

1MA1 Higher themed papers: Circle Theorems A

Write your name here	
Surname	Other names
Centre Number	Candidate Number
<input type="text"/>	<input type="text"/>
Pearson Edexcel Level 1/Level 2 GCSE (9–1)	
Mathematics	
Circle Theorems A	
	Paper Reference 1MA1
You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.	Total Marks
	<input type="text"/>

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.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

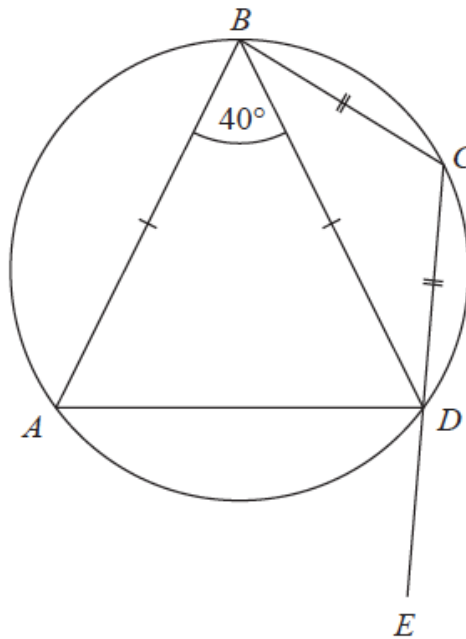
- The total mark for this paper is **28**. There are **7** questions.
- Questions have been arranged in an ascending order of mean difficulty, as found by all students in the June 2017–November 2019 examinations.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

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.

1MA1 Higher themed papers: Circle Theorems A

- 1 The points A, B, C and D lie on a circle.
 CDE is a straight line.



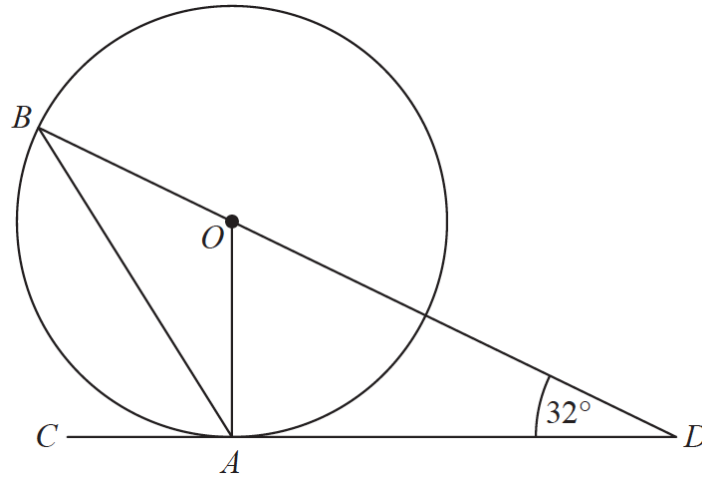
$BA = BD$
 $CB = CD$
Angle $ABD = 40^\circ$

Work out the size of angle ADE .
You must give a reason for each stage of your working.

(Total for Question 1 is 5 marks)

1MA1 Higher themed papers: Circle Theorems A

2



A and B are points on a circle with centre O .

CAD is the tangent to the circle at A .

BOD is a straight line.

Angle $ODA = 32^\circ$

Work out the size of angle CAB .

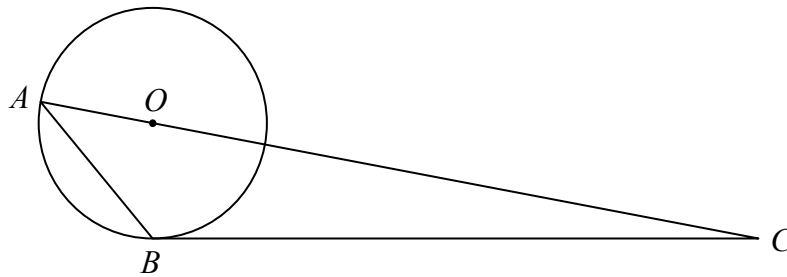
You must show all your working.

.....^o
(Total for Question 2 is 3 marks)

1MA1 Higher themed papers: Circle Theorems A



3



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

BC is a tangent to the circle.

AOC is a straight line.

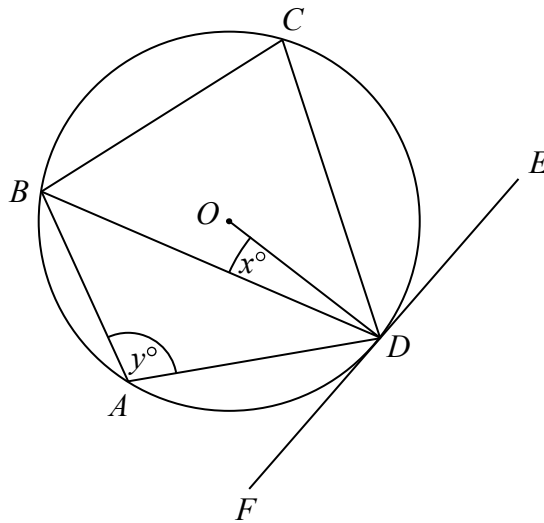
Angle $ABO = x^\circ$.

Find the size of angle ACB , in terms of x .

Give your answer in its simplest form.

Give reasons for each stage of your working.

(Total for Question 3 is 5 marks)



A, B, C and D are points on the circumference of a circle, centre O .
 FDE is a tangent to the circle.

(a) Show that $y - x = 90$

You must give a reason for each stage of your working.

(3)

Dylan was asked to give some possible values for x and y .

He said,

“ y could be 200 and x could be 110, because $200 - 110 = 90$ ”

(b) Is Dylan correct?

You must give a reason for your answer.

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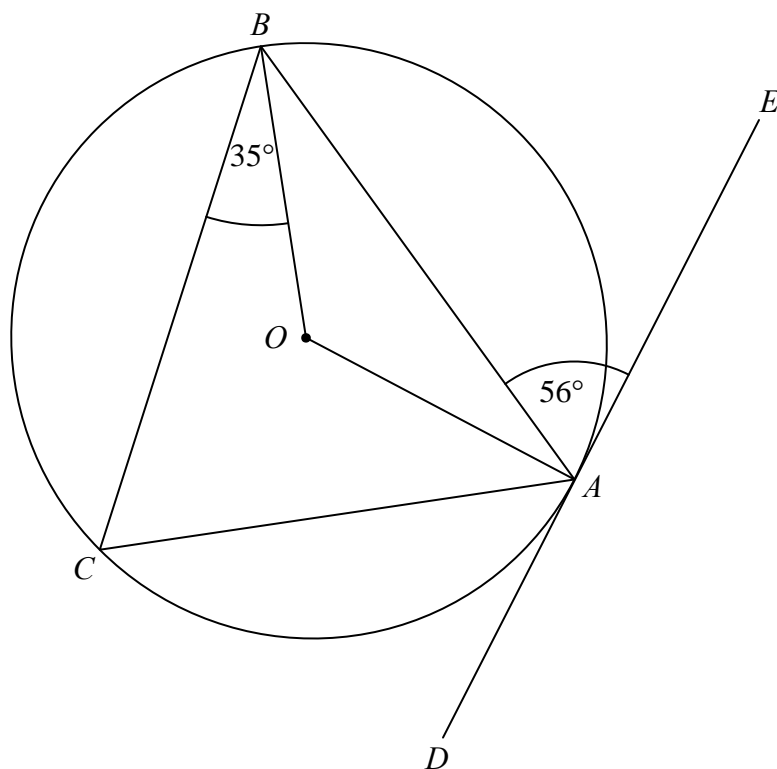
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(1)

(Total for Question 4 is 4 marks)

1MA1 Higher themed papers: Circle Theorems A

 5



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

Angle $BAE = 56^\circ$
Angle $CBO = 35^\circ$

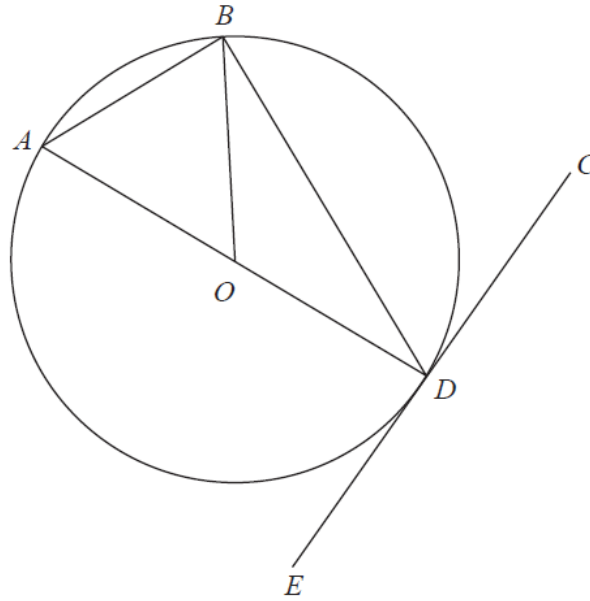
Work out the size of angle CAO .
You must show all your working.

.....^o
(Total for Question 5 is 3 marks)

1MA1 Higher themed papers: Circle Theorems A



6



A , B and D are points on the circumference of a circle centre O .

EDC is a tangent to the circle.

Angle $BDC = 57^\circ$

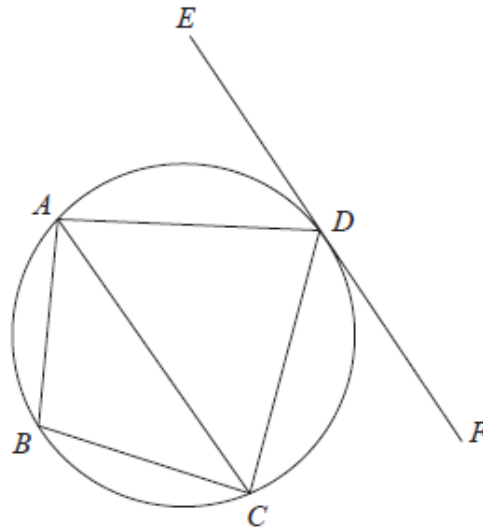
Find the size of angle AOB .

You must give a reason for each stage of your working.

(Total for Question 6 is 4 marks)

1MA1 Higher themed papers: Circle Theorems A

7



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

Angle $ADE = 54^\circ$
Angle $ABC = 114^\circ$

Work out the size of angle CAD .
You must give a reason for each stage of your working.

.....^o
(Total for Question 7 is 4 marks)

TOTAL MARKS FOR PAPER: 28