Write your name here

Surname	Other names

In the style of:

Edexcel GCSE

Centre Number	Candidate Number

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°
Angle *BAD* = 78°
Angle *DBC* = 34°

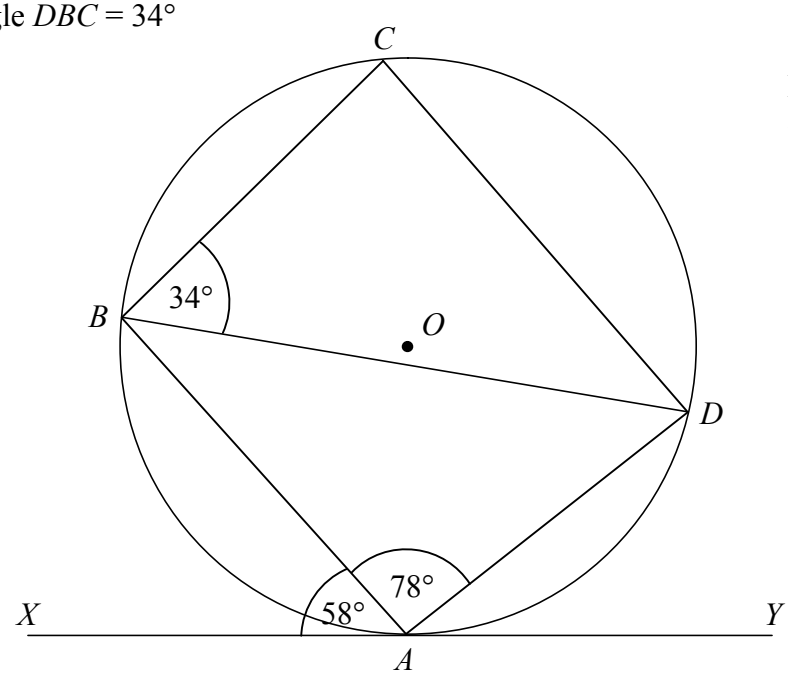

Diagram **NOT** accurately drawn

Prove that *AB* is parallel to *CD*.

(5)

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

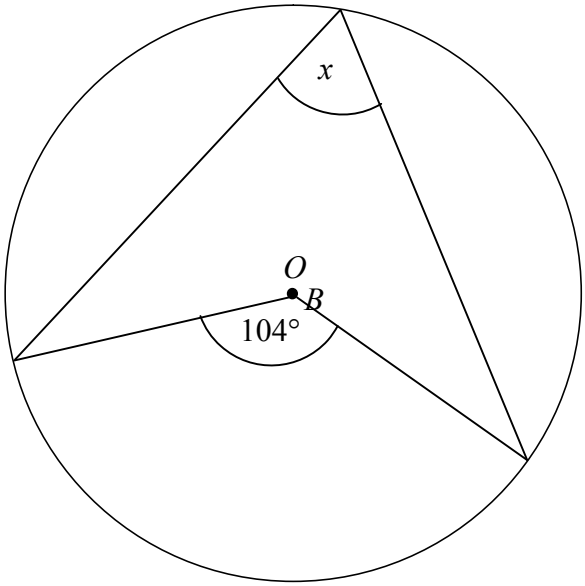

Diagram **NOT** accurately drawn

Write down the value of x.

..... degrees

(1)

(b) Here is a different circle.

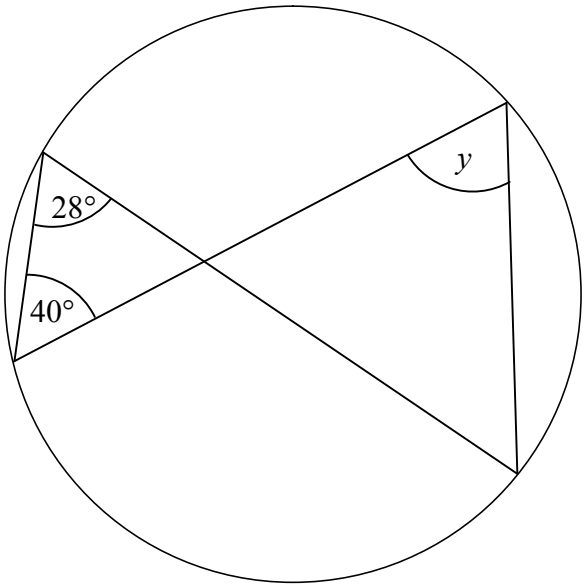

Diagram **NOT** accurately drawn

Write down the value of y.

..... degrees

(1)

3.

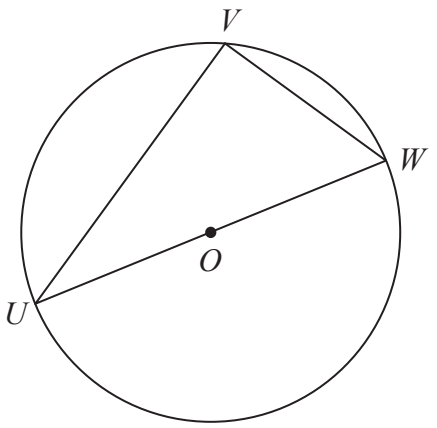

Diagram **NOT** accurately drawn

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)

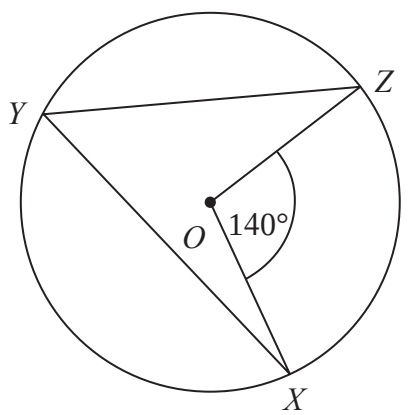

Diagram **NOT** accurately drawn

X, *Y* and *Z* are points on the circumference of a circle, centre *O*.
Angle *XOZ* = 140°.

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

°

.....

(ii) Give a reason for your answer.

.....

.....

(2)

(Total 4 marks)

***4.**

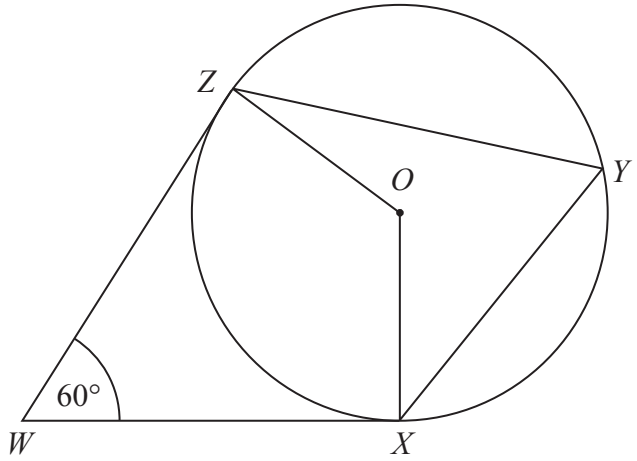

Diagram **NOT** accurately drawn

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°

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

(Total 4 marks)

5.

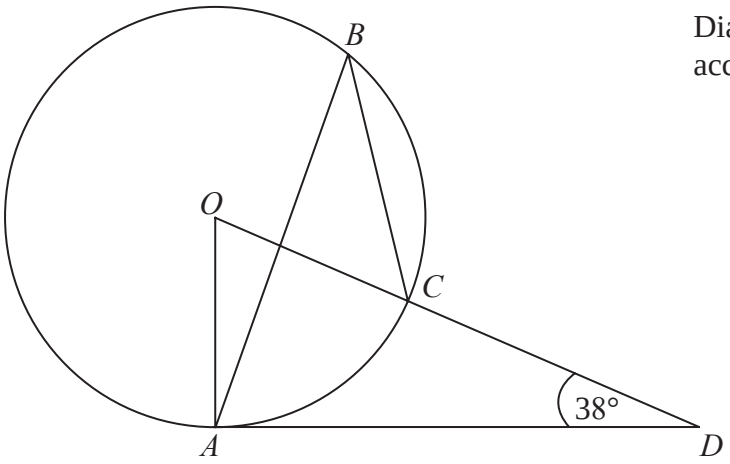

Diagram **NOT** accurately drawn

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 $ADO = 38°$

(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.

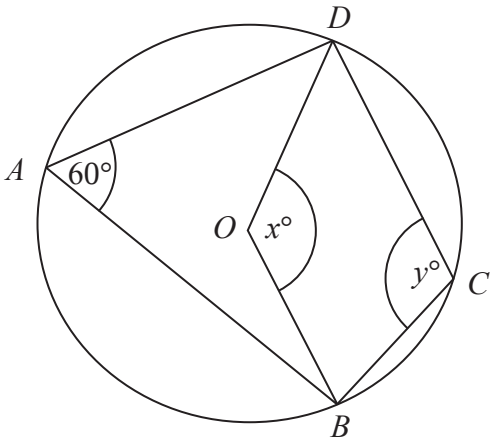

Diagram **NOT** accurately drawn

In the diagram, A, B, C and D are points on the circumference of a circle, centre O.
Angle $BAD = 60°$.
Angle $BOD = x°$.
Angle $BCD = y°$.

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

$x =$ .....

(ii) Give a reason for your answer.

.....

.....

(2)

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

$y =$ .....

(ii) Give a reason for your answer.

.....

.....

(2)

(Total 4 marks)

7.

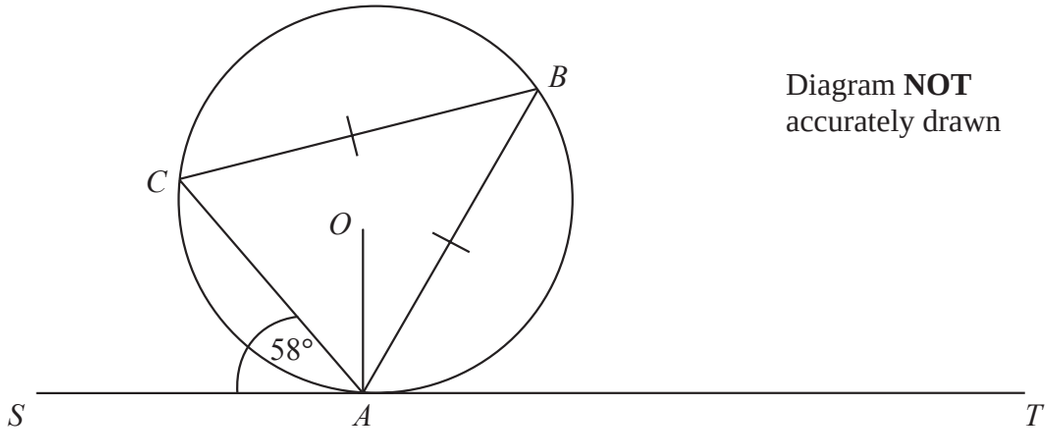

Diagram **NOT** accurately drawn

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 *CAS* = 58°.

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

..... °

(Total 5 marks)

8.

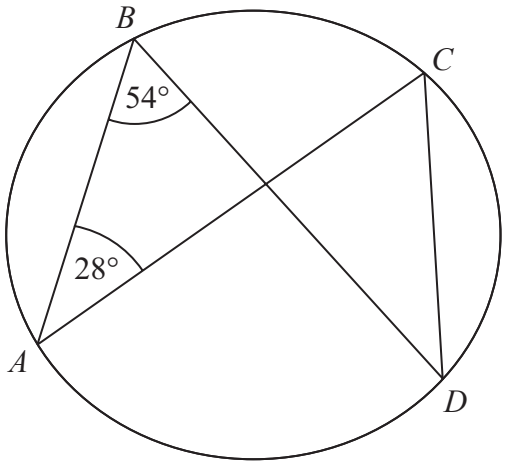

Diagram **NOT** accurately drawn

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*.

..... °

(ii) Give a reason for your answer.

.....

.....

(Total 2 marks)

9.

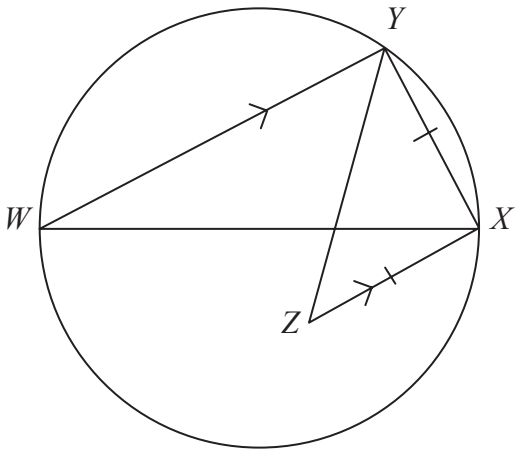

Diagram **NOT** accurately drawn

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.

° **Q9**

.....

(Total 4 marks)

10. *ABCD* is a cyclic quadrilateral.
AE is a tangent at *A*.
CDE is a straight line.
Angle *CAD* = 32°
Angle *ABD* = 40°

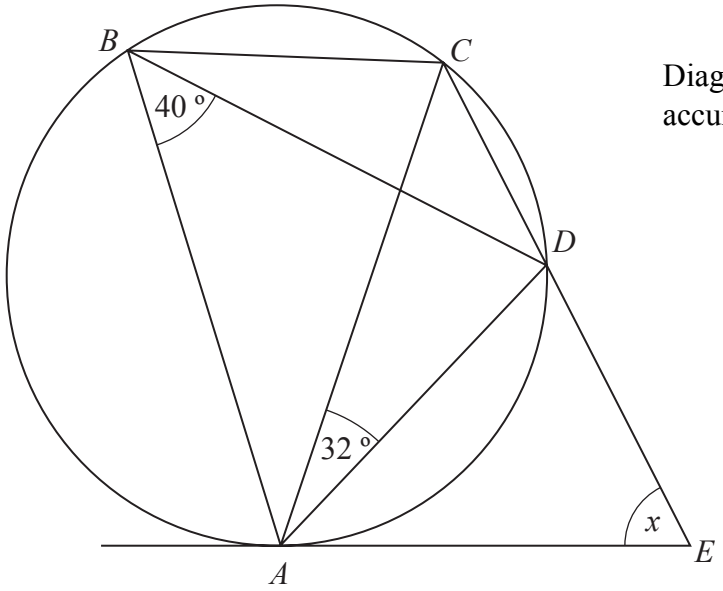

Diagram **NOT** accurately drawn

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.

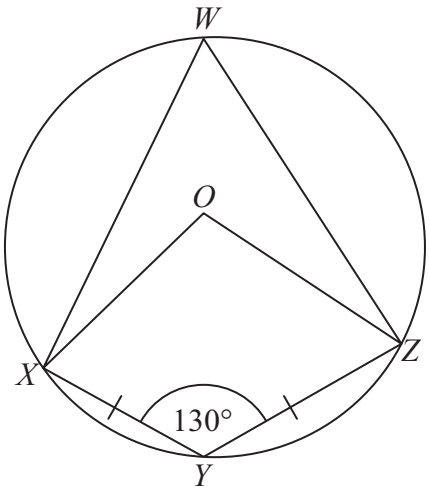

Diagram **NOT** accurately drawn

W, *X*, *Y* and *Z* are points on a circle, centre *O*.
XY = *YZ*.
Angle *XYZ* = 130°.

(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)