Circle Theorems
Difficulty: Hard

Question Paper 1

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Geometry
Sub-Topic	Circle Theorems
Paper	Paper 2
Difficulty	Hard
Booklet	Question Paper 1

Time allowed: **27 minutes**

Score: **/21**

Percentage: **/100**

Grade Boundaries:

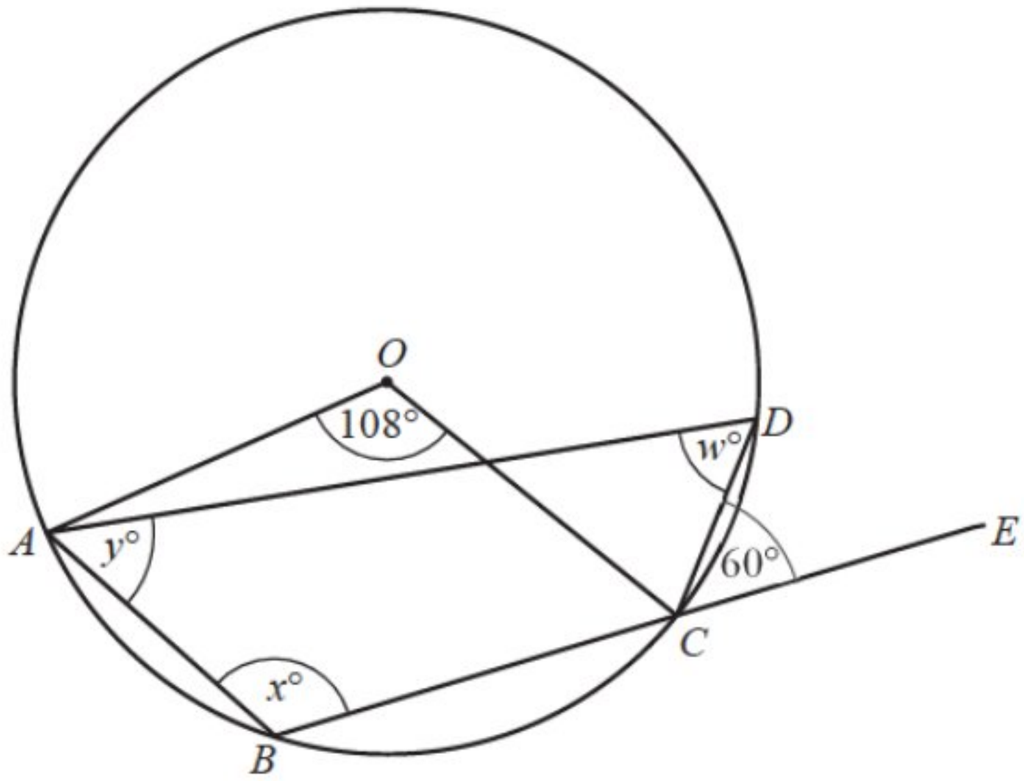
CIE IGCSE Maths (0580)

A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%

Question 1

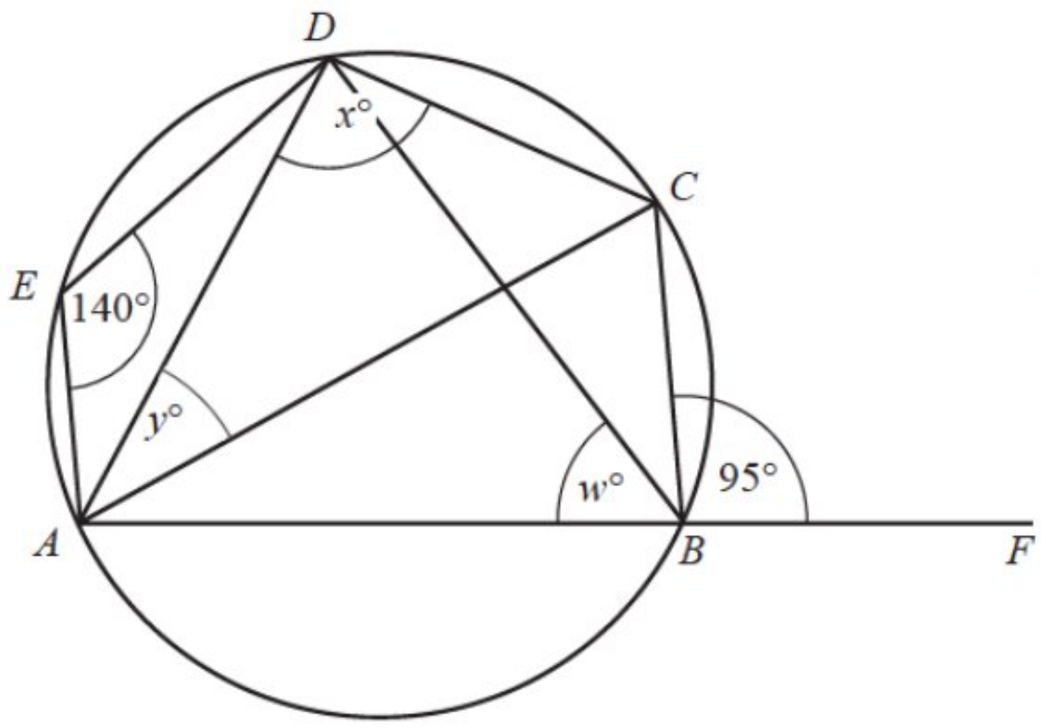


NOT TO SCALE

A, B, C and D are points on the circle, centre O.
BCE is a straight line.
Angle $AOC = 108°$ and angle $DCE = 60°$.

Calculate the values of w, x and y. [3]

Question 2



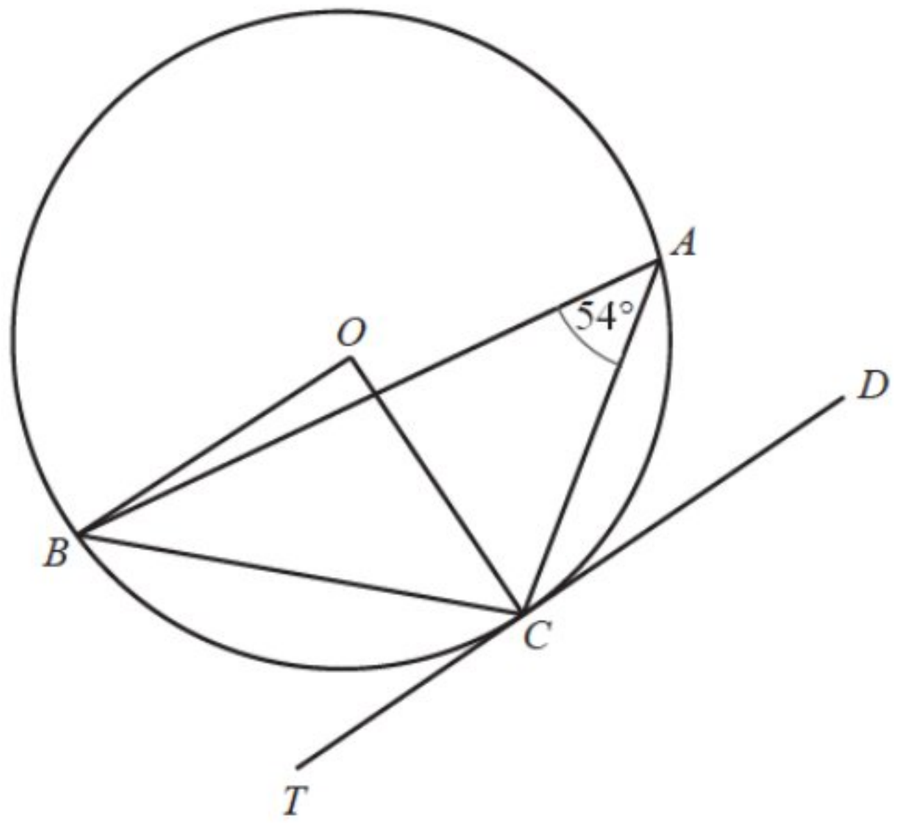
NOT TO SCALE

A, B, C, D and E lie on the circle.
AB is extended to F.
Angle $AED = 140°$ and angle $CBF = 95°$. [5]

Find the values of w, x and y.

Question 3

A, B and C are points on a circle, centre O.
TCD is a tangent to the circle.
Angle $BAC = 54°$.



NOT TO SCALE

(a) Find angle BOC, giving a reason for your answer. [2]

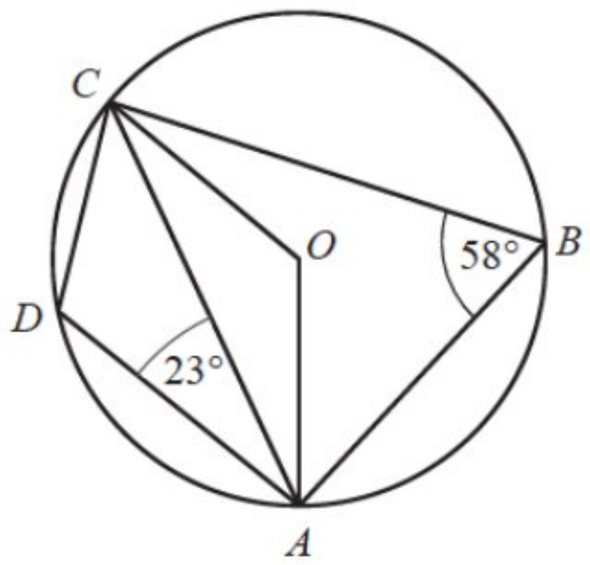
(b) When O is the origin, the position vector of point C is $\begin{pmatrix} 3 \\ -4 \end{pmatrix}$.

(i) Work out the gradient of the radius OC. [1]

(ii) D is the point $(7, k)$.

Find the value of k. [1]

Question 4



NOT TO SCALE

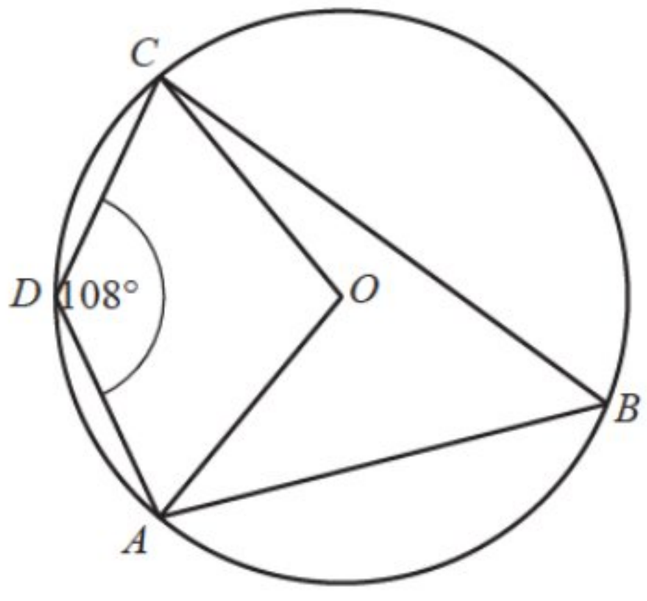
A, B, C and D lie on a circle centre O.
Angle $ABC = 58°$ and angle $CAD = 23°$.

Calculate

(a) angle OCA, [2]

(b) angle DCA. [2]

Question 5

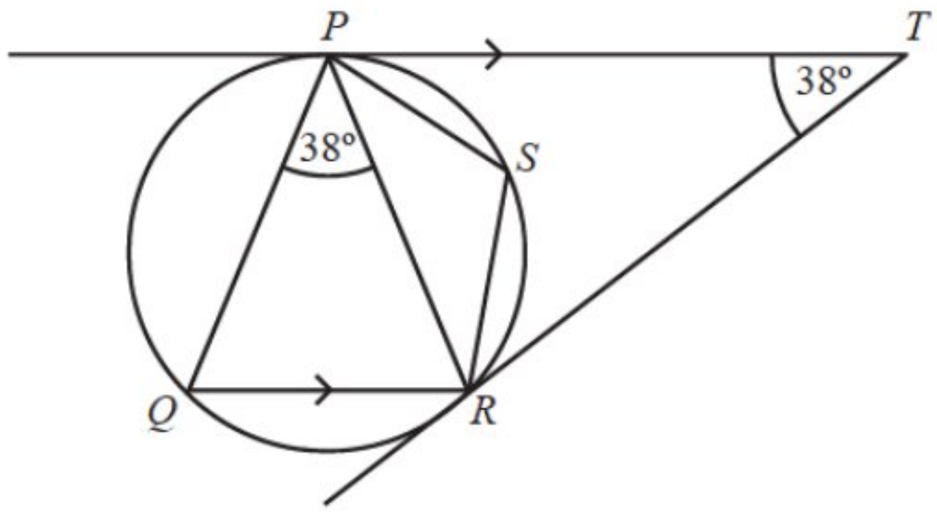


NOT TO SCALE

A, B, C and D lie on a circle centre O. Angle $ADC = 108°$.

Work out the obtuse angle AOC. [2]

Question 6



NOT TO SCALE

In the diagram PT and QR are parallel. TP and TR are tangents to the circle $PQRS$.
Angle PTR = angle RPQ = 38°.

(a) What is the special name of triangle TPR. Give a reason for your answer.

[1]

(b) Calculate

(i) angle PQR, [1]

(ii) angle PSR. [1]