

# Circle Problems

## Difficulty: Easy

### Question Paper 2

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Mensuration
Sub-Topic	Circle Problems
Paper	Paper 2
Difficulty	Easy
Booklet	Question Paper 2

**Time allowed:** 40 minutes

**Score:** /31

**Percentage:** /100

#### Grade Boundaries:

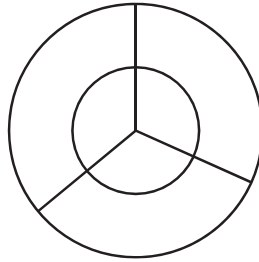
##### CIE IGCSE Maths (0580)

A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

##### CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%

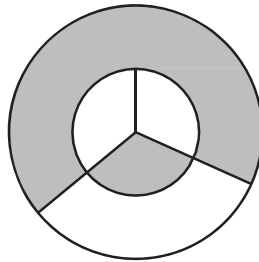
## Question 1



NOT TO  
SCALE

The diagram shows two concentric circles and three radii.  
The diagram has rotational symmetry of order 3.

A club uses the diagram for its badge with some sections shaded.  
The radius of the large circle is 6 cm and the radius of the small circle is 4 cm.



NOT TO  
SCALE

Calculate the total perimeter of the shaded area.

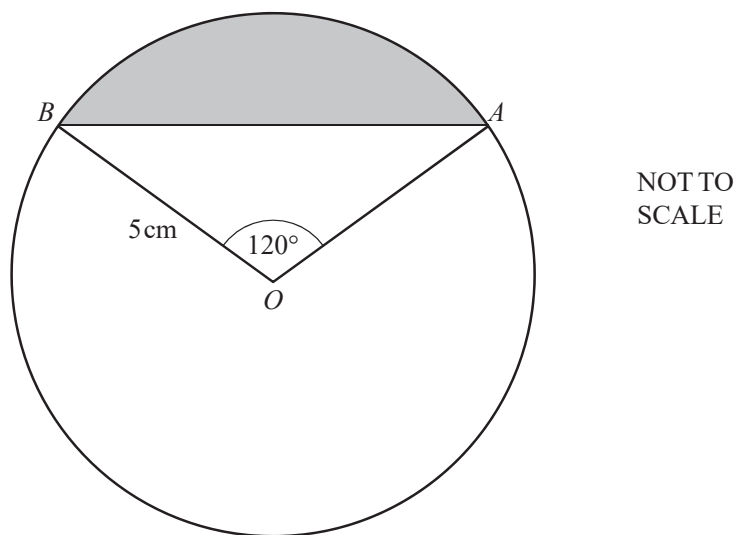
[5]

## Question 2

Find the circumference of a circle of radius 2.5 cm.

[2]

## Question 3

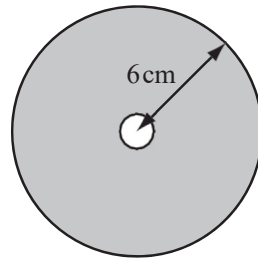


$A$  and  $B$  lie on a circle centre  $O$ , radius 5 cm.  
Angle  $AOB = 120^\circ$ .

Find the area of the shaded segment.

[4]

## Question 4



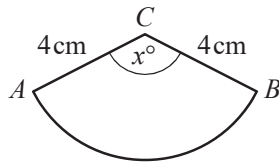
NOT TO  
SCALE

The diagram shows a circular disc with radius 6 cm.  
In the centre of the disc there is a circular hole with radius 0.5 cm.

Calculate the area of the shaded section.

[3]

## Question 5



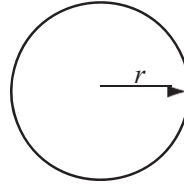
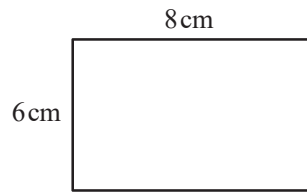
NOT TO  
SCALE

$ABC$  is a sector of a circle, radius 4 cm and centre  $C$ .  
The length of the arc  $AB$  is 8 cm and angle  $ACB = x^\circ$ .

[3]

Calculate the value of  $x$ .

## Question 6



NOT TO  
SCALE

The perimeter of the rectangle is the same length as the circumference of the circle.

Calculate the radius,  $r$ , of the circle.

[3]

## Question 7

A circle has a radius of 50 cm.

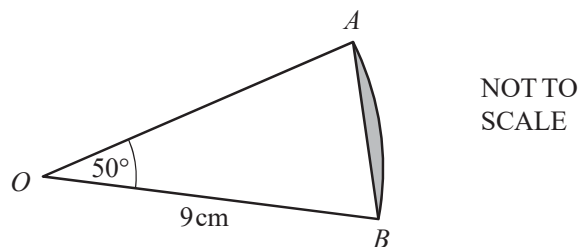
(a) Calculate the area of the circle in  $\text{cm}^2$ .

[2]

(b) Write your answer to part (a) in  $\text{m}^2$ .

[1]

## Question 8



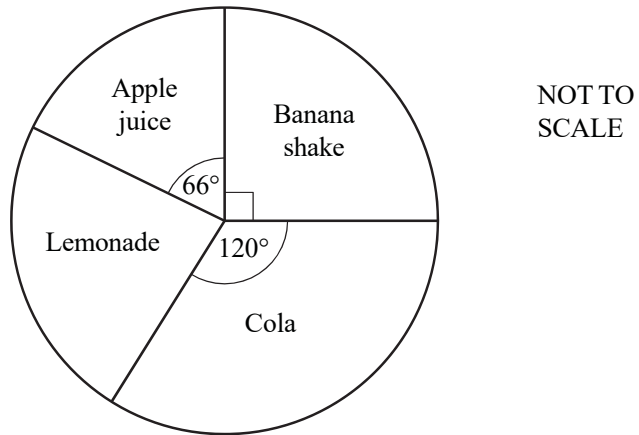
The diagram shows a sector  $AOB$  of a circle, centre  $O$ , radius  $9\text{ cm}$  with angle  $AOB = 50^\circ$ .

Calculate the area of the segment shaded in the diagram.

[4]

## Question 9

60 students recorded their favourite drink.  
The results are shown in the pie chart.



(a) **Calculate** the angle for the sector labelled Lemonade. [1]

(b) Calculate the number of students who chose Banana shake. [1]

(c) The pie chart has a radius of 3 cm.  
Calculate the arc length of the sector representing Cola. [2]