

Write your name here

Surname

Other names

In the style of:

Edexcel GCSE

Centre Number

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Candidate Number

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Mathematics A

Circle Theorems

Higher Tier

Past Paper Style Questions
Arranged by Topic

Paper Reference

1MA0/1H

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- **Calculators must not be used.**



Information

- The total mark for this paper is 100
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►



1. $ABCD$ is a cyclic quadrilateral within a circle centre O .
 XY is the tangent to the circle at A .
Angle $XAB = 58^\circ$
Angle $BAD = 78^\circ$
Angle $DBC = 34^\circ$

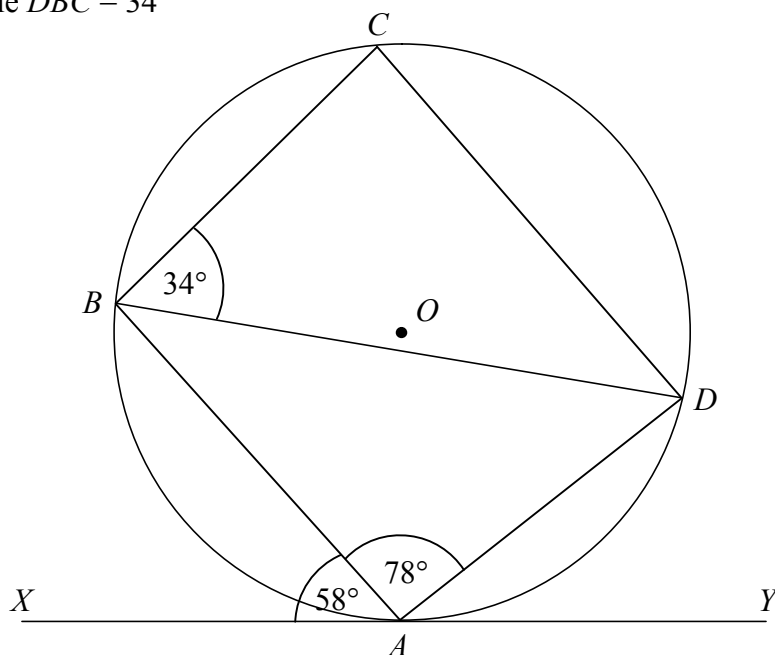


Diagram **NOT**
accurately drawn

Prove that AB is parallel to CD .

(5)



2.(a) Here is a circle with centre O .

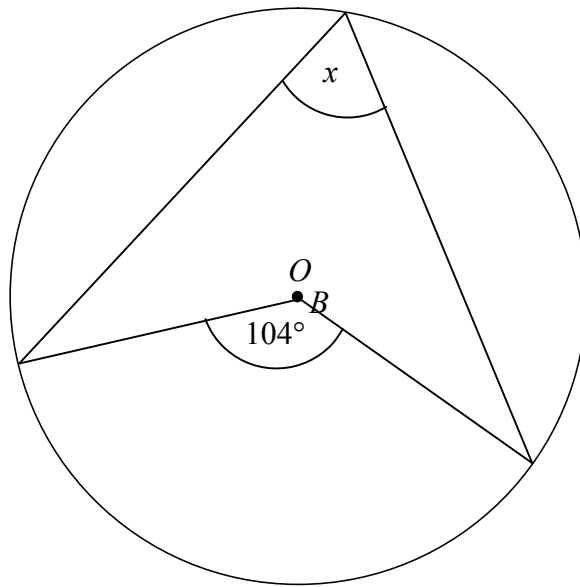


Diagram NOT accurately drawn

Write down the value of x .

..... degrees
(1)

(b) Here is a different circle.

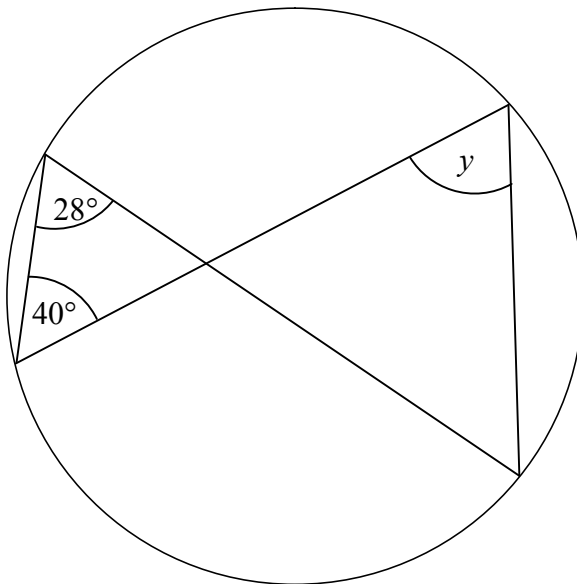


Diagram NOT accurately drawn

Write down the value of y .

..... degrees
(1)



3.

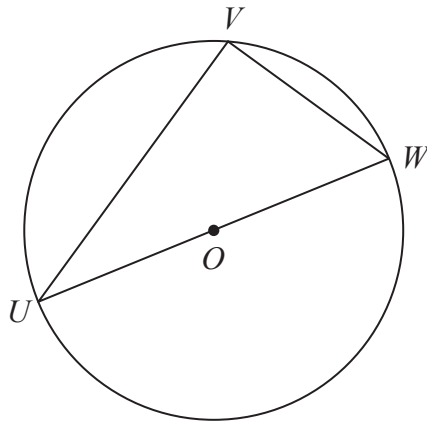


Diagram **NOT** accurately drawn

U , V and W are points on the circumference of a circle, centre O . UW is a diameter of the circle.

(a) (i) Write down the size of angle UVW .

°

.....

(ii) Give a reason for your answer.

.....

.....

(2)

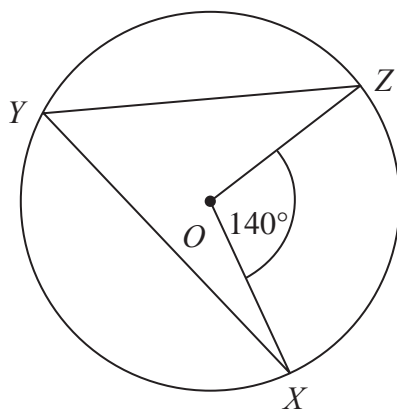


Diagram **NOT** accurately drawn

X , Y and Z are points on the circumference of a circle, centre O . Angle $XOZ = 140^\circ$.

(b) (i) Work out the size of angle XYZ .

°

.....

(ii) Give a reason for your answer.

.....

.....

(2)



*4.

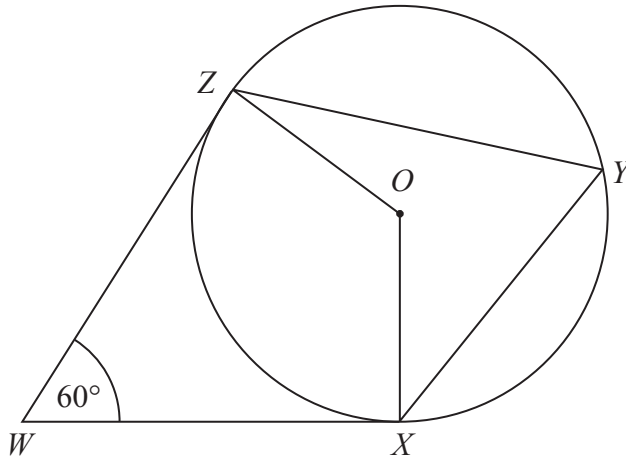


Diagram **NOT**
accurately drawn

X , Y and Z are points on the circumference of a circle, centre O .
 WX and WZ are tangents to the circle.

Angle $ZWX = 60^\circ$

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

(Total 4 marks)



5.

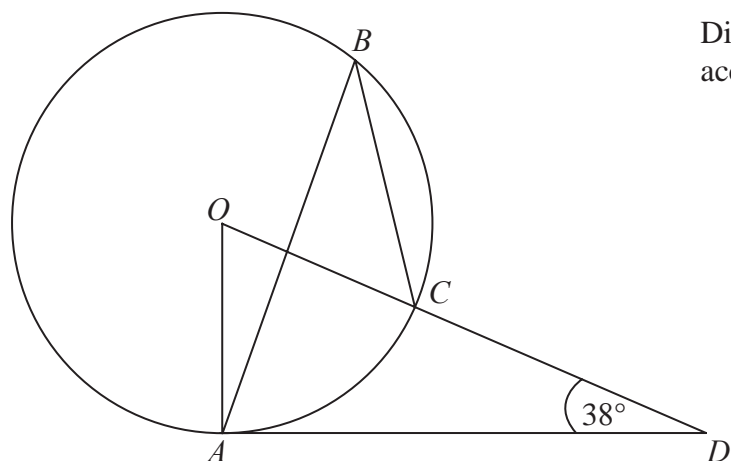


Diagram **NOT**
accurately drawn

The diagram shows a circle centre O .
 A , B and C are points on the circumference.

DCO is a straight line.
 DA is a tangent to the circle.

Angle $ADO = 38^\circ$

(a) Work out the size of angle AOD .

.....
(2)

(b) (i) Work out the size of angle ABC .

.....

(ii) Give a reason for your answer.

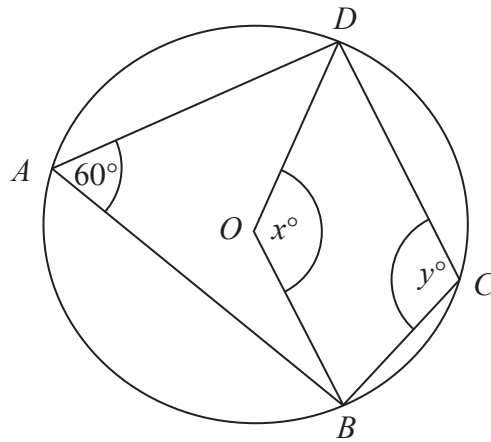
.....
(3)

(Total 5 marks)



6.

Diagram **NOT**
accurately drawn



In the diagram, A , B , C and D are points on the circumference of a circle, centre O .
Angle $BAD = 60^\circ$.

Angle $BOD = x^\circ$.

Angle $BCD = y^\circ$.

(a) (i) Work out the value of x .

$x = \dots\dots\dots$

(ii) Give a reason for your answer.

.....
.....

(2)

(b) (i) Work out the value of y .

$y = \dots\dots\dots$

(ii) Give a reason for your answer.

.....
.....

(2)

(Total 4 marks)



7.

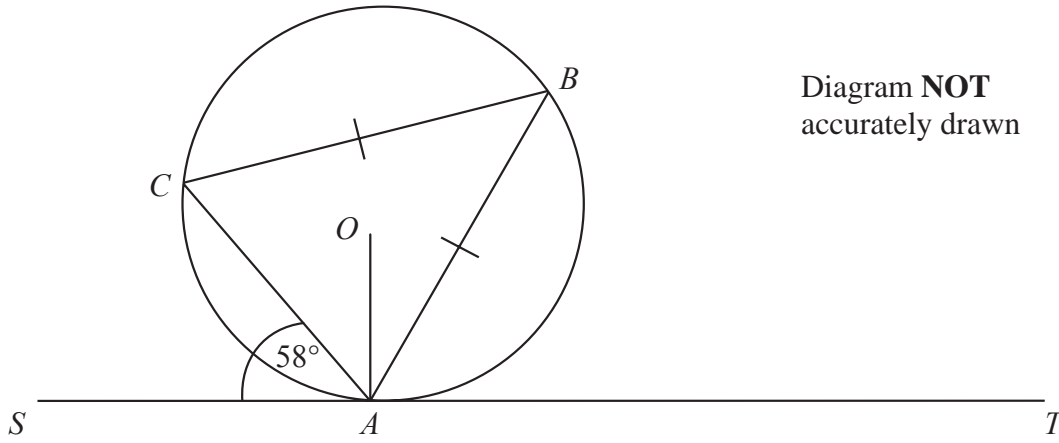


Diagram **NOT**
accurately drawn

A , B and C are points on the circumference of a circle, centre O .
The line SAT is the tangent at A to the circle.

$CB = AB$.
Angle $ATP = 60^\circ$.

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

.....
o

(Total 5 marks)



8.

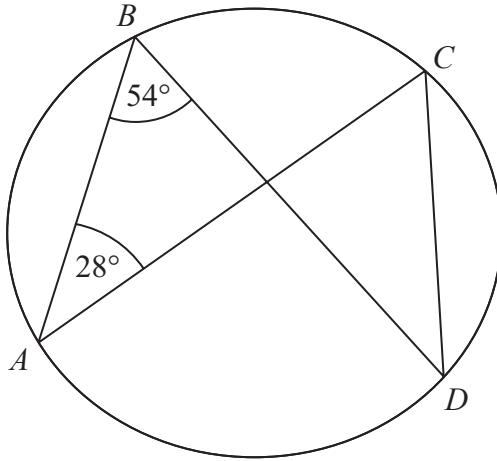


Diagram **NOT** accurately drawn

A, B, C and *D* are points on the circumference of a circle.
Angle *ABD* = 54° .
Angle *BAC* = 28° .

(i) Find the size of angle *ACD*.

.....^o

(ii) Give a reason for your answer.

.....
.....

(Total 2 marks)



9.

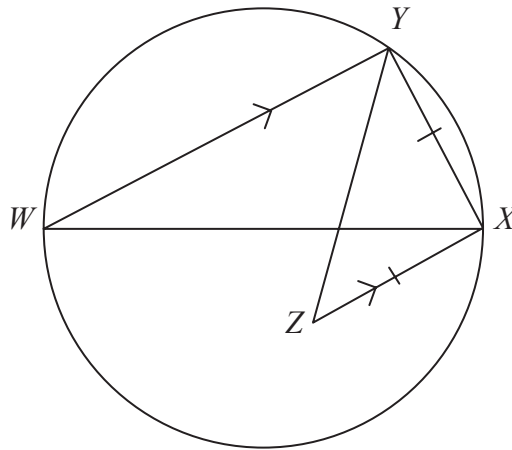


Diagram **NOT**
accurately drawn

WX is a diameter of a circle.

Y is a point on the circle.

Z is the point inside the circle such that $ZX = XY$ and XZ is parallel to YW .

Find the size of angle XZY .

You must give reasons for your answer.

.....^o Q9
(Total 4 marks)



10. $ABCD$ is a cyclic quadrilateral.
 AE is a tangent at A .
 CDE is a straight line.
Angle $CAD = 32^\circ$
Angle $ABD = 40^\circ$

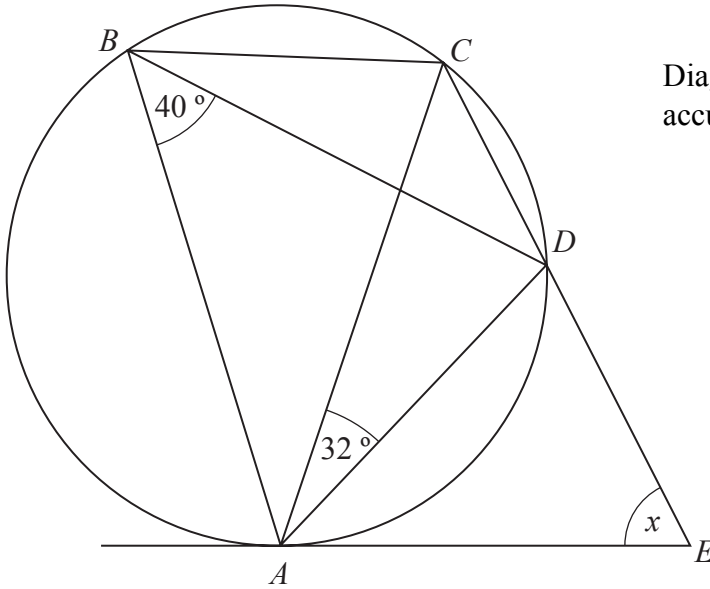


Diagram **NOT**
accurately drawn

Work out the size of angle AED , marked x , on the diagram.
You **must** show your working.
Give reasons for any angles you work out.

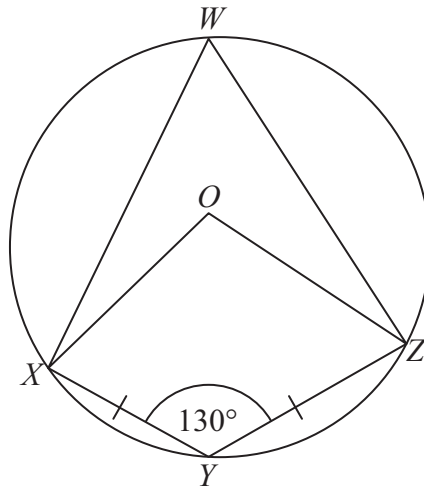
..... degrees

(Total 5 marks)



11.

Diagram **NOT**
accurately drawn



W, X, Y and Z are points on a circle, centre O .
 $XY = YZ$.
Angle $XYZ = 130^\circ$.

- (a) Write down the size of angle XWZ .
Give a reason for your answer.

.....
(2)

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

.....
(4)

(Total 6 marks)

