Area and Circumference of Circles

Mark Scheme

Level	GCSE
Subject	Maths
Exam Board	Edexcel GCSE
Topic	Area and Circumference of Circles
Grade Level	Grade 3
Booklet	Mark Scheme

Time Allowed: **56 minutes**

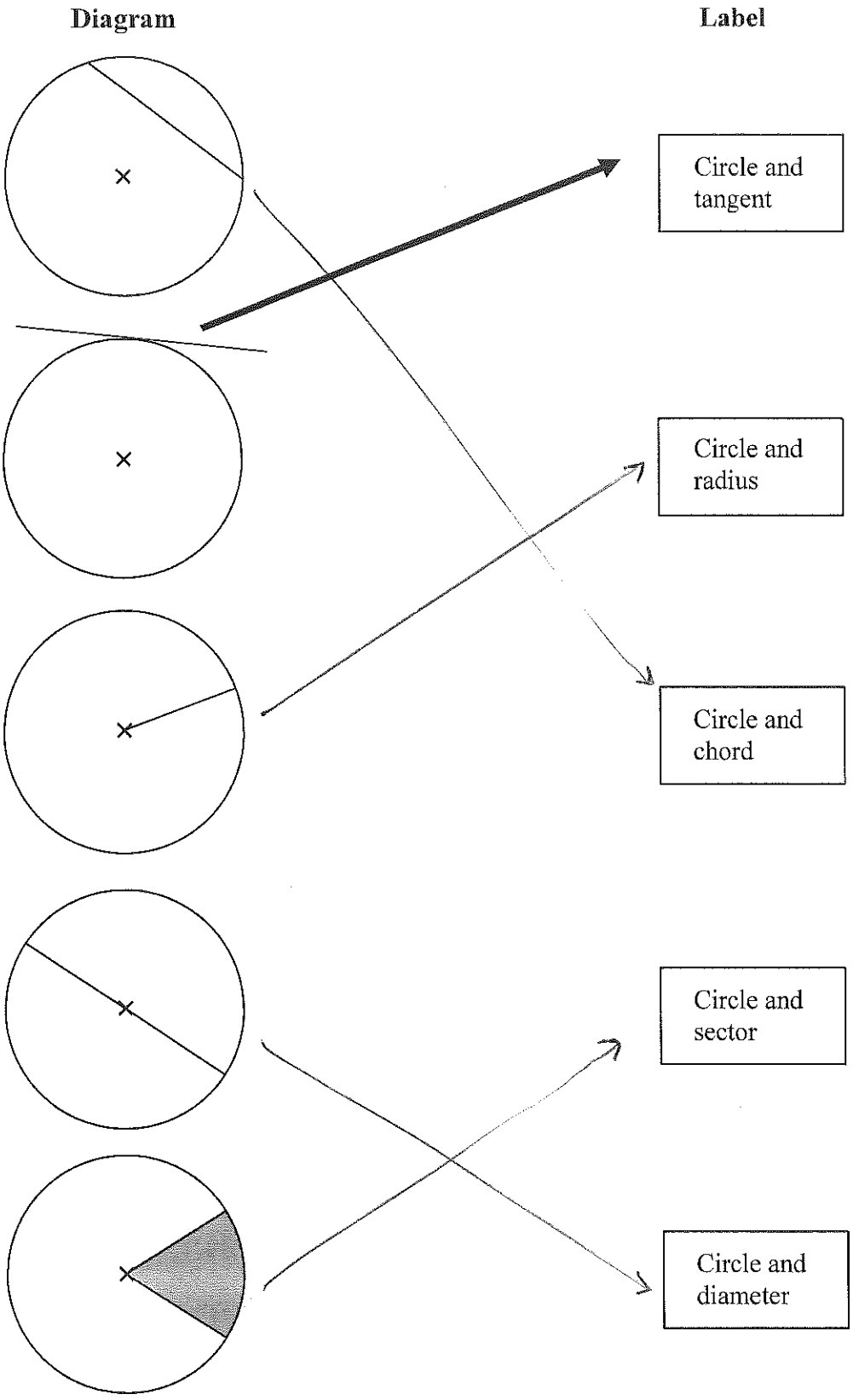
Score: **/46**

Percentage: **/100**

Grade Boundaries:

1. Here are 5 diagrams and 5 labels.
In each diagram the centre of the circle is marked with a cross (×).

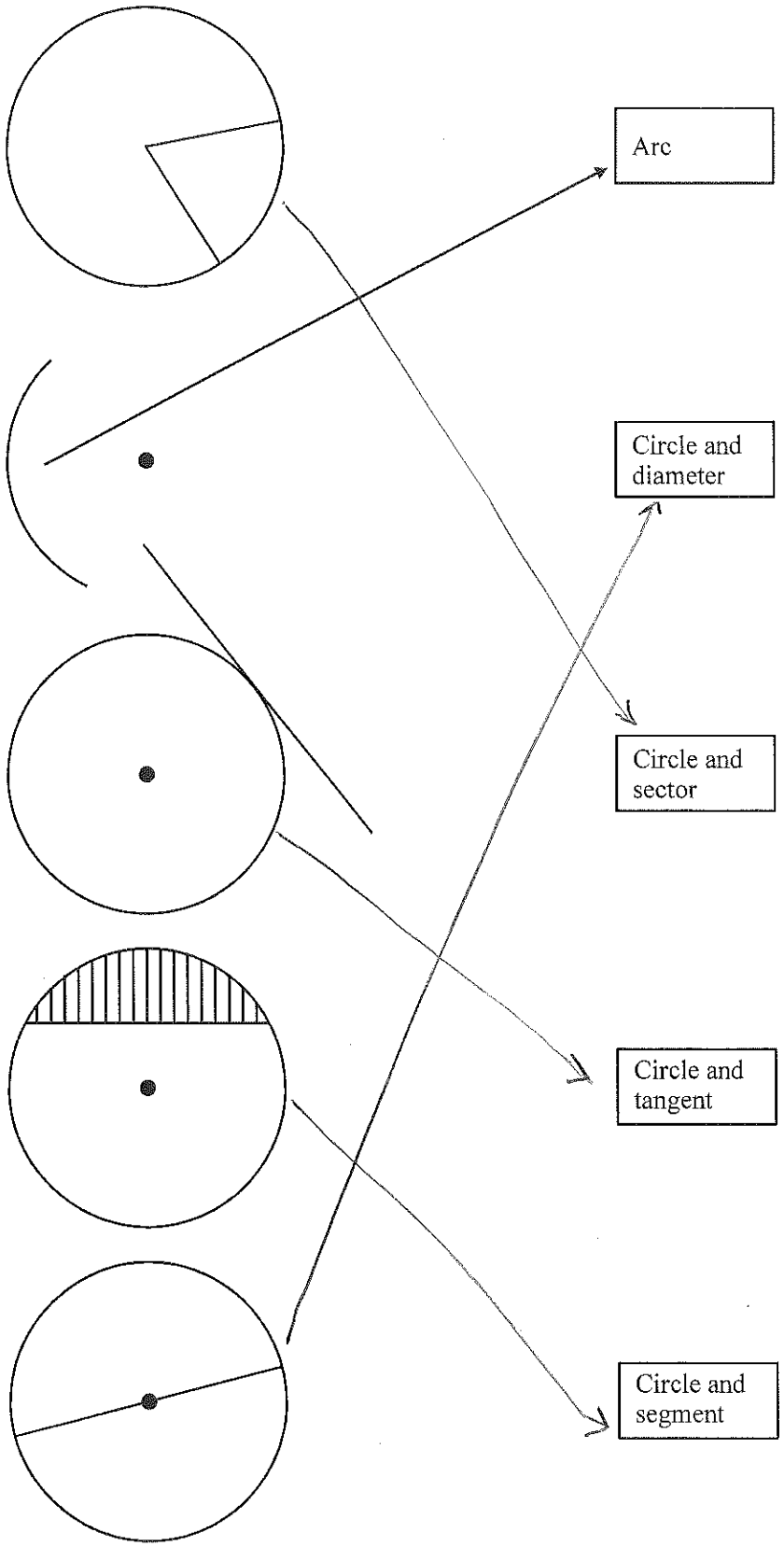
Match each diagram to its label.
One has been done for you.



(3 marks)

2. Here are some diagrams relating to a circle.

Draw an arrow from each of the diagrams to its mathematical name.
The arrow showing an arc is drawn for you.



(3 marks)

3. The radius of a circle is 3.60 m.

Work out the area of the circle.
Give your answer correct to 3 significant figures.

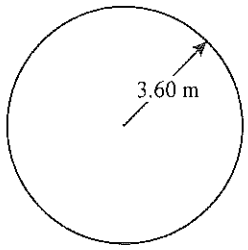


Diagram **NOT** accurately drawn

$\pi \times (3.6)^2$

40.7 m^2 (3sf)

(3 marks)

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4. The diameter of a wheel on Harry's bicycle is 0.65 m.

Calculate the circumference of the wheel.
Give your answer correct to 2 decimal places.

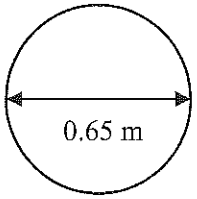

Diagram **NOT** accurately drawn

$\pi \times 0.65$

2.04m (2dp)

(3 marks)

5.

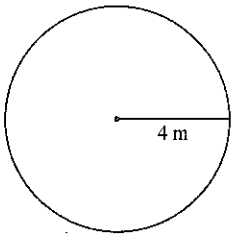

Diagram **NOT** accurately drawn

The radius of a circle is 4 m.

$\pi \times (4)^2$

Work out the area of the circle.
Give your answer correct to 3 significant figures.

50.3 m^2 (3sf)

(3 marks)

6. A circle has a radius of 6.1 cm.
Work out the circumference of the circle.

Give your answer correct to 3 significant figures.

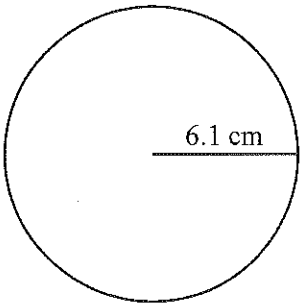

Diagram **NOT** accurately drawn

$2 \times \pi \times 6.1$

38.3 cm (3sf)

(3 marks)

7. The radius of a circle is 6.4 cm.

Work out the circumference of this circle.

Give your answer correct to 1 decimal place.

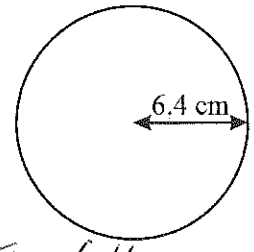

Diagram **NOT** accurately drawn

$2 \times \pi \times 6.4$

40.2cm (1dp)

(3 marks)

8.

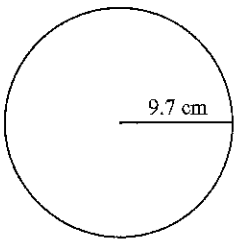

Diagram **NOT** accurately drawn

The radius of the circle is 9.7 cm.
Work out the area of the circle.
Give your answer to 3 significant figures.

$\pi \times (9.7)^2$

296 cm^2 (3sf)

(3 marks)

9. The diameter of a circle is 12 centimetres.

(a) Work out the circumference of the circle.
Give your answer, in centimetres, correct to 1 decimal place.

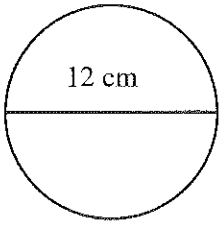

Diagram **NOT** drawn accurately

$\pi \times 12$

37.7 cm (1dp)
.....

(3 marks)

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10. Here is a tile in the shape of a semicircle.

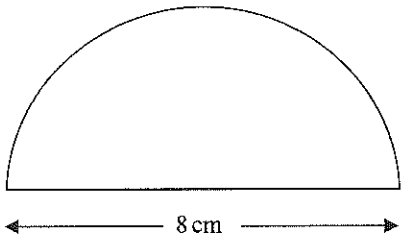

Diagram **NOT** accurately drawn

The diameter of the semicircle is 8 cm.

$\frac{\pi \times 8}{2} + 8$

Work out the perimeter of the tile.
Give your answer correct to 2 decimal places.

20.57 (2dp)
..... cm

(3 marks)

11.

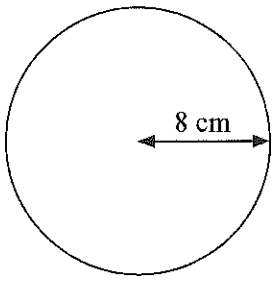

Diagram **NOT** accurately drawn

$2 \times \pi \times 8$

The radius of this circle is 8 cm.

Work out the circumference of the circle.
Give your answer correct to 2 decimal places.

50.27 (2dp)
..... cm

(3 marks)

12.

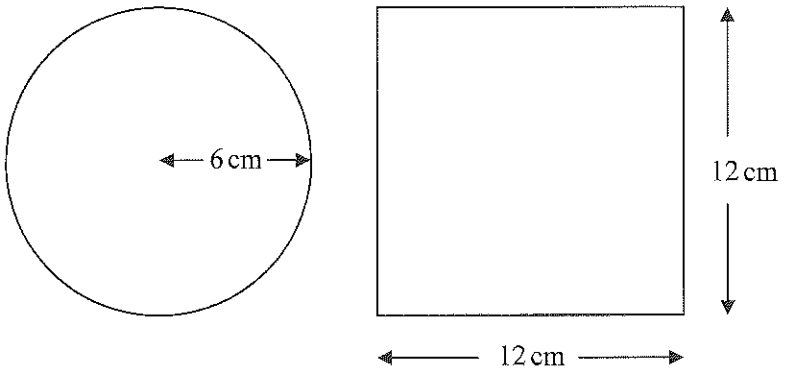

Diagram **NOT** accurately drawn

A circle has a radius of 6 cm.

A square has a side of length 12 cm.

Work out the difference between the area of the circle and the area of the square.
Give your answer correct to one decimal place.

Circle: $\pi \times 6^2$ $= 113.1\ cm^2$ (1dp)

Square: $12 \times 12 = 144\ cm^2$

30.9 cm^2 (1dp)

.....

(4 marks)

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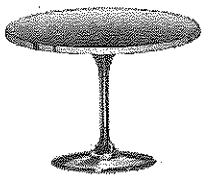
13. The top of a table is a circle.
The radius of the top of the table is 50 cm.



(a) Work out the area of the top of the table.

$\pi \times 50^2$

7854.0 (1dp)

.....cm^2

(2)

The base of the table is a circle.
The diameter of the base of the table is 40 cm.

(b) Work out the circumference of the base of the table.

$\pi \times 40$

125.7 (1dp)

.....cm

(2)

(4 marks)

14.

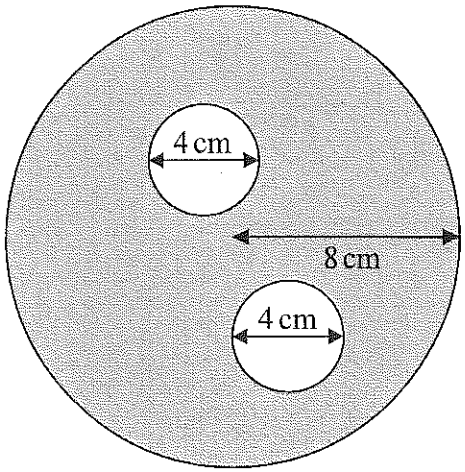


Diagram **NOT** accurately drawn

The diagram shows two small circles inside a large circle.
The large circle has a radius of 8 cm.

Each of the two small circles has a diameter of 4 cm.

(a) Write down the radius of each of the small circles.

2 ..... cm

(1)

(b) Work out the area of the region shown shaded in the diagram.
Give your answer correct to one decimal place.

$\pi \times 8^2 - 2(\pi \times 2^2)$

175.9 ..... cm^2 (1dp)

(4)

(5 marks)