

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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The diagram shows a sector of a circle with radius 7 cm.

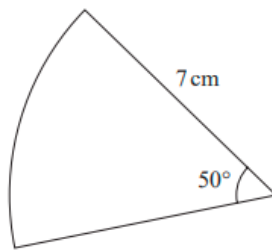


Diagram **NOT**
accurately drawn

Work out the length of the arc of the sector.
Give your answer correct to one decimal place.

.....
(2 marks)

Q2.

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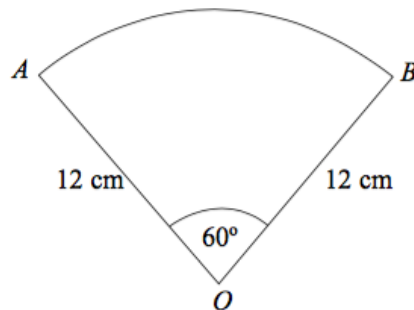


Diagram **NOT**
accurately drawn

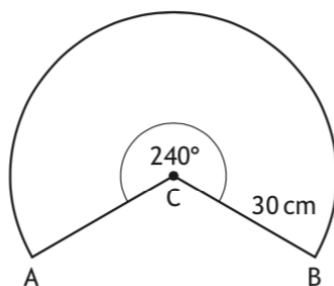
OAB is a sector of a circle, centre O.
Angle AOB = 60° .
OA = OB = 12 cm.

Work out the length of the arc AB.
Give your answer in terms of π .

.....
(2 marks)

Q3.

The diagram below shows a sector of a circle, centre C.



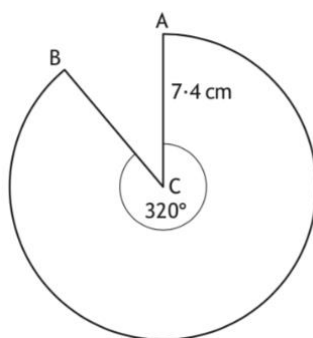
The radius of the circle is 30 centimetres.

Calculate the length of the major arc AB. Take $\pi = 3.14$.

.....
(2 marks)

Q4.

The diagram below shows a sector of a circle, centre C.



The radius of the circle is 7.4 centimetres.

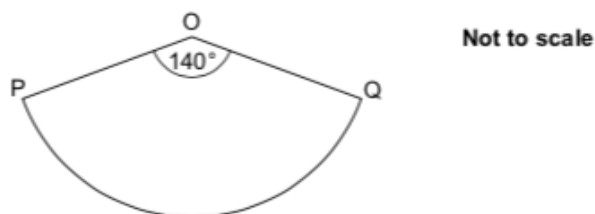
Calculate the length of the major arc AB.

.....
(3 marks)

Q5.

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OPQ is a sector of a circle, centre O and radius 9 cm.



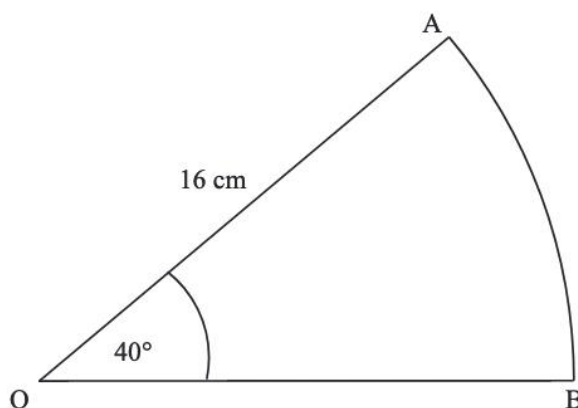
Find the perimeter of the sector.
Give your answer in terms of π .

.....
(3 marks)

Q6.

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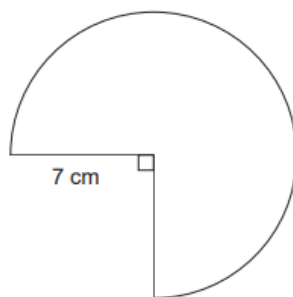
AOB is a sector of a circle, radius 16 cm.
Angle AOB = 40°



Work out the perimeter of the sector AOB.

.....
(3 marks)

The diagram shows a sector of a circle.
The radius is 7 cm .

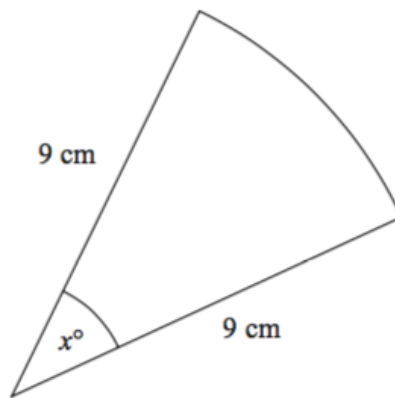


Not drawn accurately

Work out the perimeter of the shape.

.....
(3 marks)

The diagram shows a sector of a circle of radius 9 cm.



The sector has a perimeter of 25 cm.

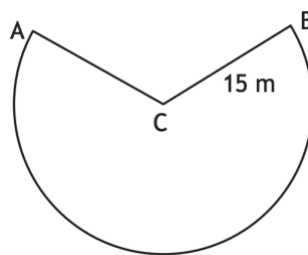
Work out the value of x .

Give your answer correct to 1 decimal place.

An attraction at a theme park has a carriage attached to an arm.



The arm swings from A to B along the arc of a circle, centre C, as shown in the diagram below.



The length of the arm, CB, is 15 metres.

The length of the major arc, AB, is 69.4 metres.

Calculate the size of the reflex angle ACB.

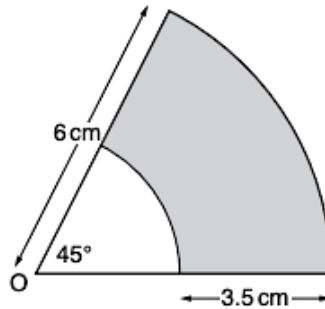
.....
(3 marks)

HIGHER TIER QUESTIONS (GRADES 7-8)

Q10.

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The design below is made from two sectors of circles, centre O .



Calculate the perimeter of the shaded part.
Give your answer correct to 3 significant figures.

.....
(5 marks)

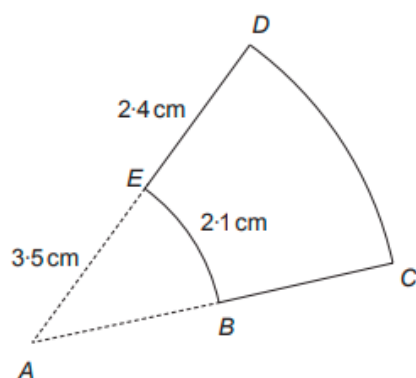


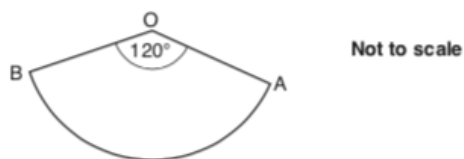
Diagram not drawn to scale

ADC is a sector of a circle, centre A .

AEB is a sector of another circle, also with centre A .

Calculate the perimeter of the shape $BCDE$.

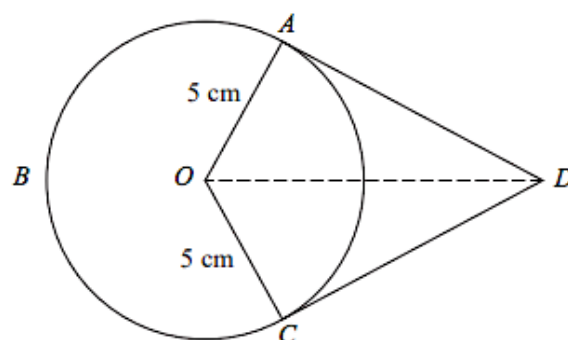
OAB is a sector of a circle, centre O.
Angle AOB = 120° .



The area of sector OAB is $3\pi \text{ cm}^2$.

Find, in terms of π , the length of the arc AB.

.....
(4 marks)



A , B and C are points on a circle of radius 5 cm, centre O .

DA and DC are tangents to the circle.

$DO = 9$ cm

Work out the length of arc ABC .

Give your answer correct to 3 significant figures.

.....
(5 marks)

The diagram shows sector OAB of a circle, centre O .

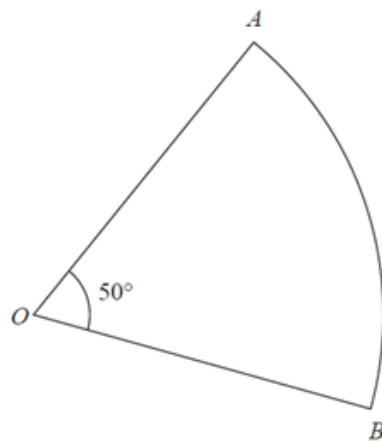


Diagram **NOT**
accurately drawn

Angle $AOB = 50^\circ$

Sector OAB has area $20\pi \text{ cm}^2$

Calculate the perimeter of sector OAB .

Give your answer correct to 3 significant figures.

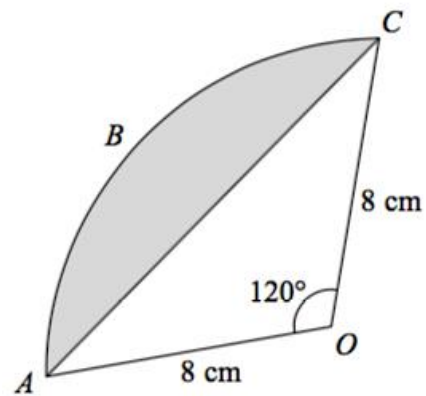


Diagram **NOT**
accurately drawn

ABC is an arc of a circle with centre O and radius 8 cm.
 AC is a chord of the circle.
Angle $AOC = 120^\circ$

Calculate the perimeter of the shaded segment.
Give your answer correct to 3 significant figures.

.....
(5 marks)

The diagram shows a shaded shape $ABCD$ made from a semicircle ABC and a right-angled triangle ACD .

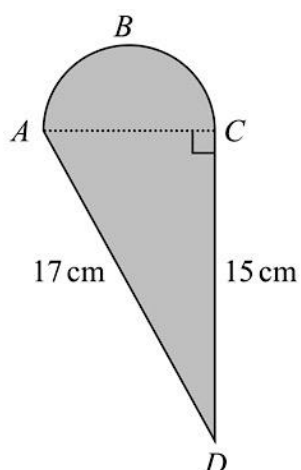


Diagram **NOT**
accurately drawn

AC is the diameter of the semicircle ABC .

Work out the perimeter of the shaded shape.
Give your answer correct to 3 significant figures.

.....
(5 marks)