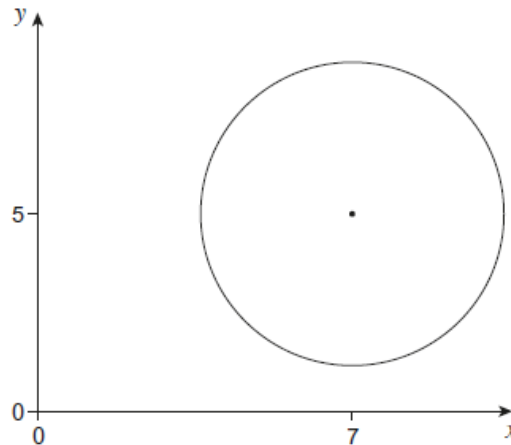## Non-Calculator

Q1.

A circle radius 3 units, centre (7, 5) is shown.
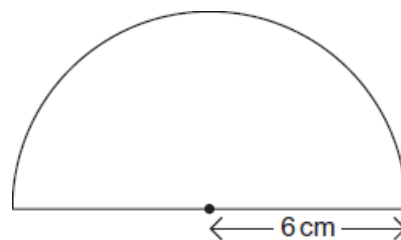
Not drawn accurately

Work out the coordinates of **any** point that lies on the circumference of the circle.
You **must** show your working, which may be on the diagram.

Answer (_____ , _____)

(Total 2 marks)

Q2.

Work out the area of a semi-circle of radius 6 cm.
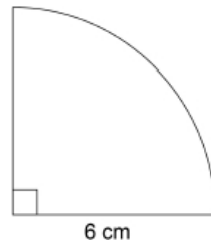Give your answer in terms of π.

Not drawn
accurately

← 6 cm →

_____

_____

_____

Answer _____ cm²

(Total 2 marks)

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Q3.

Here is a quarter circle of radius 6 cm

Not drawn accurately

6 cm

Work out the area of the quarter circle.
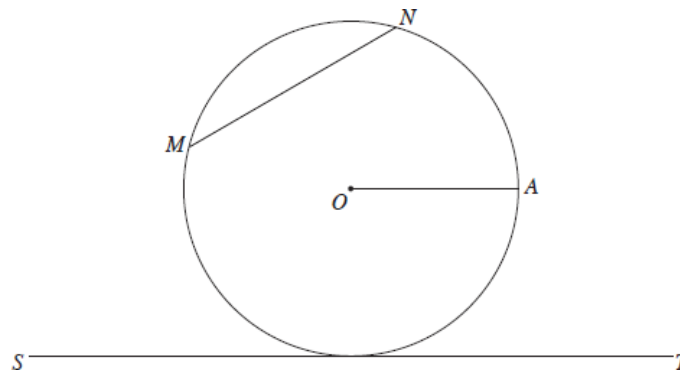
Give your answer in terms of π.

_____

_____

Answer _____ cm^2

(Total 2 marks)

Q4.

O is the centre of the circle.

Circle the word to complete each sentence.

(a)   The line OA is a

    chord   circumference   diameter   radius   tangent

(1)

(b)   The line MN is a

    chord   circumference   diameter   radius   tangent

(1)

(c)   The line ST is a

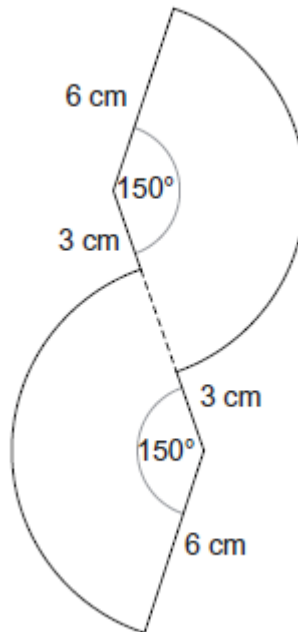   chord   circumference   diameter   radius   tangent

(1)

(Total 3 marks)

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Q5.

This shape is made from two identical sectors.

Not drawn accurately

Work out the perimeter of the shape.
Give your answer in terms of π.

_____

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____ cm

(Total 4 marks)

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Calculator

Q6.

(a)   Draw a circle with **diameter** 12 cm, centre *P*.

•*P*

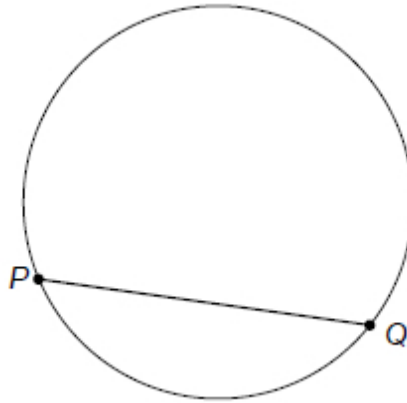**(2)**

(b)   On your circle draw a sector of angle 60°

(2)
(Total 4 marks)

Q7.

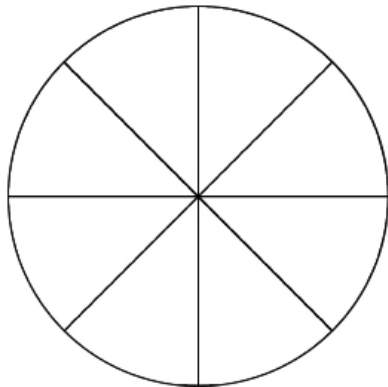Circle the word that describes the straight line PQ.

| chord | diameter | radius | tangent |

Q8.

A wheel is made of a circular rim and 8 spokes as shown.

Not drawn accurately

The length of each spoke is 37 cm

Work out the **total** length of the rim and spokes.
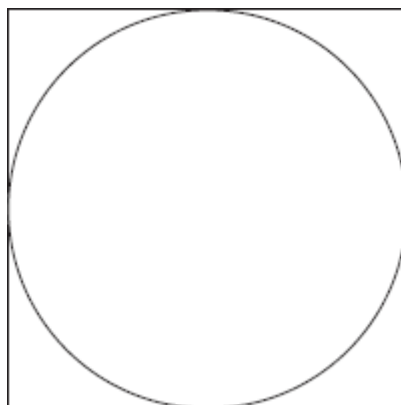
_____

_____

_____

_____

_____

_____

Answer _____ cm

(Total 3 marks)

Q9.

The area of this square is 36 cm²

Not drawn accurately

Work out the circumference of the circle.

_____

_____

_____

_____

_____
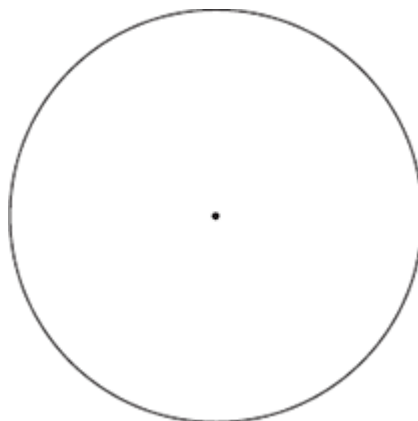
Answer _____ cm

(Total 3 marks)

Q10.

(a)   Measure the radius of this circle in centimetres.

Answer _____ cm

(1)

(b)   Measure or work out the diameter of the circle in centimetres.

_____

Answer _____ cm

(1)

(c)   Write down a formula in words connecting the diameter and the radius.

_____

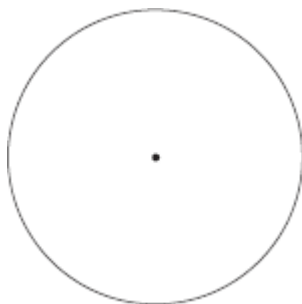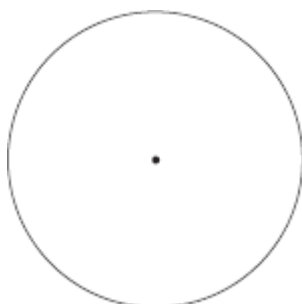**(1)**
(Total 3 marks)

Q11.

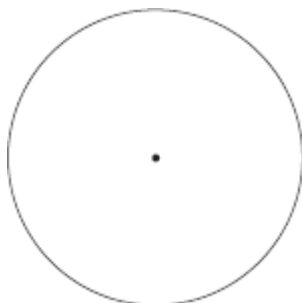Draw the following on the circles below.

(a)   Radius.

(1)

(b)   Chord.

(1)

(c)   Tangent.

(1)
(Total 3 marks)

Q12.

This shape is made from identical quarter circles.

$\longleftarrow$ 7 cm $\longrightarrow$
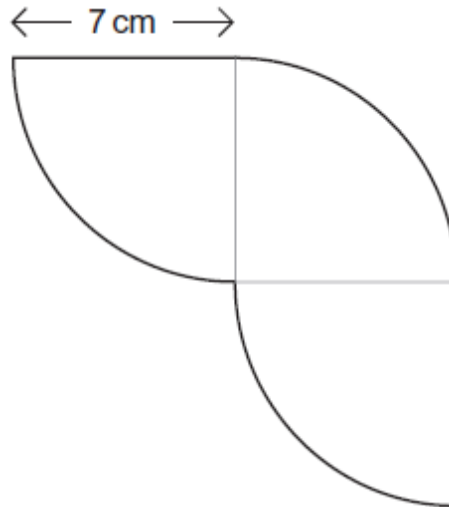
Work out the perimeter of the shape.

_____

_____

_____

_____

_____

_____

Answer _____ cm

(Total 4 marks)

Q13.

Work out the area of a circle of radius 6 m.
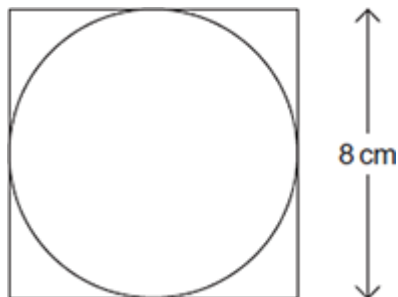
_____

_____

_____

Answer _____ m^2

(Total 2 marks)

Q14.

The diagram shows a circle inside a square.

Not drawn accurately

8 cm

Work out the area of the circle.

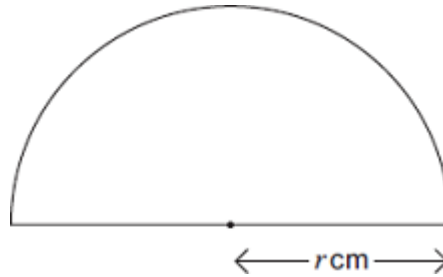_____

_____

_____

_____

Answer _____ cm^2

(Total 3 marks)

Q15.

The diagram shows a semi-circular shape.

Not drawn
accurately

←— r cm —→

(a)   Circle the correct expression for the perimeter of the shape.

$2\pi r$ $\pi r + 2r$ $\frac{1}{2}\pi r^2$ πr

(1)

(b)   The perimeter of the shape is 11.6 cm.

Calculate r.
Give your answer to a suitable degree of accuracy.

_____

_____

_____

_____

_____

_____

_____

Answer _____ cm

(4)
(Total 5 marks)

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Q16.

A circle has radius 9.4 cm.

Not drawn accurately
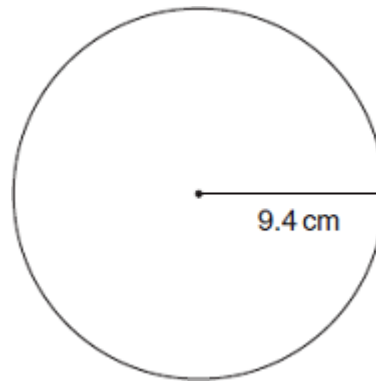
9.4 cm

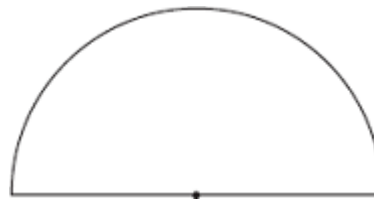(a)   Work out the circumference of the circle.

_____

_____

Answer _____ cm

(2)

(b)   A semicircle has radius 9.4 cm.

Not drawn accurately

Use your answer to part (a) to work out the perimeter of the semicircle.

_____

_____

Answer _____ cm

(2)
(Total 4 marks)

Q17.

On a circle, which of these is the longest?
Circle your answer.

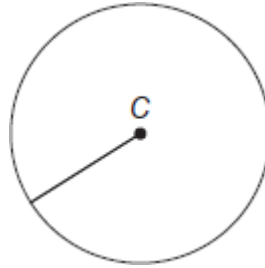chord   circumference   diameter   radius
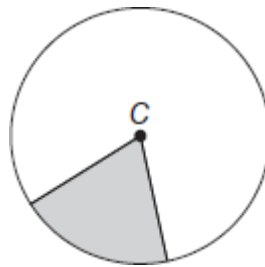
(Total 1 mark)

Q18.

(a) Complete the sentence for this circle, centre *C*.

The straight line from *C* to the circumference is called a _____

(1)

(b) Complete the sentence for this circle, centre *C*.

The shaded area is called a _____

(1)

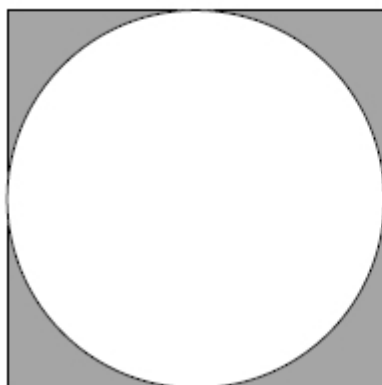(c) Write down a difference between a diameter and any other chord.

_____

_____

(1)
(Total 3 marks)

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Q19.

The diagram shows a circle of radius 7 cm inside a square.

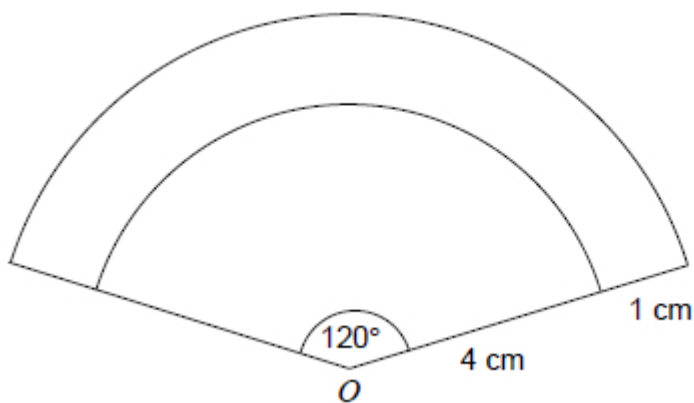

Not drawn accurately

Work out the shaded area.

_____

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____ cm²

(Total 4 marks)

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Q20.

The diagram shows two circular arcs with centre O.

Not drawn
accurately

120°

4 cm

1 cm

O

How much longer is the big arc than the small arc?
Give your answer to 1 decimal place.

_____

_____

_____

_____

_____

_____

Answer _____ cm

(Total 4 marks)

AQA GCSE Maths - Circumference and Area (F)   *PhysicsAndMathsTutor.com*
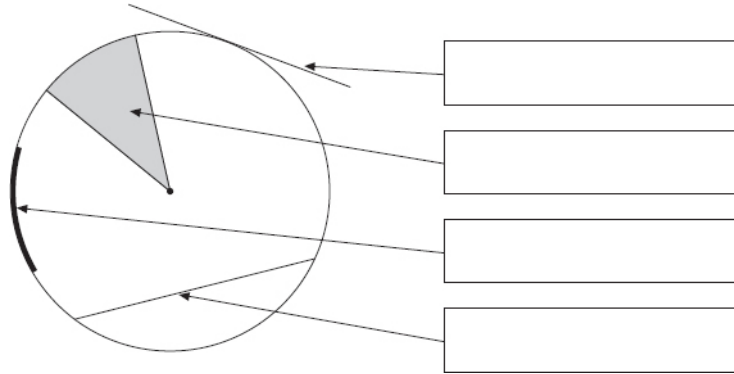
Q21.

Here are six words that are used with circles.

arc   chord   diameter   sector   segment   tangent
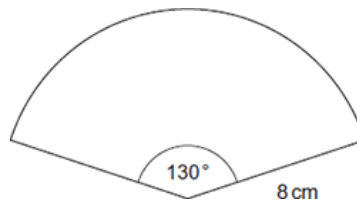
Put the correct word from the list in each box.

(Total 4 marks)

Q22.

The diagram shows a sector of a circle.

Not drawn accurately

130°
8 cm

Work out the area of the sector.
Give your answer to a suitable degree of accuracy.

_____

_____

_____

_____

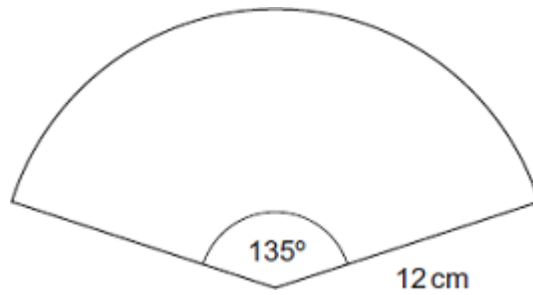_____

_____

_____

_____

Answer _____ cm^2

(Total 4 marks)

Q23.

The diagram shows a sector of a circle, radius 12 cm.

Not drawn
accurately

135°

12 cm

Show that the perimeter of the sector is greater than 52 cm.

_____

_____

_____

_____

_____

_____

_____

_____

_____

(Total 3 marks)

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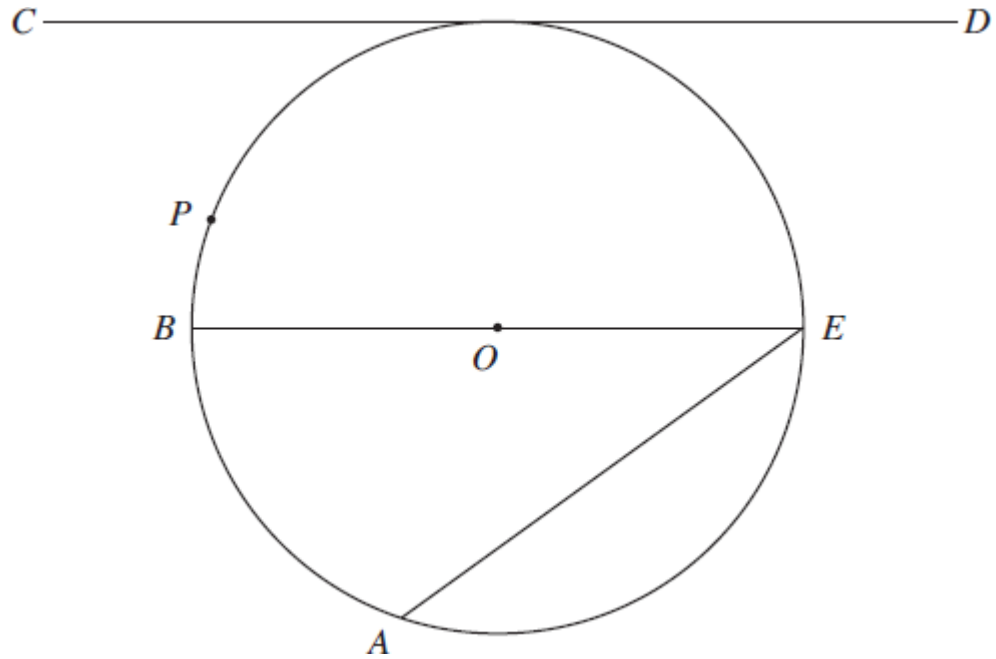
Q24.

O is the centre of the circle.

Here are five words.

circumference   chord   tangent   diameter   radius

Choose a word to complete each of these sentences.
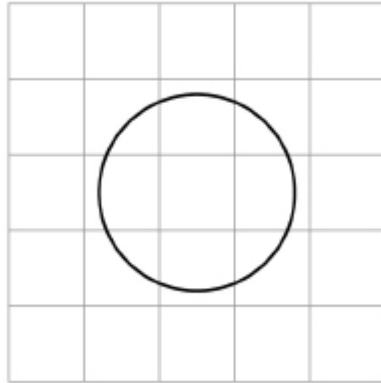
BE is a_____

Point P lies on the_____

CD is a_____

AE is a_____

(Total 4 marks)

Q25.

A circle is drawn on a centimetre grid.

(a)   Draw a tangent to the circle.

(1)

(b)   Grace works out that the area of the circle is more than 9 cm^2

Why must this be wrong?

_____

_____

_____

_____

_____

_____

(1)
(Total 2 marks)