Surname	
Other Names	
Candidate Signature	

In the style of

AQA

General Certificate of Secondary Education
Higher Tier

Mathematics

43602H

Past Paper Type Questions by Topic

Circle Theorems

H

For this paper you must have:
- a calculator
- mathematical instruments.

Time allowed
- 1 hour

Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

Information
- The marks for questions are shown in brackets.
- The quality of your written communication is specifically assessed

  in some questions . These questions are indicated with an asterisk (*)
- You may ask for more answer paper and graph paper. These must be tagged securely to this answer booklet.

Advice
- In all calculations, show clearly how you work out your answer.

1 (a) *WXYZ* are points on the circumference of a circle centre *O*.
Angle *ZWY* = 37°
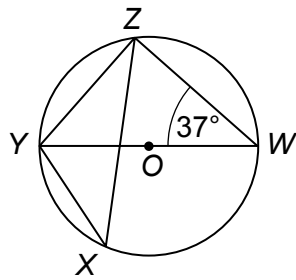
Not drawn accurately

Write down the value of

1 (a) (i) Angle *ZXY*

Answer .... degrees   *(1 mark)*

1 (a) (ii) Angle *WYZ*

Answer .... degrees   *(1 mark)*

1 (b)   In the diagram below *RST* and *RUV* are tangents to the circle centre *O*, radius 6 cm.

The distance *RS* = 14 cm.
W is the point where *RO* meets the circumference.
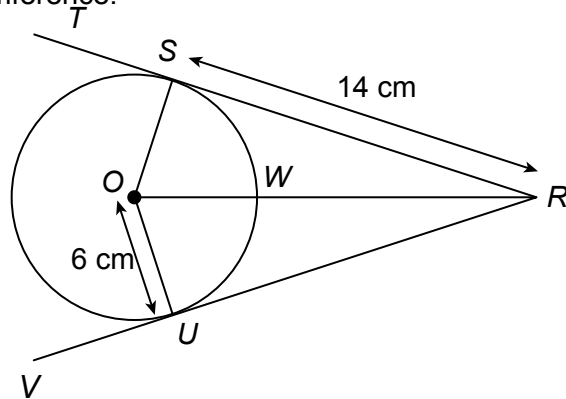
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Work out the distance *RW*.

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Answer .... cm   *(4 marks)*

2. *O* is the centre of the circle. Angle $ACD = 134°$

Not drawn accurately
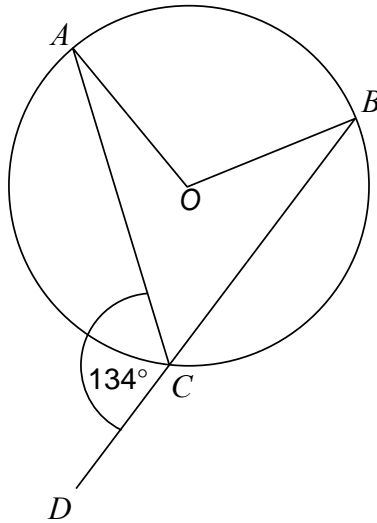
Work out the size of the reflex angle

AOB. You **must** show your working.

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Answer .... degrees *(3 marks)*

3 *WXYZ* is a cyclic quadrilateral within a circle centre *O*.

  AB is the tangent to the circle at *W*.

  YZ is parallel to *XW*.

  Angle *XWZ* = 75°

  Angle *YXZ* = 38°

Y

Not drawn
accurately

X 38°

O•

Z

75°

A   B
W

3 (a) Give a reason why angle *XYZ* = 105°

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                             (1 mark)

3 (b) Work out the value of angle *XWA*

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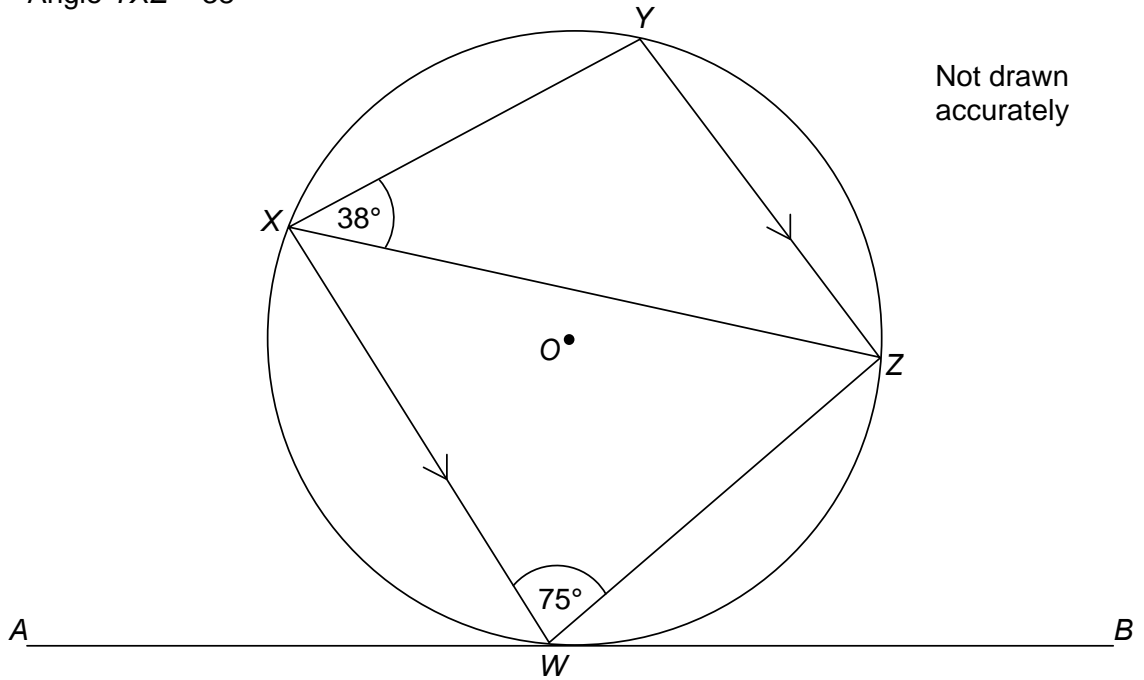 ....

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      Answer .... degrees *(3 marks)*

4 (a)   Here is a circle with centre *O*.
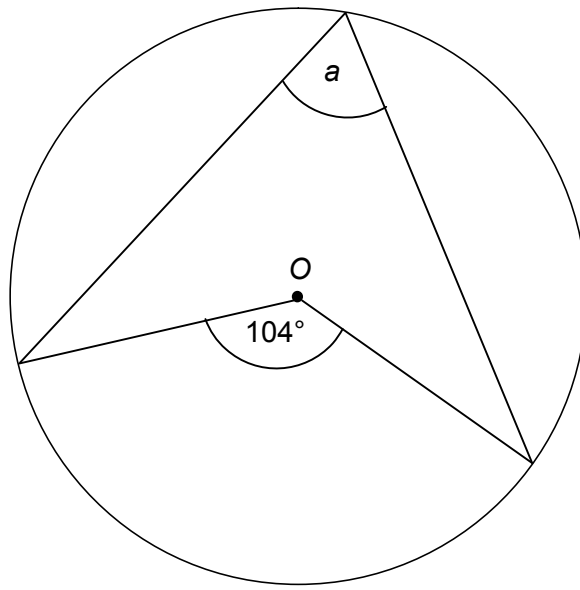
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accurately

Write down the value of *a*.

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Answer .... degrees *(1 mark)*

4 (b) Here is a different circle.
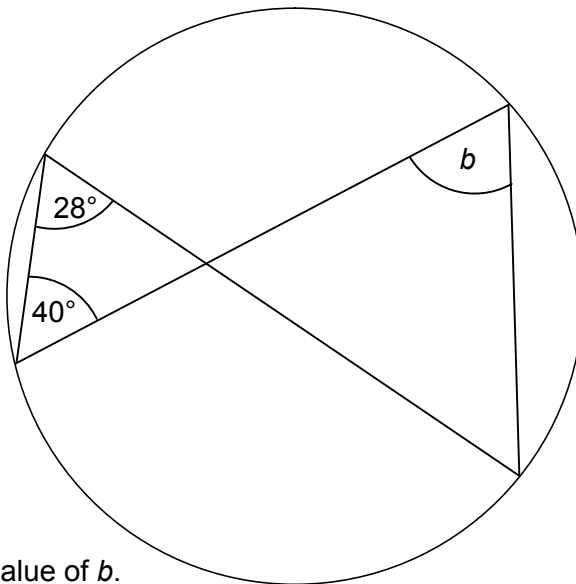
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accurately

Write down the value of *b*.

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Answer .... degrees *(1 mark)*

5 *WXYZ* is a cyclic quadrilateral within a circle centre *O*.
AB is the tangent to the circle at *W*.
Angle *AWX* = 58°
Angle *XWZ* = 78°
Angle *ZXY* = 34°
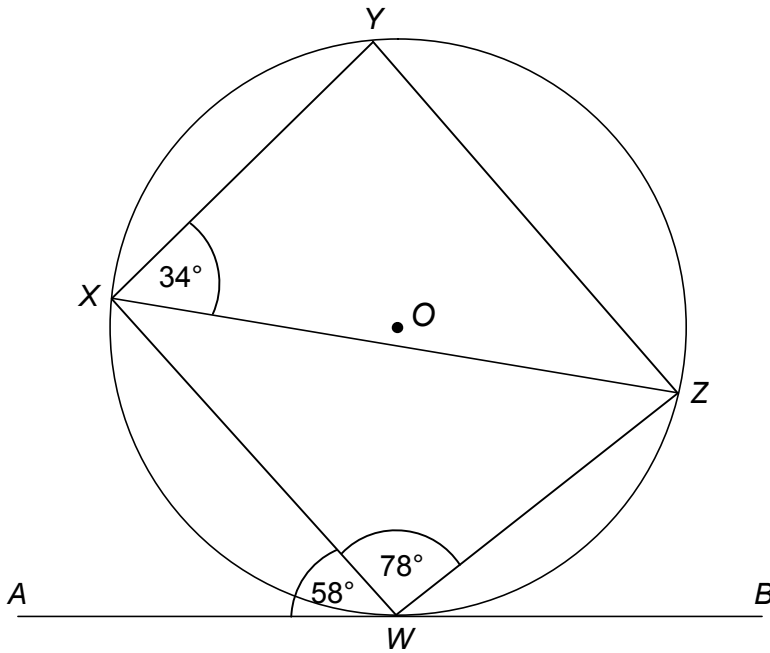
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Prove that XW is parallel to *YZ*.

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(5 marks)

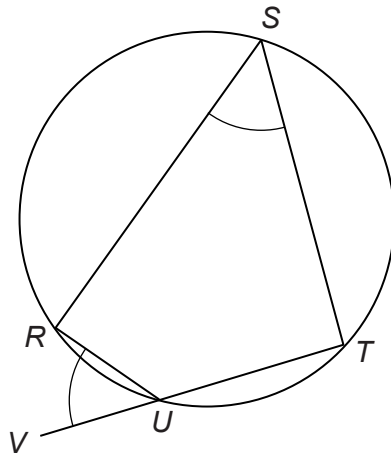**6** *RSTU* are points on the circumference of a circle.

The line *TU* is extended to *V*.

Not drawn accurately

Prove that ∠*RST* = ∠*RUV*

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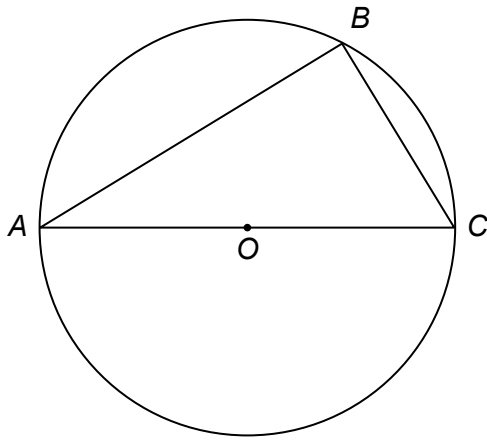
(3 marks)

7 (a)   *A*, *B* and *C* are points on the circumference of a circle, centre *O*.
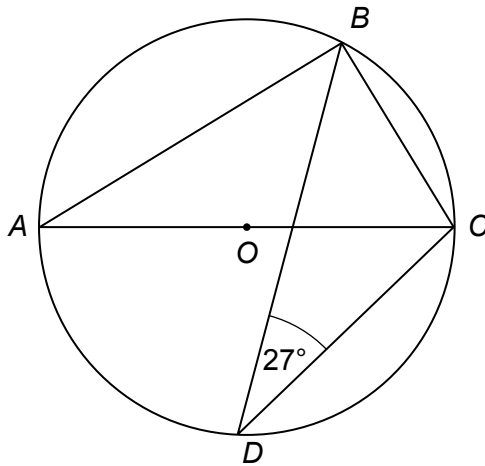AC is a diameter of the circle.

Not drawn accurately

Write down the size of angle *ABC*.

Answer .... degrees   *(1 mark)*

7 (b)   *D* is also a point on the circumference of the circle in part (a).
Angle *BDC* = 27°

Not drawn accurately

7 (b)   (i)   Write down the size of angle *CAB*.

Answer .... degrees   *(1 mark)*

7 (b)   (ii)   Work out the size of angle *ACB*.

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Answer .... degrees   *(1 mark)*

7 (c) *D* is another point on the circumference of the circle in part (a).
BD is a diameter of the circle.
Angle *ACD* = 38°
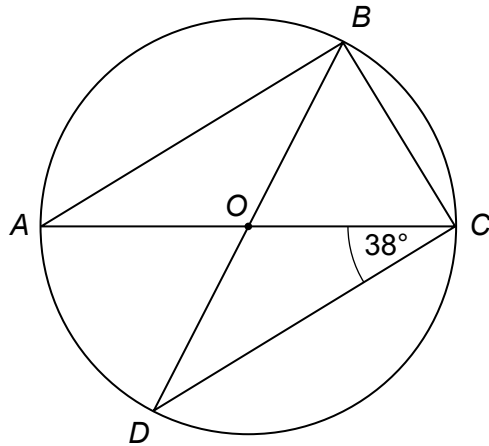
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Work out the size of angle *DBC*.

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Answer .... degrees   *(1 mark)*

8 In the diagram, *RSTU* is a cyclic quadrilateral and *XRY* is a tangent to the circle at *R*.

Angle *UTS* = 105° and angle *SRY* = 63°.

Not drawn accurately

8 (a) Work out the size of angle *URS*.
Give a reason for your answer.

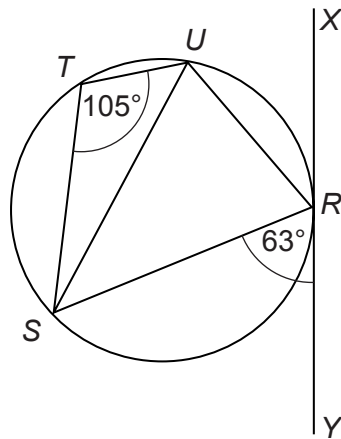..

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Answer .... degrees   *(1 mark)*

Reason ....   *(1 mark)*

8 (b) Work out the size of angle *RSU*.
You **must** show your working.

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Answer .... degrees   *(2 marks)*

9 The circle, with centre P, has a radius of 5 cm.
The circle, with centre Q, has a radius of 3 cm.
The circles touch externally.
The circles have a common tangent CD.
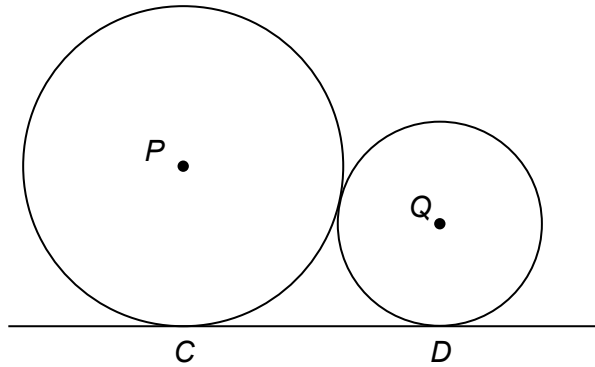
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accurately

9 (a) Explain why $CDQP$ is a trapezium.

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(2 marks)

9 (b) Show that CD = 7.75 cm to 3 significant figures.

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(3 marks)

There are no questions printed on this page

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ANSWER IN THE SPACES PROVIDED