

# Sector Areas and Arc Lengths

## Question Paper

Level	GCSE
Subject	Maths
Exam Board	Edexcel GCSE
Topic	Sector Areas and Arc Lengths
Grade Level	Grade 5
Booklet	Question Paper

**Time Allowed:** 40 minutes

**Score:** /33

**Percentage:** /100

**Grade Boundaries:**

1.

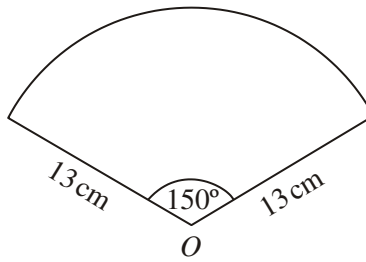


Diagram **NOT** accurately drawn

The diagram shows a sector of a circle, centre  $O$ .  
The radius of the circle is 13 cm.  
The angle of the sector is  $150^\circ$ .

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

.....  $\text{cm}^2$   
(Total 2 marks)

2.

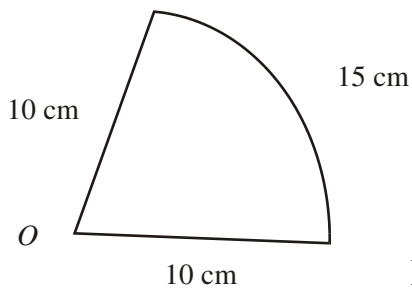


Diagram **NOT** accurately drawn

The diagram shows a sector of a circle, centre  $O$ , radius 10 cm.  
The arc length of the sector is 15 cm.

Calculate the area of the sector.

.....  $\text{cm}^2$   
(Total 4 marks)

3.

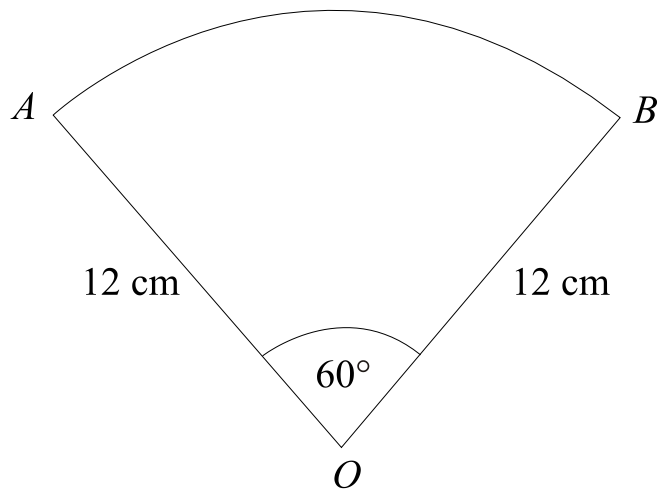


Diagram **NOT** accurately drawn

$OAB$  is a sector of a circle, centre  $O$ .

Angle  $AOB = 60^\circ$ .

$OA = OB = 12$  cm.

Work out the length of the arc  $AB$ .

Give your answer in terms of  $\pi$ .

..... cm

**(Total 3 marks)**

4.

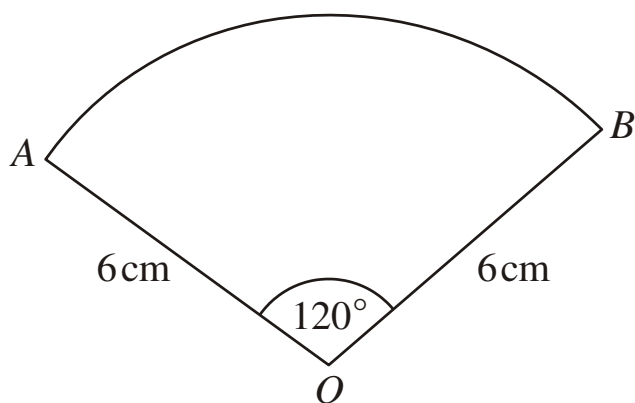


Diagram **NOT** accurately drawn

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

The radius of the circle is  $6\text{ cm}$ .

Angle  $AOB = 120^\circ$ .

Work out the **perimeter** of the sector.

Give your answer in terms of  $\pi$  in its simplest form.

..... cm

**(Total 3 marks)**

5.

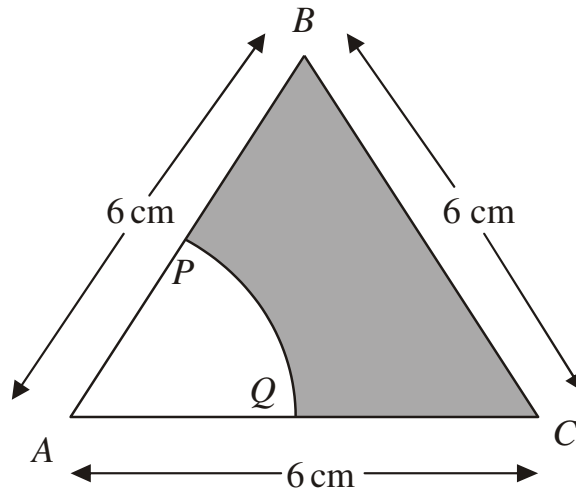


Diagram **NOT** accurately drawn

The diagram shows an equilateral triangle  $ABC$  with sides of length  $6\text{ cm}$ .

$P$  is the midpoint of  $AB$ .

$Q$  is the midpoint of  $AC$ .

$APQ$  is a sector of a circle, centre  $A$ .

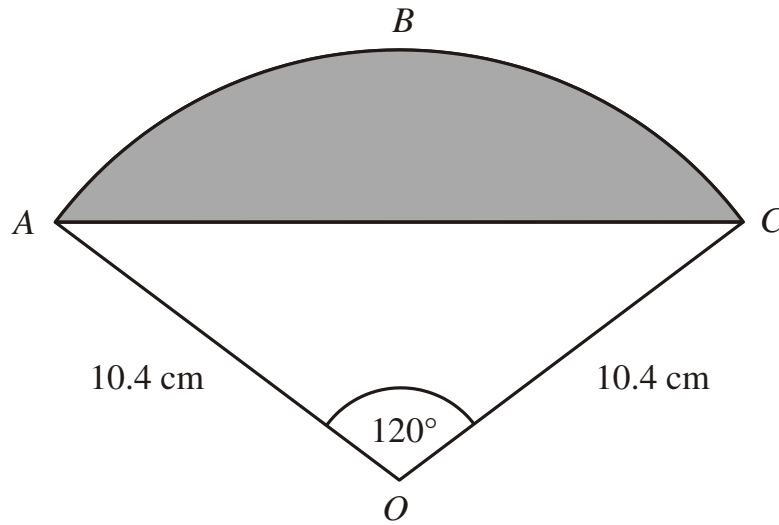
Calculate the area of the shaded region.

Give your answer correct to 3 significant figures.

.....  $\text{cm}^2$   
(Total 4 marks)

6.

Diagram **NOT** accurately drawn



The diagram shows a sector  $OABC$  of a circle with centre  $O$ .  
 $OA = OC = 10.4\text{ cm}$ .  
Angle  $AOC = 120^\circ$ .

- (a) Calculate the length of the arc  $ABC$  of the sector.  
Give your answer correct to 3 significant figures.

.....cm

(3)

- (b) Calculate the area of the shaded segment  $ABC$ .  
Give your answer correct to 3 significant figures.

.....cm<sup>2</sup>

(4)

(Total 7 marks)

7. The diagram shows a sector of a circle with centre  $O$ .  
The radius of the circle is 8 cm.

$PRS$  is an arc of the circle.

$PS$  is a chord of the circle.

Angle  $POS = 40^\circ$

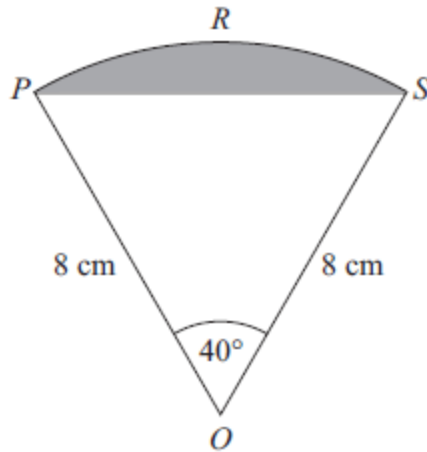


Diagram **NOT**  
accurately drawn

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

.....  $\text{cm}^2$

**(Total 5 marks)**

8.

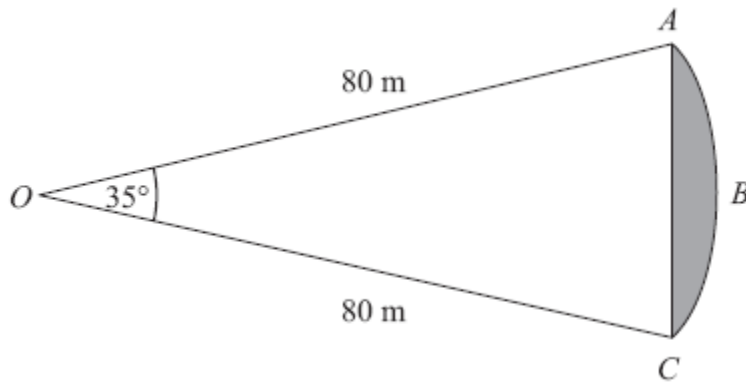


Diagram **NOT** accurately drawn

$ABC$  is an arc of a circle centre  $O$  with radius  $80\text{ m}$ .  
 $AC$  is a chord of the circle.  
Angle  $AOC = 35^\circ$ .

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

.....  $\text{m}^2$

**(Total 5 marks)**