

CIRCLE THEOREMS (FOUNDATION)



GRADE 5

Examination Practice Questions

You should have:

A ruler, protractor, compasses, a pen, pencil, eraser, calculator.
For some questions, you may need tracing paper.

Instructions

- Use **black** ink or ball-point pen.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**

Information

- The marks for each question are shown in brackets.
- Use the number of marks for each question as a guide as to how much time to spend on each question. As a rough guide, you can multiply the number of marks by 1.2 to see how many minutes you should spend on a question.
- Questions been carefully compiled from or modelled on a variety of past papers and will generally get more challenging as the document progresses. Some of the later questions will go beyond the core grade level for this topic.

Advice

- Read each question carefully before you start to answer it.
- Don't forget to have fun.
- Check your answers at the end.

Q1.

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L , M and P are points on a circle, centre O

Angle $LMP = 48^\circ$

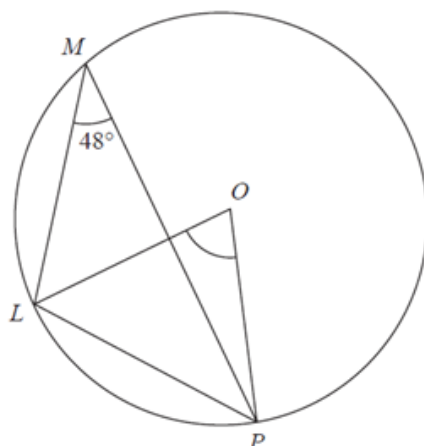


Diagram **NOT**
accurately drawn

Write down the size of angle LOP

.....

(1 mark)

Q2.

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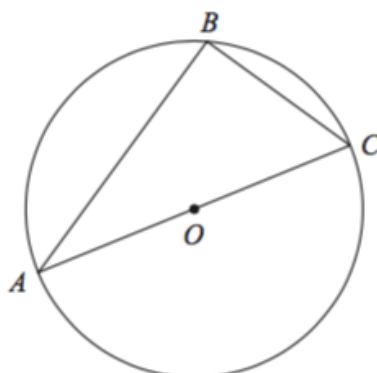


Diagram **NOT**
accurately drawn

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

Write down the size of angle ABC .

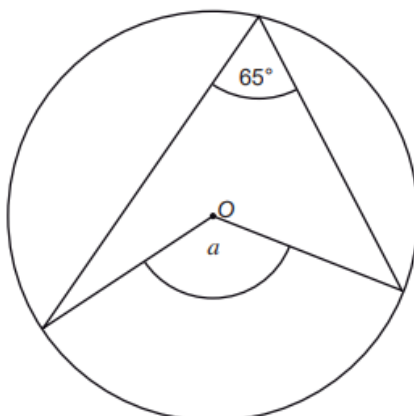
.....

(1 mark)

Q3.

AtoZrevision.com

O is the centre of the circle.



Not drawn
accurately

What is the size of angle a ?

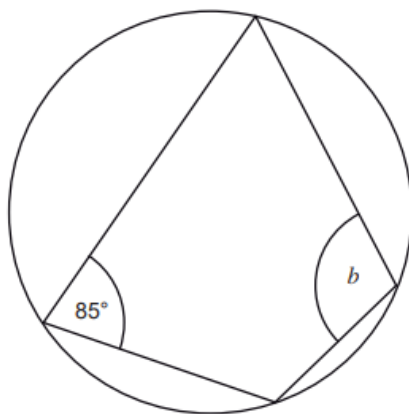
.....

(1 mark)

Q4.

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Work out the size of angle b .



Not drawn
accurately

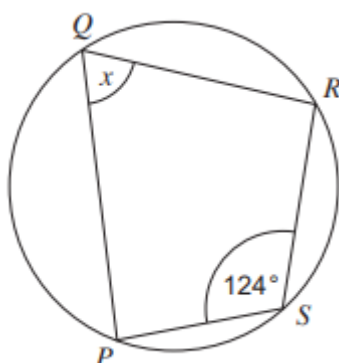
.....

(1 mark)

Q5.

AtoZrevision.com

P , Q , R and S are points on the circumference of the circle.



Not drawn
accurately

Work out the size of angle x .

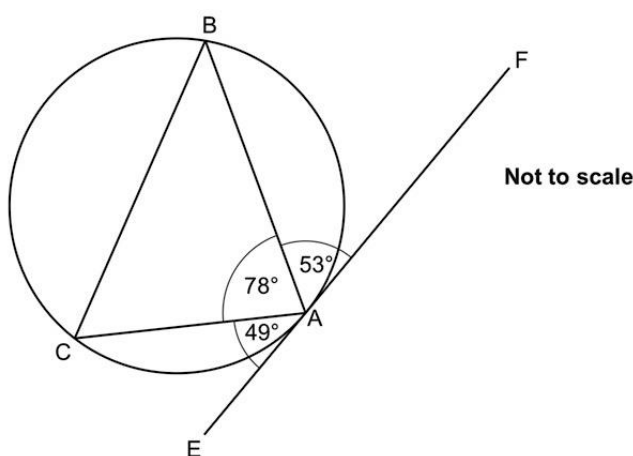
.....
(1 mark)

Q6.

AtoZrevision.com

Points A , B and C lie on the circumference of a circle.

EAF is a tangent to the circle.



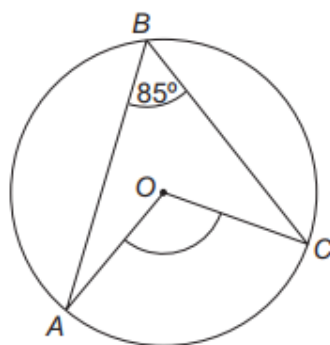
Not to scale

Write down the value of angle BCA .

.....
(1 mark)

Q7.

The diagram shows a circle, centre O .



Not drawn
accurately

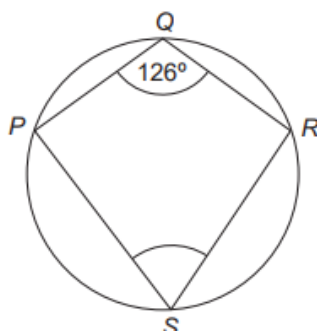
Work out the size of angle AOC .

.....

(1 mark)

Q8.

P , Q , R and S are points on the circumference of a circle.



Not drawn
accurately

Work out the size of angle PSR .

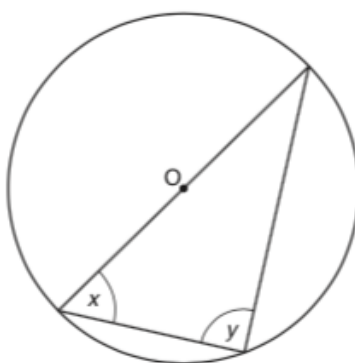
.....

(1 mark)

Q9.

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This is a triangle in a circle with centre O.



What type of angle is y?

.....

(1 mark)

Q10.

AtoZrevision.com

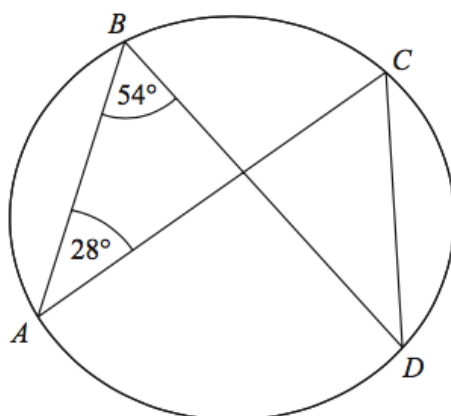


Diagram **NOT**
accurately drawn

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

Angle $ABD = 54^\circ$.

Angle $BAC = 28^\circ$.

Find the size of angle ACD.

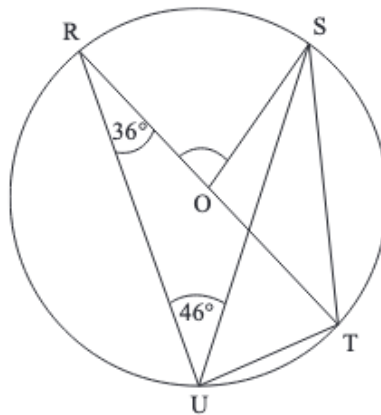
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(1 mark)

Q11.

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R, S, T and U are points on the circumference of a circle, centre O.
The angle RUS is 46° and the angle URT is 36°



Calculate the angle RTS.

.....

(1 mark)

Q12.

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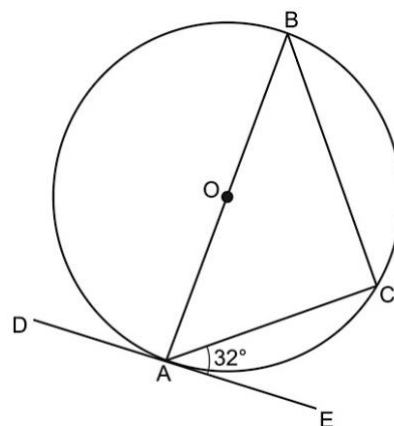
The diagram shows a circle, centre O.

Points A, B and C lie on the circumference of the circle.

Line AOB is a diameter.

Line DAE is a tangent to the circle.

Angle CAE = 32° .



Not to scale

Explain why angle ACB is a right angle.

.....

(1 mark)

Q13.

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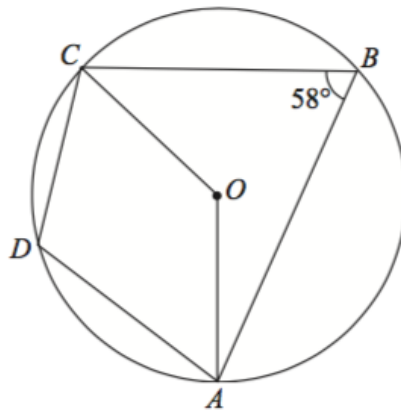


Diagram **NOT**
accurately drawn

A, B, C and D are points on a circle, centre O.
Angle $ABC = 58^\circ$.

Calculate the size of angle ADC.

.....

(1 mark)

Q14.

AtoZrevision.com

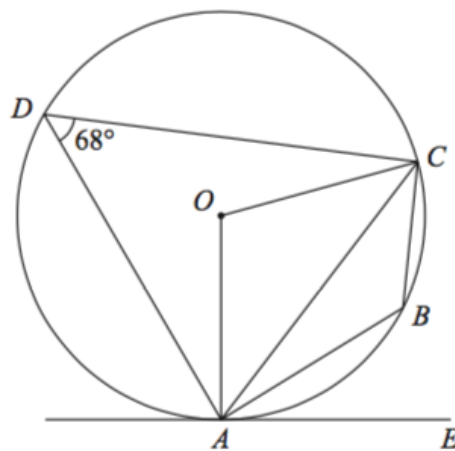


Diagram **NOT**
accurately drawn

A, B, C and D are points on a circle, centre O.
AE is a tangent to the circle.
Angle $ADC = 68^\circ$.

Find the size of angle CAE.

.....

(1 mark)

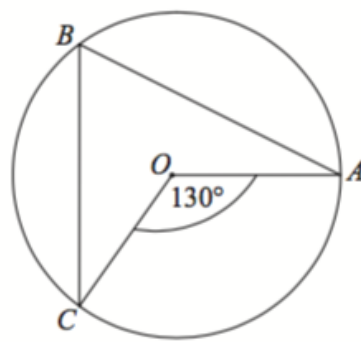


Diagram **NOT**
accurately drawn

In the diagram, O is the centre of the circle.

A, B and C are points on the circle.

Angle COA = 130° .

Give a reason why angle CBA = 65° .

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.....

(1 mark)

HARDER QUESTIONS

Q16.

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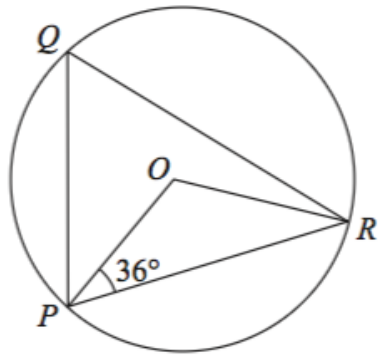
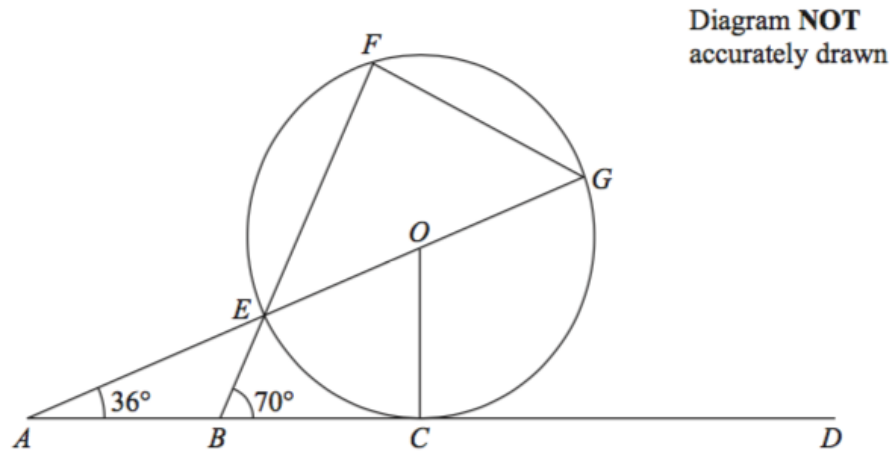


Diagram **NOT**
accurately drawn

P , Q and R are points on a circle, centre O .
Angle $OPR = 36^\circ$.

Work out the size of angle PQR .

.....
(3 marks)



$ABCD$ is the tangent at C to a circle, centre O .

E , F and G are points on the circle.

$AEOG$ and BEF are straight lines.

Angle $BAE = 36^\circ$.

Angle $EBC = 70^\circ$.

Find the size of angle AOC .

.....
(3 marks)

In the diagram below, straight line SRT is the tangent to the circle at the point R.

The triangle UVR is isosceles, with $UV = RV$.

Angle $UVR = 38^\circ$.

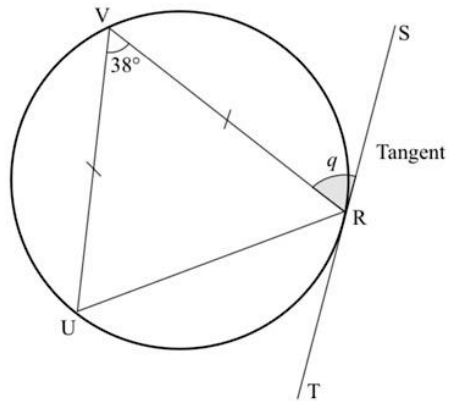


Diagram is
NOT to scale

Calculate the size, q , of angle VRS.

.....
(3 marks)

In the diagram below, P and Q are points on a circle with centre O .

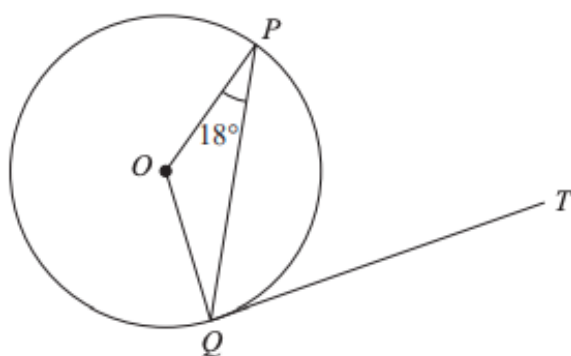


Diagram **NOT**
accurately drawn

QT is a tangent to the circle.

Angle $OPQ = 18^\circ$

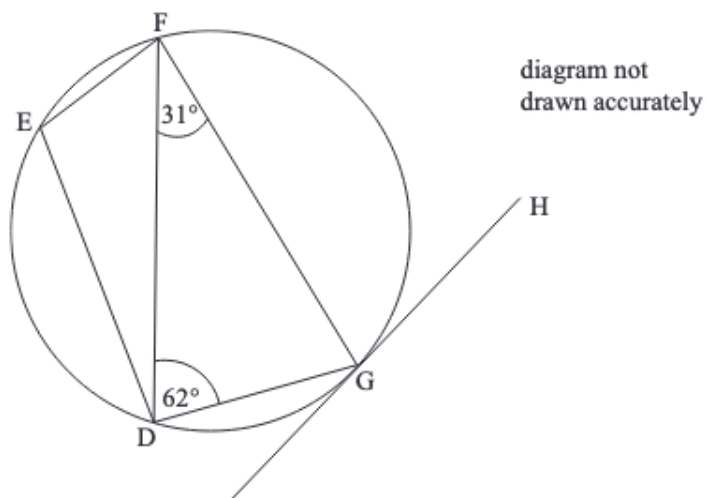
Work out the size of angle PQT .

.....
(3 marks)

D, E, F and G are points on the circumference of the circle below.

The angle $FDG = 62^\circ$ and the angle $DFG = 31^\circ$

HG is a tangent to the circle.



Calculate the size of angle DEF.

.....
(3 marks)

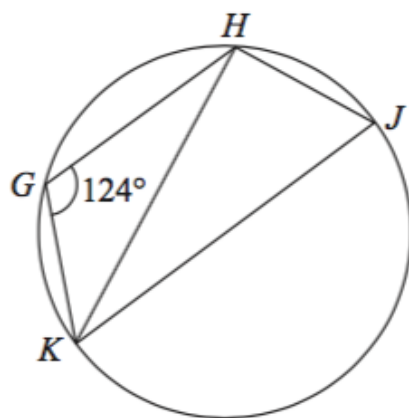


Diagram **NOT**
accurately drawn

G , H , J and K are points on a circle.

KJ is a diameter of the circle.

Angle $KGH = 124^\circ$.

Work out the size of angle HKJ .

.....
(3 marks)

Calculate the size of angle x in the diagram below.

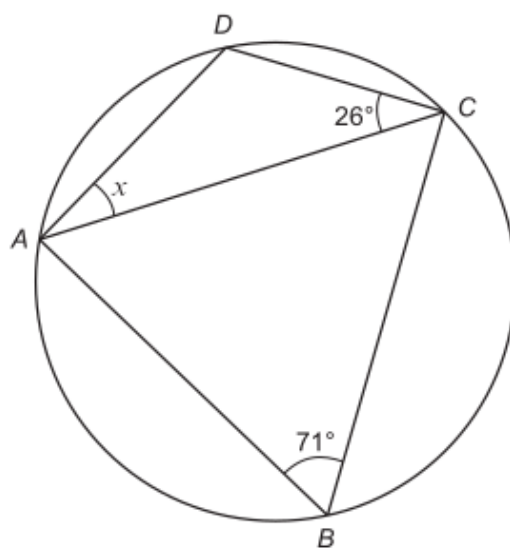
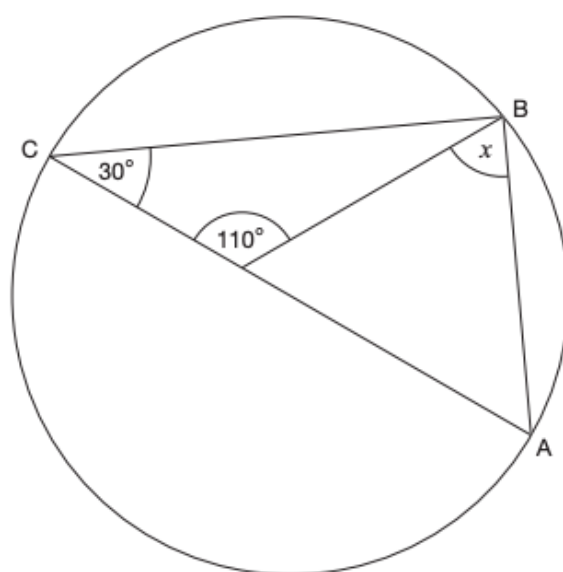


Diagram not drawn to scale

.....
(3 marks)

AC is the diameter of a circle and B is a point on the circumference of the circle.



Not drawn
accurately

What is the size of angle x ?

.....
(3 marks)

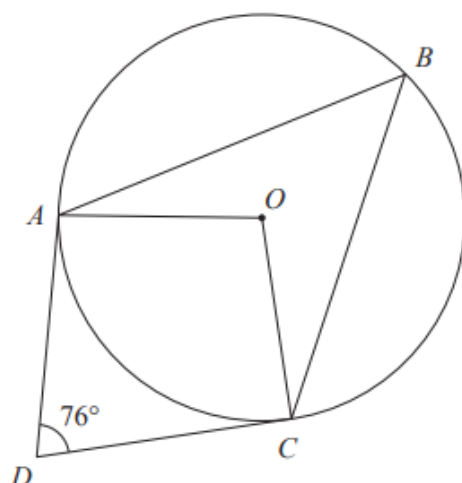


Diagram **NOT**
accurately drawn

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

DA and DC are tangents to the circle.

Angle $ADC = 76^\circ$

Work out the size of angle ABC .

.....
(3 marks)

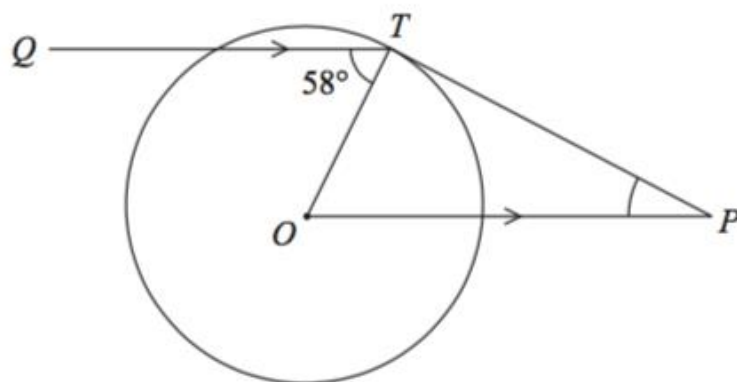


Diagram **NOT**
accurately drawn

T is a point on a circle, centre O .

Q is a point such that angle $QTO = 58^\circ$

P is the point such that OP is parallel to QT and PT is a tangent to the circle.

Work out the size of angle OPT .

.....
(3 marks)

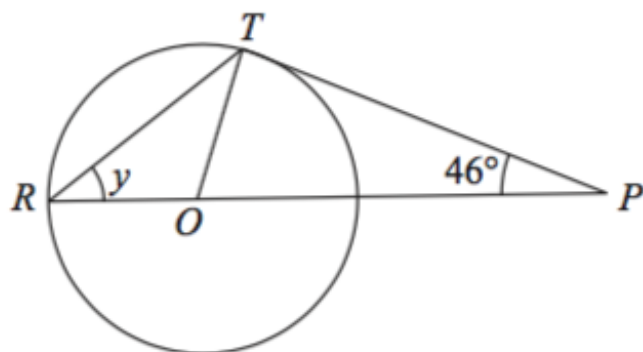


Diagram **NOT**
accurately drawn

R and T are points on a circle, centre O .

ROP is a straight line.

PT is a tangent to the circle.

Angle $TPO = 46^\circ$

Work out the size of angle y .

.....
(3 marks)