Sectors (Area and Arc Length)

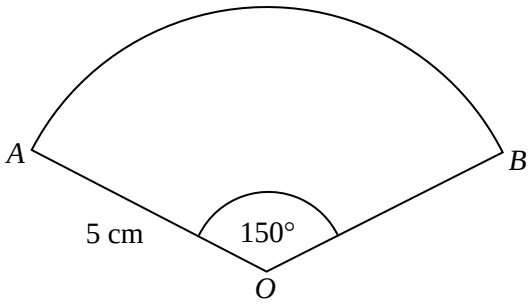
SCAN ME

REVISE THIS TOPIC

CHECK YOUR ANSWERS

SCAN ME

1 *OAB* is a sector of a circle.



(a) Work out the area of the sector.
Give your answer to 1 decimal place.

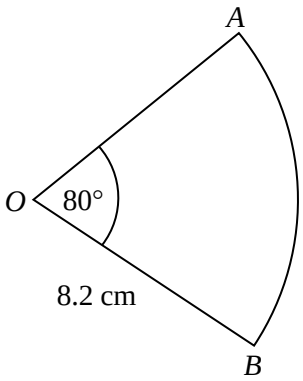
..... cm^2
(2)

(b) Work out the length of the arc *AB*.
Give your answer to 1 decimal place.

.....cm
(2)

(Total for Question 1 is 4 marks)

2 *OAB* is a sector of a circle.



(a) Work out the area of the sector.
Give your answer to 1 decimal place.

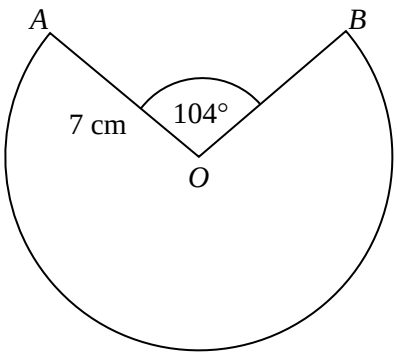
..... cm^2
(2)

(b) Work out the length of the arc *AB*.
Give your answer to 1 decimal place.

.....cm
(2)

(Total for Question 2 is 4 marks)

3 *OAB* is a sector of a circle.



(a) Work out the area of the sector.
Give your answer to 1 decimal place.

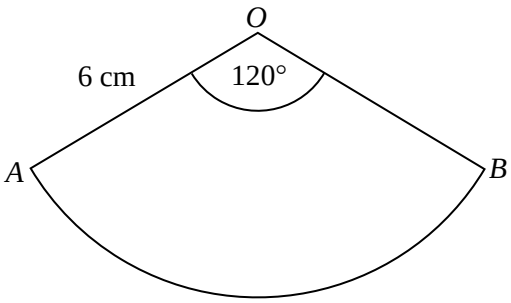
..... cm^2
(2)

(b) Work out the length of the arc *AB*.
Give your answer to 1 decimal place.

..... cm
(2)

(Total for Question 3 is 4 marks)

4 *OAB* is a sector of a circle.



(a) Work out the area of the sector.
Give your answer in terms of π

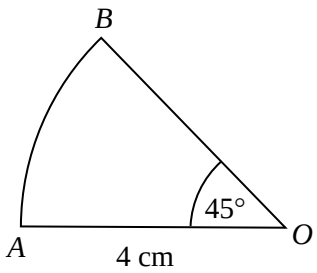
..... cm^2
(2)

(b) Work out the length of the arc *AB*.
Give your answer in terms of π

.....cm
(2)

(Total for Question 4 is 4 marks)

5 *OAB* is a sector of a circle.



(a) Work out the area of the sector.
Give your answer in terms of π

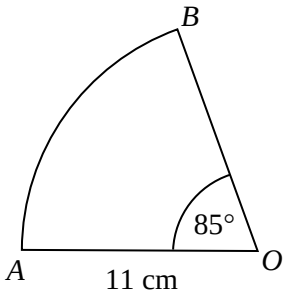
..... cm^2
(2)

(b) Work out the length of the arc *AB*.
Give your answer in terms of π

.....cm
(2)

(Total for Question 5 is 4 marks)

6 *OAB* is a sector of a circle.

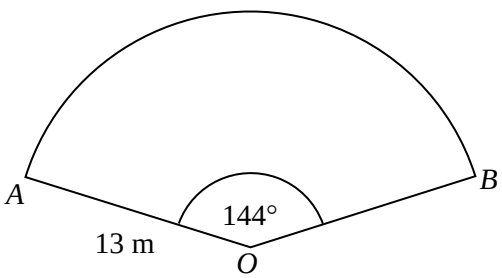


Work out the **perimeter** of the sector.
Give your answer to 1 decimal place.

.....cm

(Total for Question 6 is 3 marks)

7 *OAB* is a sector of a circle.

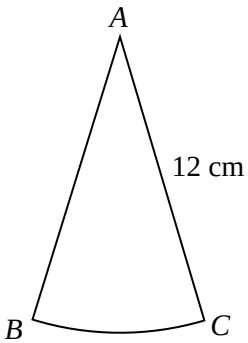


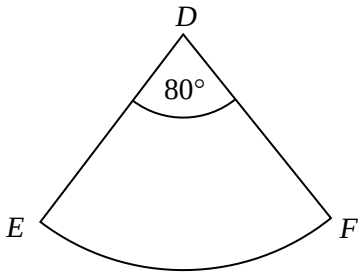
Work out the **perimeter** of the sector.
Give your answer to 1 decimal place.

.....m

(Total for Question 7 is 3 marks)

8 *ABC and DEF* are sectors of different circles.





$AC : DF = 3 : 2$
Angle BAC : Angle $EDF = 2 : 5$

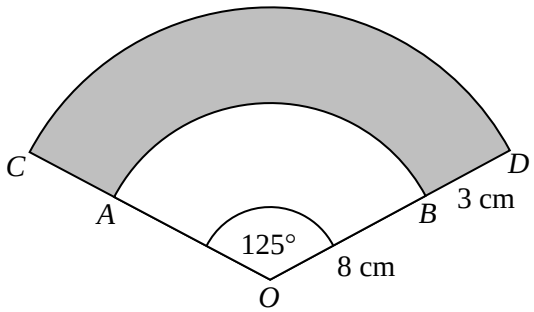
Tick the box for the sector with the greater area.

☐ Sector *ABC* ☐ Sector *DEF*

Show working to support your answer.

(Total for Question 8 is 5 marks)

9 *OAB* and *OCD* are sectors of circles with centre *O*.



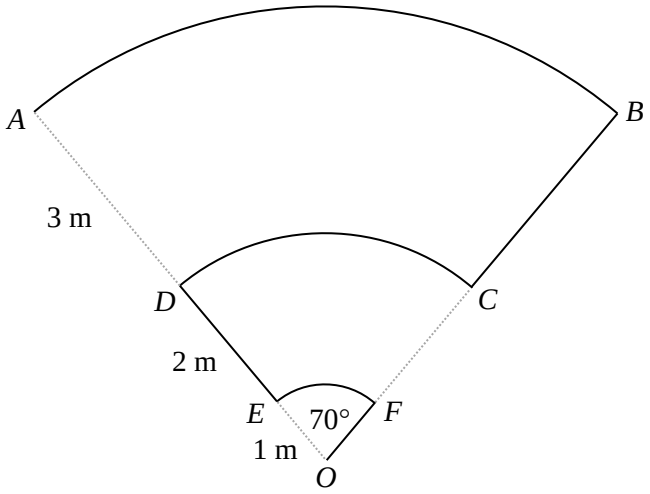
OB = 8 cm
BD = 3 cm

Work out the area of the shaded region.
Give your answer to 3 significant figures.

.....cm^2

(Total for Question 9 is 4 marks)

10 *OAB*, *ODC* and *OEF* are sectors of circles with centre *O*.



OE = 1 m
ED = 2 m
DA = 3 m
Angle *AOB* = Angle *DOC* = Angle *EOF* = 70°

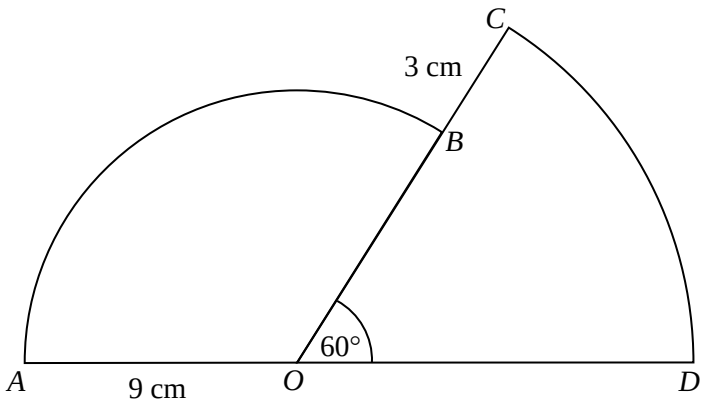
A robot starts at point *A* and follows the path *ABCDEFO*.

Work out the total distance that the robot travels.
Give your answer to 1 decimal place.

.....m

(Total for Question 10 is 4 marks)

11 *OAB* and *OCD* are sectors of circles with centre *O*.



AO = 9 cm
BC = 3 cm
Angle *COD* = 60°

AOB and *OBC* are straight lines.

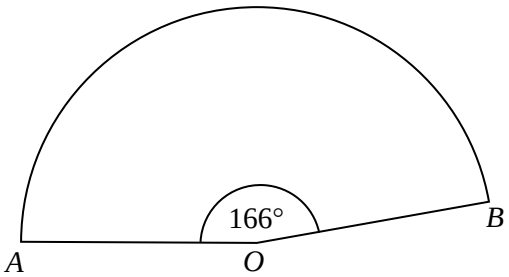
Area of sector *OAB* – Area of sector *OCD* = $k\pi$ where *k* is an integer.

Work out the value of *k*.

k = ...

(Total for Question 11 is 4 marks)

12 *OAB* is a sector of a circle.

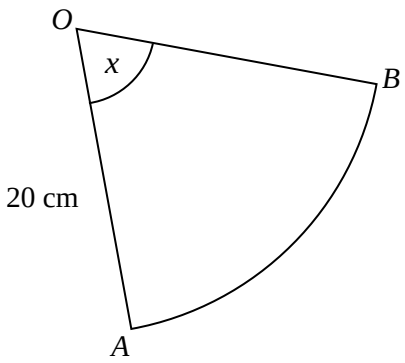


The area of the sector is 32 cm^2
Work out the radius of the sector.
Give your answer to 1 decimal place.

.....cm

(Total for Question 12 is 3 marks)

13 *OAB* is a sector of a circle.



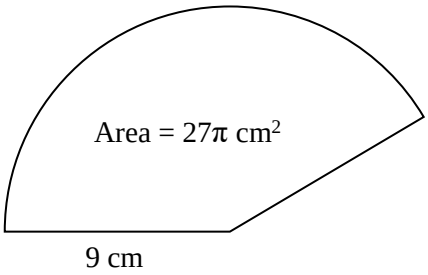
The length of arc *AB* is 22 cm
Work out the value of *x*.
Give your answer to the nearest degree.

x = ... °

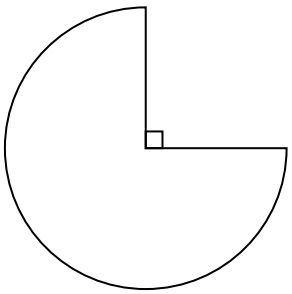
(Total for Question 13 is 3 marks)

14 Here are two sectors from different circles.

Sector **A**



Sector **B**



The length of the arc of sector **B** = 2 × the length of the arc of sector **A**

Work out the area of sector **B**
Give your answer in terms of π

.....cm²

(Total for Question 14 is 6 marks)