.
 Angle $ACB = 38^\circ$



Not drawn accurately

- (a) Work out the size of angle ATB .
 Give reasons for your answer.

[2 marks]

Answer _____ $^\circ$

- (b) Work out the perimeter of triangle ATB .
 Give your answer to 3 significant figures.

[4 marks]

Answer _____ cm