



EXAM PAPERS PRACTICE

GCSE OCR Math J560
Circles Sectors & Arcs

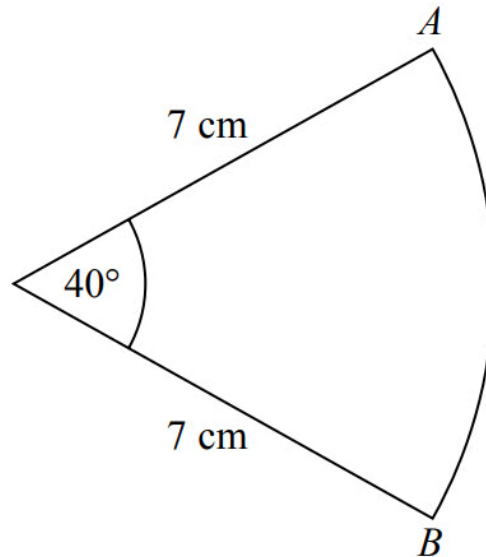
Question Paper

*"We will help you to
achieve A Star "*



Question 1

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



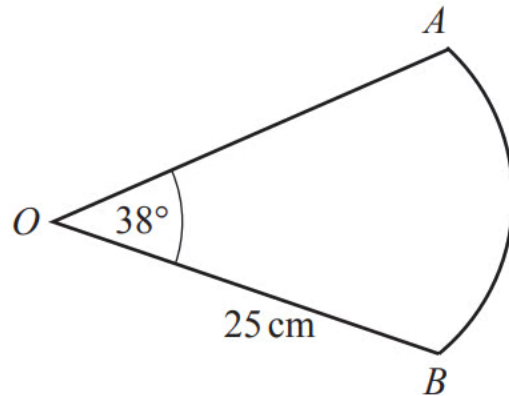
Work out the length of arc AB .

Give your answer correct to 3 significant figures.

[2 marks]



Question 2



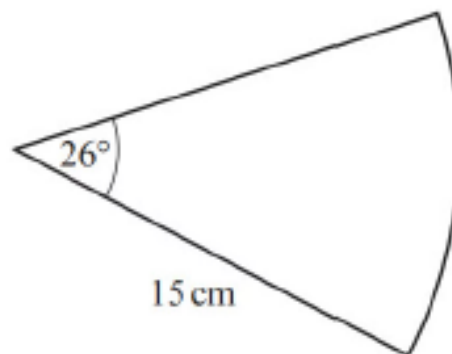
NOT TO
SCALE

The diagram shows a sector of a circle, centre O , radius 25 cm.
The sector angle is 38° .

Calculate the length of the arc AB .
Give your answer correct to 4 significant figures.

[3 marks]

Question 3



NOT TO
SCALE

The diagram shows a sector of a circle with radius 15 cm.

Calculate the perimeter of this sector.

[3 marks]



Question 4

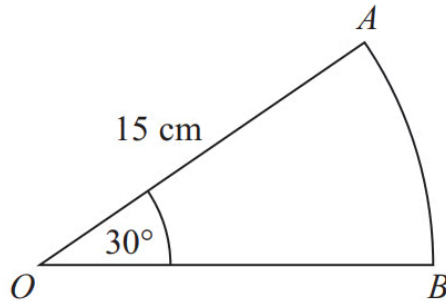


Diagram **NOT**
accurately drawn

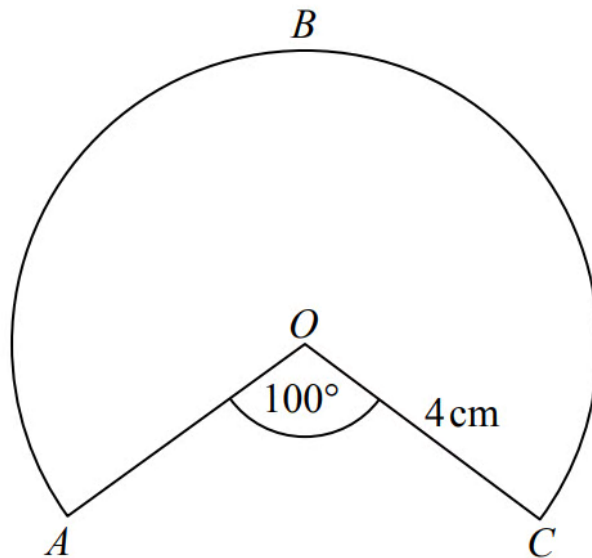
OAB is a sector of a circle, centre O .
The radius of the circle is 15 cm.
The angle of the sector is 30° .

Calculate the area of sector OAB .
Give your answer correct to 3 significant figures.

[2 marks]

Question 5

The diagram shows a sector of a circle of radius 4 cm.



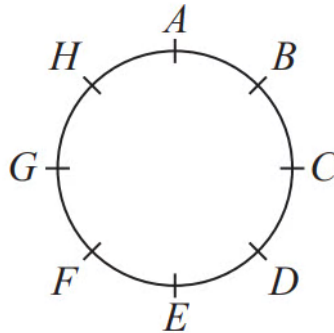
Work out the length of the arc ABC .
Give your answer correct to 3 significant figures.

[2 marks]



Question 6

Hasmeet walks once round a circle with diameter 80 metres.



There are 8 points equally spaced on the circumference of the circle.

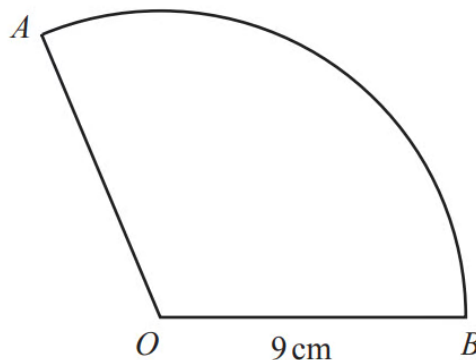
(a) Find the distance Hasmeet walks between one point and the next point.

[2 marks]

Question 7

AB is an arc of a circle, centre O , radius 9 cm.
The length of the arc AB is 6π cm.
The area of the sector AOB is $k\pi$ cm².

Find the value of k .



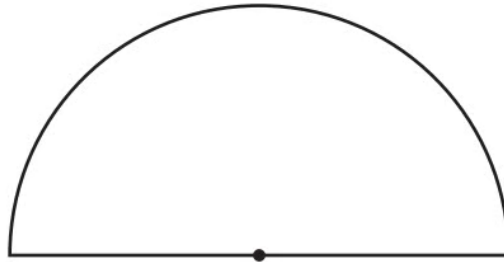
NOT TO
SCALE

[3 marks]



Question 8

(b)

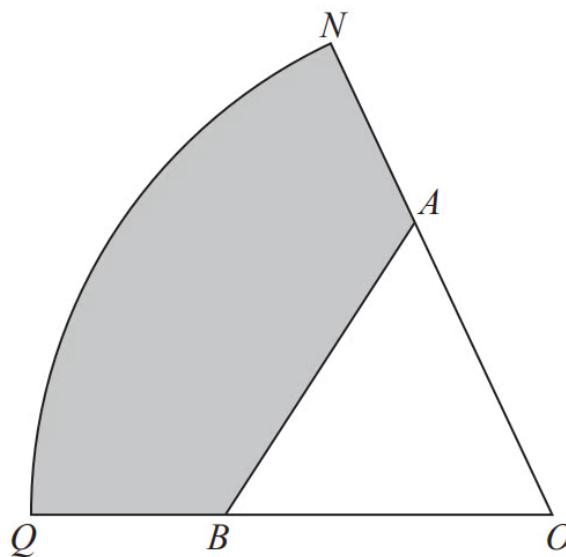


The length of the arc of the semi-circle is 15 cm.

Calculate the area of the semi-circle.

[2 marks]

Question 9



ONQ is a sector of a circle with centre O and radius 11 cm.

A is the point on ON and B is the point on OQ such that AOB is an equilateral triangle of side 7 cm.

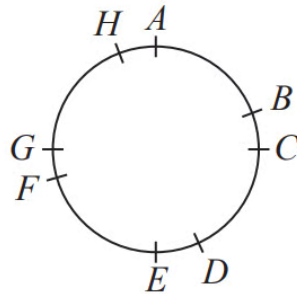
Calculate the area of the shaded region as a percentage of the area of the sector ONQ .
Give your answer correct to 1 decimal place.

[5 marks]



Question 10

Four of the points are moved, as shown in the diagram below.

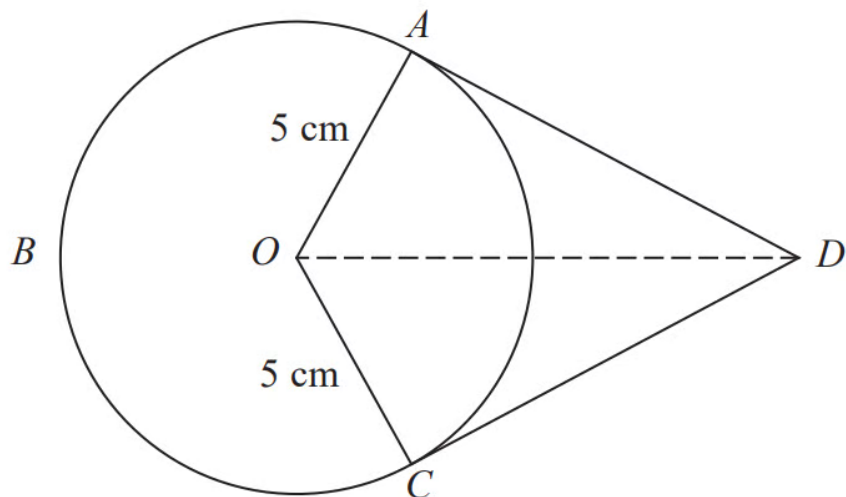


Hasmeet walks once round the circle again.

- (b) Has the mean distance that Hasmeet walks between one point and the next point changed?
You must give a reason for your answer.

[1 mark]

Question 11



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

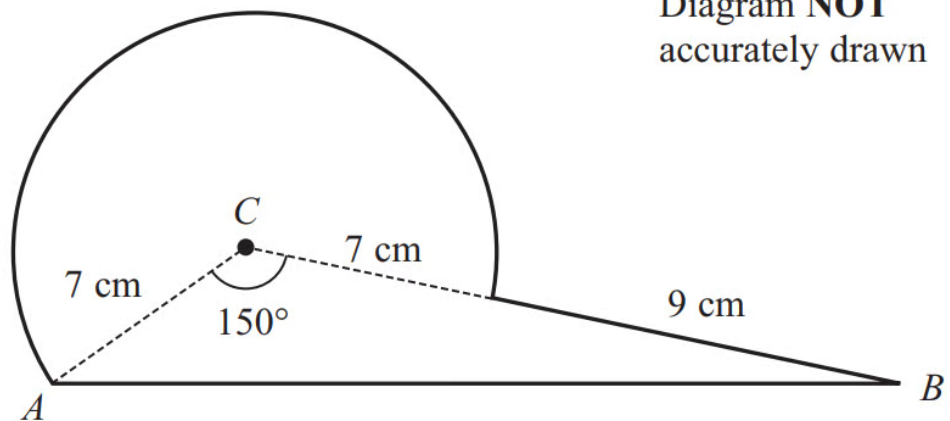
Work out the length of arc ABC .
Give your answer correct to 3 significant figures.

[5 marks]



Question 12

Here is a shape.



The shape is made from triangle ABC and a sector of a circle, centre C and radius CA .

$CA = 7$ cm.

$CB = 16$ cm.

Angle $ACB = 150^\circ$

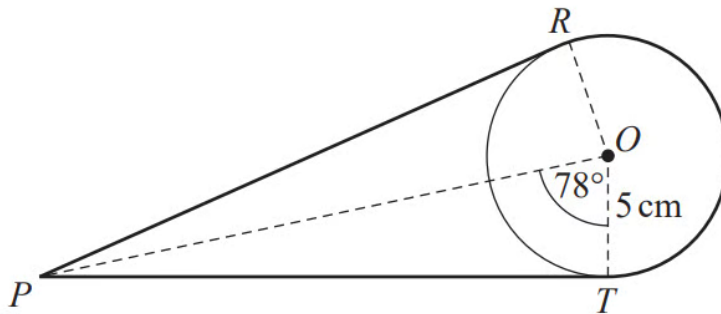
Calculate the area of the shape.

Give your answer correct to 3 significant figures.

[6 marks]



Question 13



NOT TO
SCALE

R and T are points on a circle, centre O , with radius 5 cm.
 PR and PT are tangents to the circle and angle $POT = 78^\circ$.

A thin rope goes from P to R , around the major arc RT and then from T to P .

Calculate the length of the rope.

[6 marks]



Question 14

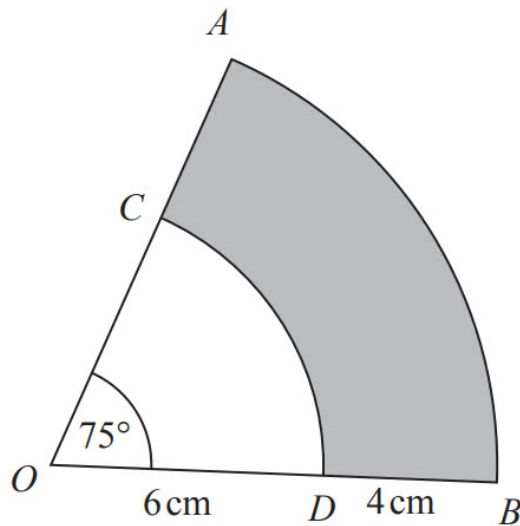


Diagram **NOT** accurately drawn

OAB is a sector of a circle, centre O .
 OCD is a sector of a circle, centre O .
 OCA and ODB are straight lines.

Angle $AOB = 75^\circ$

$OD = 6$ cm

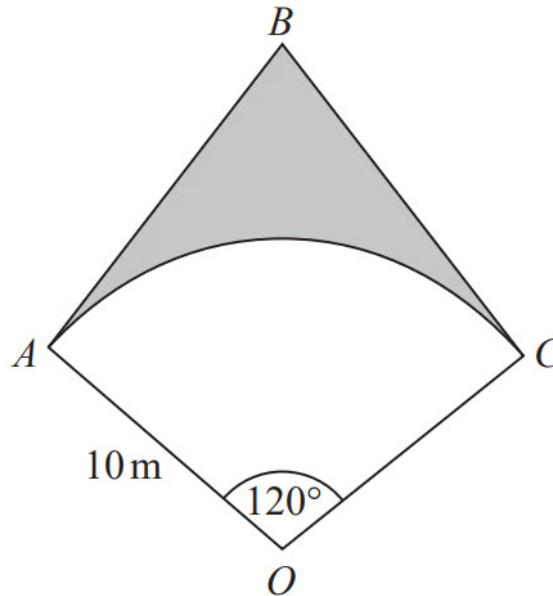
$DB = 4$ cm

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

[3 marks]



Question 15



OAC is a sector of a circle, centre O , radius 10 m.

BA is the tangent to the circle at point A .

BC is the tangent to the circle at point C .

Angle $AOC = 120^\circ$

Calculate the area of the shaded region.

Give your answer correct to 3 significant figures.

[5 marks]