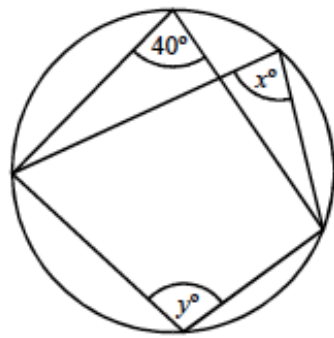


Topic 22 Circle theorems (Pre-TT) [33]

1.



Not drawn accurately

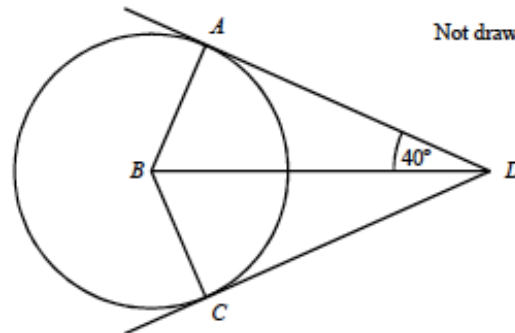
(i) Write down the value of x .

(1)

(ii) Calculate the value of y .

(1)

- (b) A and C are points on the circumference of a circle centre B .
 AD and CD are tangents.
 Angle $ADB = 40^\circ$.

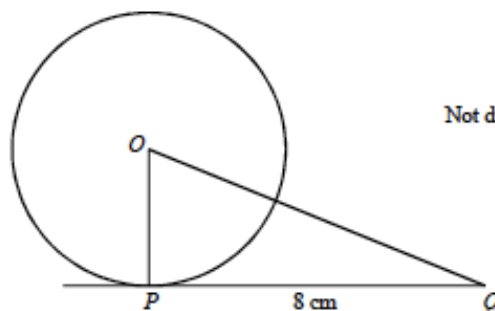


Not drawn accurately

Explain why angle ABC is 100° .

(2)

- (c) P is a point on the circumference of a circle with centre O .
 PQ is a tangent of length 8 cm.
 The area of triangle OPQ is 24 cm^2 .



Not drawn accurately

Calculate the area of the circle.
 Give your answer in terms of π .

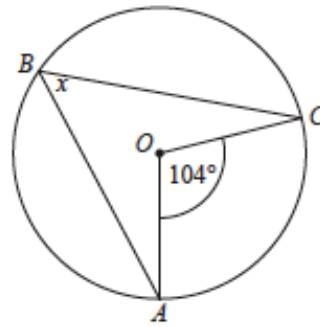
(3)

(Total 7 marks)

2.

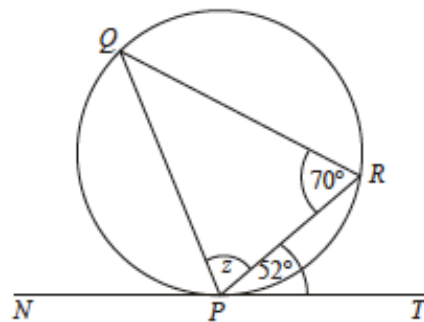
- (a) O is the centre of the circle.
 A, B and C are points on the circumference.

Write down the value of angle x .



(1)

- (b) P, Q and R are points on the circumference of the circle.
 NPT is the tangent to the circle at P .



Not drawn accurately

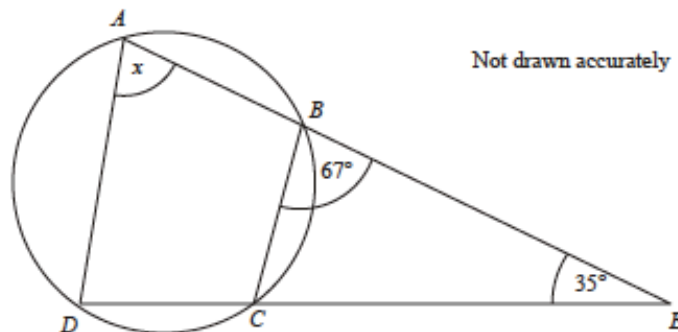
Calculate the value of z .
 Give a reason for each step of your working.

(3)

(Total 4 marks)

3.

A, B, C and D are four points on the circumference of a circle.
 The lines AB and DC are produced to meet at E .
 Angle $CBE = 67^\circ$ and angle $BEC = 35^\circ$



Not drawn accurately

- (a) What is the special name for the quadrilateral $ABCD$?

(1)

- (b) Work out the value of x .
 You **must** show your working.

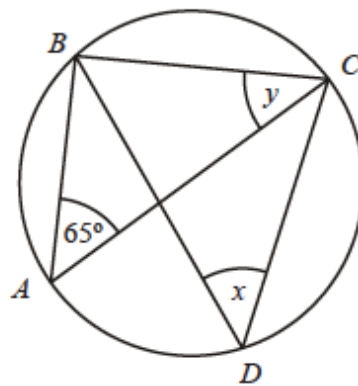
(3)

(Total 4 marks)

4.

A, B, C and D are points on the circumference of a circle.
 AC is a diameter of the circle.
 Angle $BAC = 65^\circ$

Not drawn accurately



- (a) Write down the value of x .
 (b) Calculate the value of y .

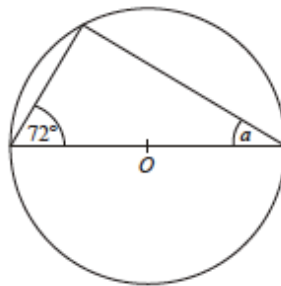
(1)

(1)

(Total 2 marks)

5.

- (a) O is the centre of the circle.

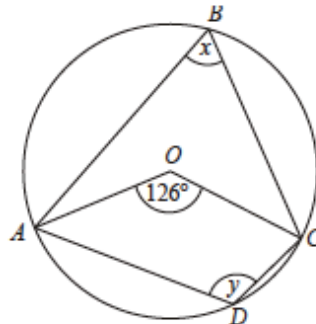


Not drawn accurately

Calculate the value of a .

(2)

- (b) O is the centre of the circle.
 A, B, C and D are points on the circumference.
 Angle $AOC = 126^\circ$



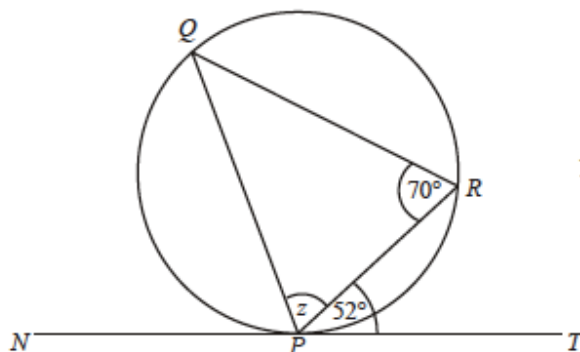
Not drawn accurately

- (i) Calculate the value of x .
 (ii) Calculate the value of y .

(1)

(1)

- (c) P, Q and R are points on the circumference of the circle.
 NPT is the tangent to the circle at P .



Not drawn accurately

Calculate the value of z .
 Give a reason for each step of your working.

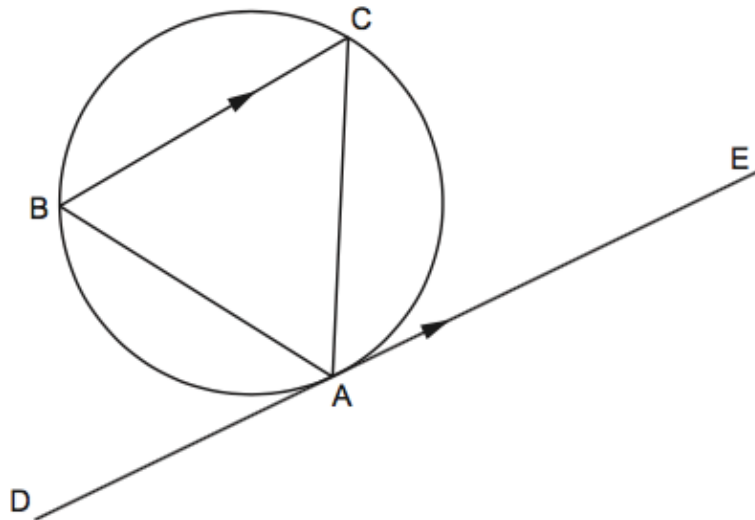
(3)

(Total 7 marks)

6.

The diagram shows points A, B and C on the circumference of a circle.
Line DAE is a tangent to the circle.
DE is parallel to BC.

Not to scale

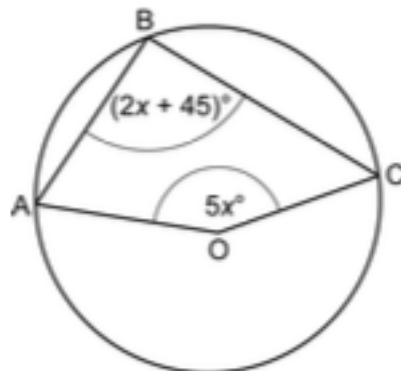


Prove that triangle ABC is an isosceles triangle.
Give the reason for each step in your proof.

[5]

7.

A, B and C lie on a circle, centre O.
In quadrilateral ABCO, angle AOC = $5x^\circ$ and angle ABC = $(2x + 45)^\circ$.



Not to scale

Find the value of x .

(Total 4 marks)