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- 8 From point A , Stanley walks 200 m due east to point B .
From B , he then walks 160 m due south to point C .

Work out the length of AC .

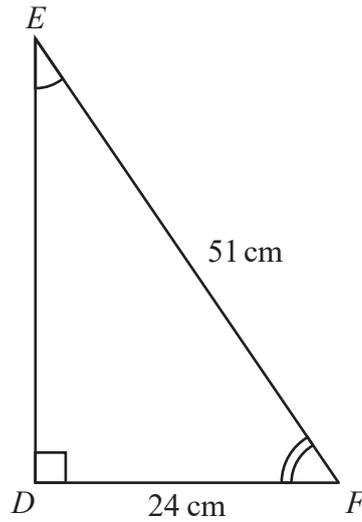
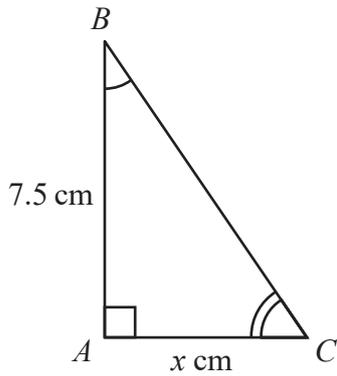
Give your answer correct to 3 significant figures.

.....metres

(Total for Question 8 is 3 marks)



10 Here are two similar triangles.



Diagrams **NOT** accurately drawn

Work out the value of x
Show your working clearly.

$x = \dots\dots\dots$

(Total for Question 10 is 5 marks)

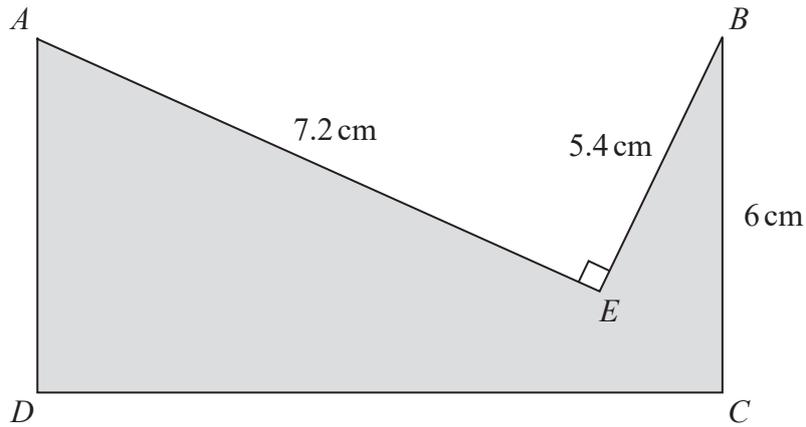
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- 5 The diagram shows a shaded shape $AEBCD$ made by removing triangle AEB from rectangle $ABCD$



$AE = 7.2 \text{ cm}$ $BE = 5.4 \text{ cm}$ $BC = 6 \text{ cm}$ $\text{angle } AEB = 90^\circ$

Work out the perimeter of the shaded shape.

..... cm

(Total for Question 5 is 4 marks)

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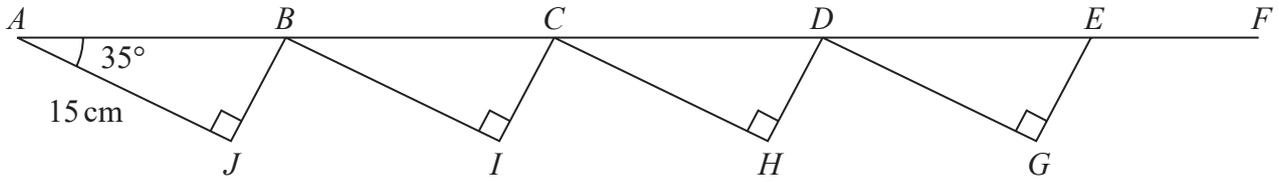
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- 13 The diagram shows four congruent right-angled triangles ABJ , BCI , CDH and DEG .
The diagram also shows the straight line $ABCDEF$.

Diagram NOT accurately drawn



$AJ = 15 \text{ cm}$
Angle $BAJ = 35^\circ$

$AF = 80 \text{ cm}$

Work out the length of EF .
Give your answer correct to 3 significant figures.

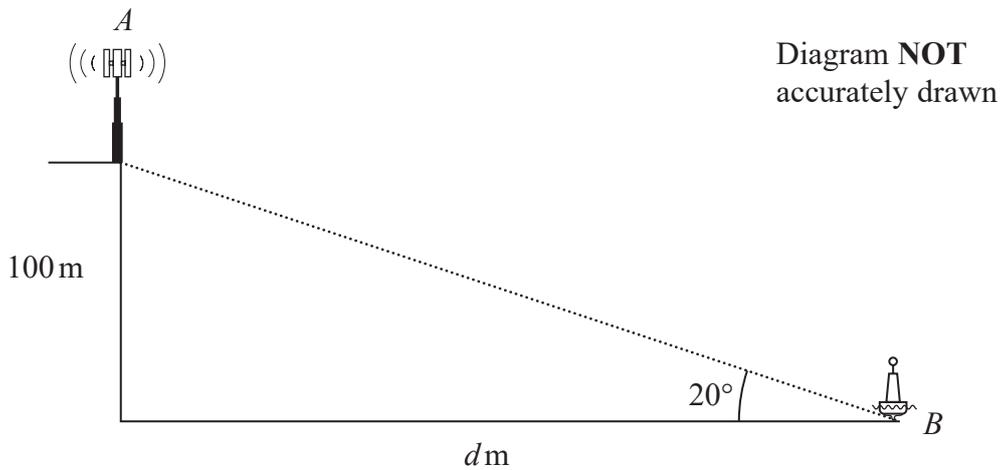
..... cm

(Total for Question 13 is 5 marks)

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- 12 The diagram shows a vertical cliff with a vertical radio mast on top of the cliff and a buoy in the sea.



The height of the cliff is 100 metres.
 The buoy is at the point B that is d metres from the base of the cliff.
 The angle of elevation from B to the top of the cliff is 20°

- (a) Calculate the value of d .
 Give your answer correct to 3 significant figures.

$$d = \dots\dots\dots (3)$$

The point A at the top of the radio mast is vertically above the top of the cliff.
 The angle of elevation from B to A is 25°

- (b) Calculate the height of the radio mast.
 Give your answer correct to 3 significant figures.

$$\dots\dots\dots \text{ m} (3)$$

(Total for Question 12 is 6 marks)

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12 The diagram shows two vertical phone masts, AB and CD , on horizontal ground.

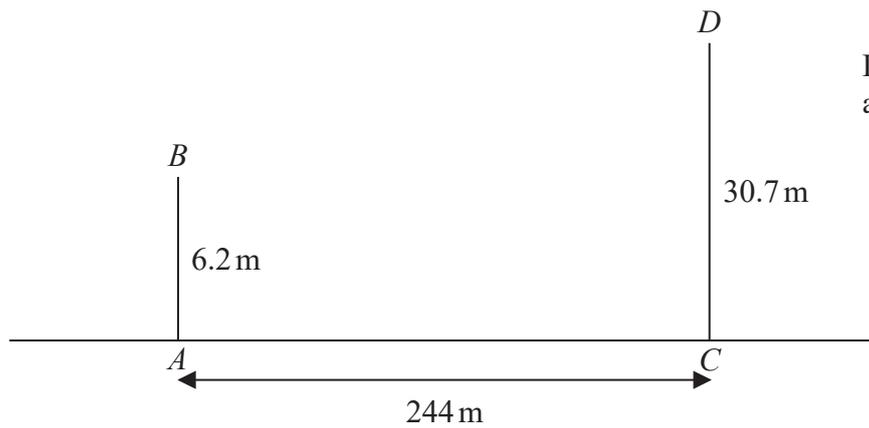


Diagram NOT accurately drawn

$$AB = 6.2\text{ m} \quad AC = 244\text{ m} \quad CD = 30.7\text{ m}$$

Work out the size of the angle of depression of B from D
Give your answer correct to one decimal place.

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(Total for Question 12 is 3 marks)



- 13 The diagram shows two hot air balloons.
 A is a point on the base of one of the balloons and B is a point on the base of the other balloon.

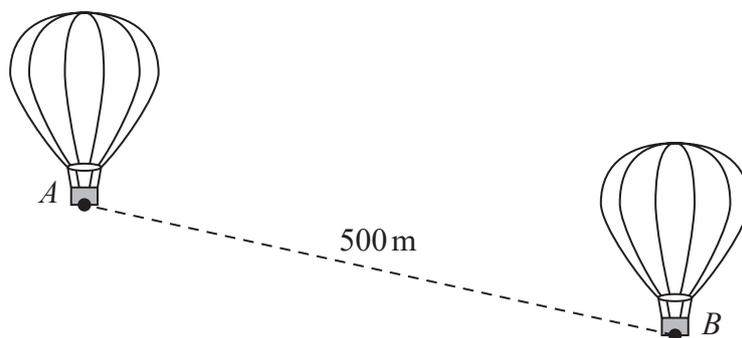


Diagram NOT accurately drawn

The distance between A and B is 500 metres.
The angle of depression of B from A is 23°

Calculate the vertical height of A above B .
Give your answer correct to one decimal place.

..... metres

(Total for Question 13 is 3 marks)

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7 The diagram shows a trapezium.

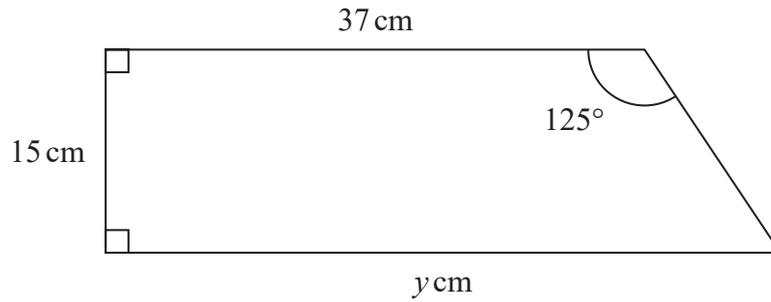


Diagram **NOT** accurately drawn

Work out the value of y .
Give your answer correct to 1 decimal place.

$y = \dots\dots\dots$

(Total for Question 7 is 4 marks)

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- 10 The diagram shows one face of a wall.
This face is in the shape of a pentagon with exactly one line of symmetry.

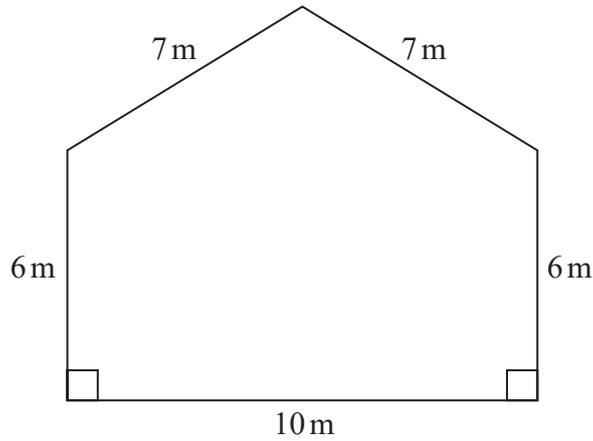


Diagram NOT accurately drawn

Omondi is going to paint this face of the wall once.
He has to buy all the paint that he needs to use.

The paint in each tin of paint Omondi is going to buy will cover 16 m^2 of the face of the wall.

Work out the least number of tins of paint Omondi will need to buy.
Show your working clearly.

(Total for Question 10 is 5 marks)



- 11 The diagram shows trapezium $ABCD$ in which BC and AD are parallel.

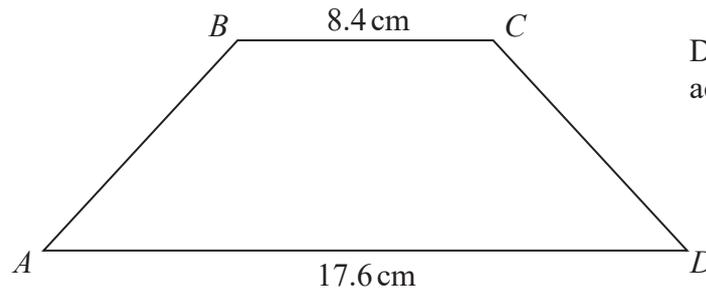


Diagram **NOT** accurately drawn

The trapezium has exactly one line of symmetry.

$$BC = 8.4\text{ cm}$$

$$AD = 17.6\text{ cm}$$

The trapezium has area 179.4 cm^2

Work out the size of angle ABC .

Give your answer correct to 1 decimal place.

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(Total for Question 11 is 6 marks)



12 $ABCD$ is a trapezium.

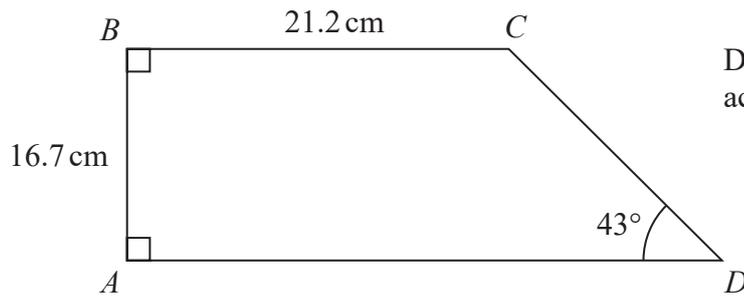


Diagram **NOT** accurately drawn

Calculate the perimeter of the trapezium.
Give your answer correct to 3 significant figures.

.....cm

(Total for Question 12 is 4 marks)

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10 The diagram shows a hexagon $ABCDEF$

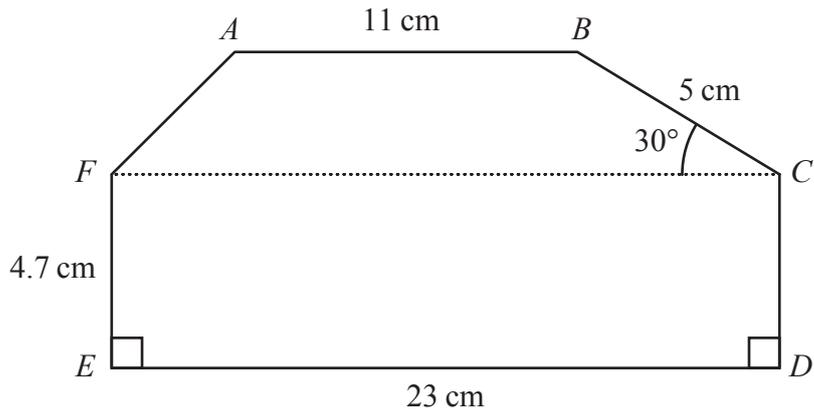


Diagram **NOT** accurately drawn

Angle $BCF = 30^\circ$
 AB, FC and ED are parallel.

Calculate the area of $ABCDEF$
 Show your working clearly.

..... cm^2

(Total for Question 10 is 5 marks)



P 7 3 4 7 0 A 0 1 1 3 2

14 A zip wire is shown as the dashed line AC in the diagram.

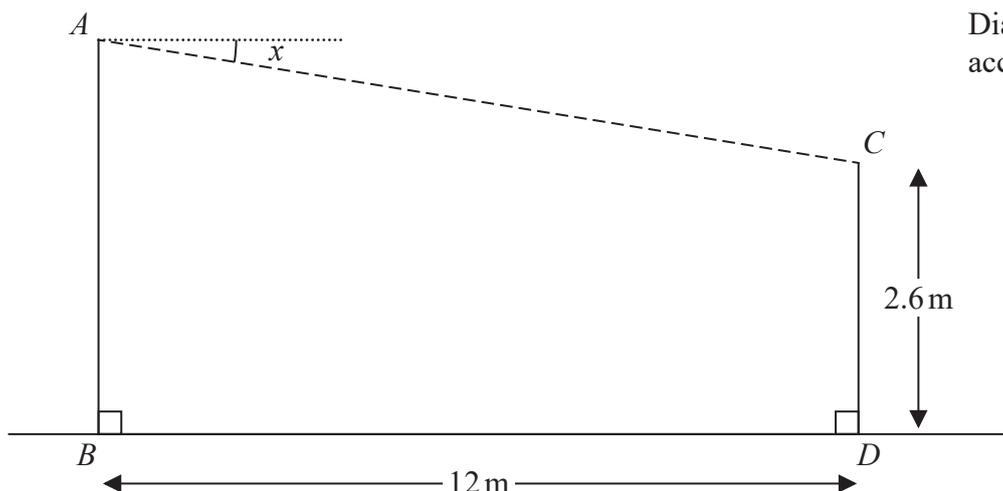


Diagram NOT accurately drawn

The zip wire is supported by two vertical posts AB and CD standing on horizontal ground.

$$CD = 2.6\text{ m} \quad BD = 12\text{ m}$$

The zip wire makes an angle x with the horizontal, as shown in the diagram. The design of the zip wire requires the angle x to be at least 5°

Work out the least possible height of the post AB
Give your answer correct to 3 significant figures.

..... m

(Total for Question 14 is 3 marks)

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10 $ABCD$ is a trapezium.

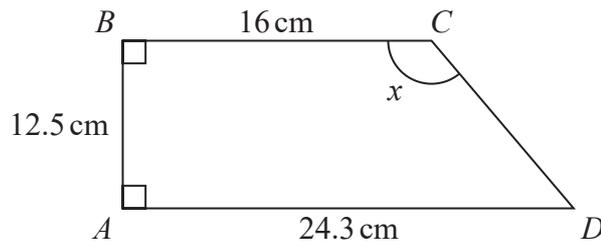


Diagram **NOT** accurately drawn

Work out the size of angle x .
Give your answer correct to 1 decimal place.

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(Total for Question 10 is 4 marks)



19 $ABCD$ is a horizontal rectangular field.

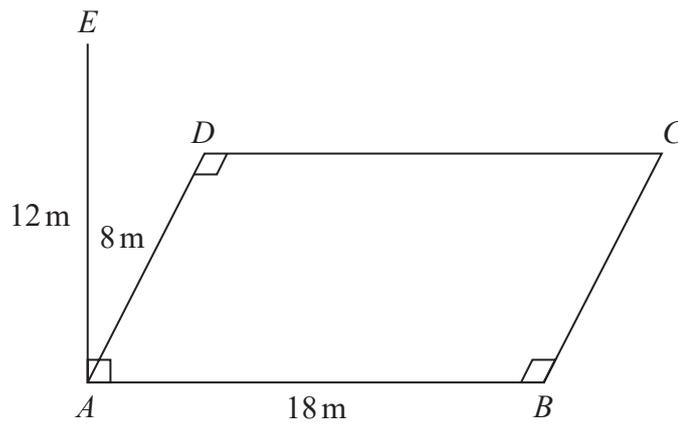


Diagram **NOT** accurately drawn

A vertical pole, AE , is placed at the corner A of the field.

$$AE = 12\text{ m} \quad AB = 18\text{ m} \quad AD = 8\text{ m}$$

Calculate the size of the angle between EC and the plane $ABCD$
 Give your answer correct to one decimal place.

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(Total for Question 19 is 3 marks)



- 4 The diagram shows a shape made up of three semicircles, enclosing a right-angled triangle.

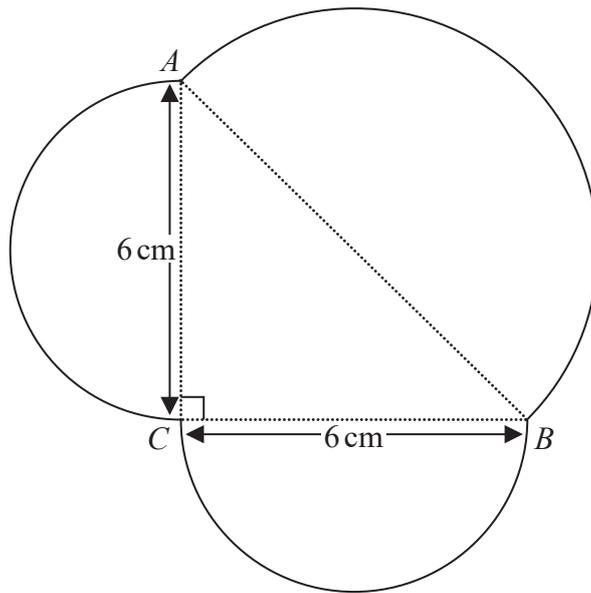


Diagram NOT accurately drawn

AB , BC and CA are each the diameter of a semicircle.

$BC = CA = 6$ cm.

Work out the perimeter of the shape.
Give your answer correct to one decimal place.

..... cm

(Total for Question 4 is 5 marks)

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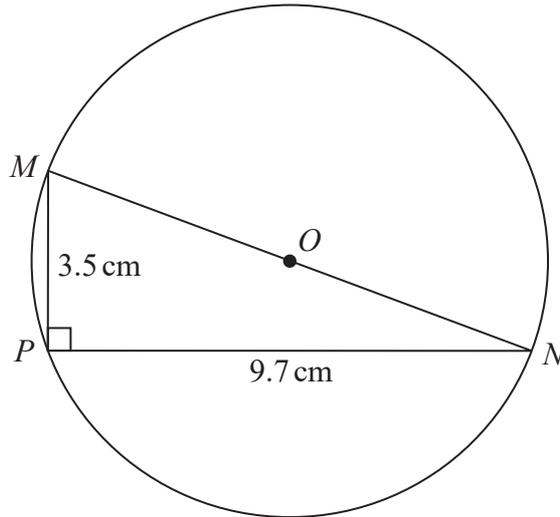
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6

Diagram **NOT** accurately drawn



M , N and P are points on a circle, centre O .
 MON is a diameter of the circle.

$MP = 3.5$ cm
 $PN = 9.7$ cm

Angle $MPN = 90^\circ$

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

..... cm

(Total for Question 6 is 4 marks)

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8 A , B and C are points on a circle with centre O .

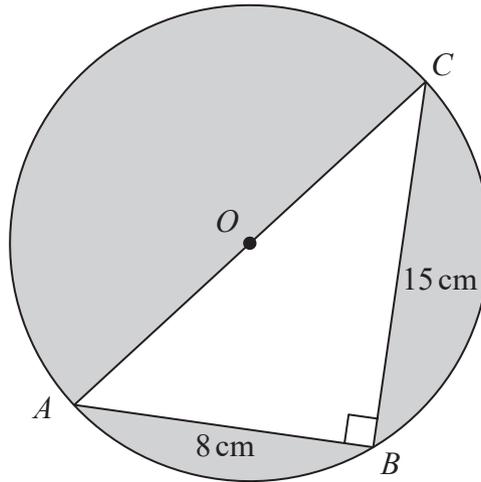


Diagram NOT accurately drawn

AOC is a diameter of the circle.

$AB = 8\text{ cm}$ $BC = 15\text{ cm}$

Angle $ABC = 90^\circ$

Work out the total area of the regions shown shaded in the diagram.
Give your answer correct to 3 significant figures.

..... cm^2

(Total for Question 8 is 5 marks)

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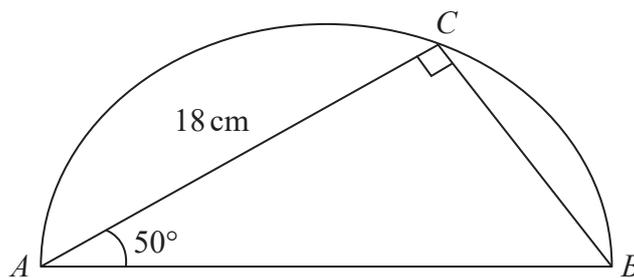
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8 The diagram shows a triangle ABC inside a semicircle.

Diagram **NOT** accurately drawn



A , B and C are points on the semicircle.

AB is the diameter of the semicircle.

Angle $ACB = 90^\circ$

Angle $BAC = 50^\circ$

$AC = 18$ cm

Work out the perimeter of the semicircle.

Give your answer correct to 2 significant figures.

..... cm

(Total for Question 8 is 5 marks)

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9 In the diagram, ABC is a right-angled triangle and DEF is a semicircular arc.

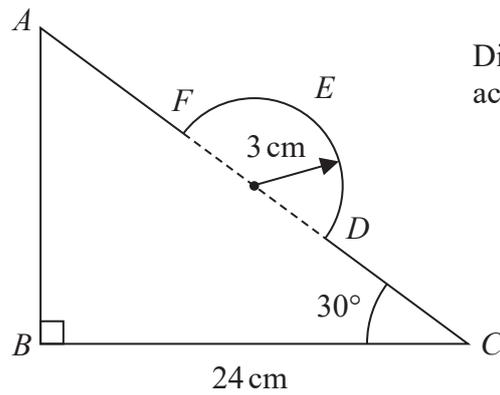


Diagram NOT accurately drawn

In triangle ABC

$BC = 24 \text{ cm}$ angle $ABC = 90^\circ$ angle $BCA = 30^\circ$

The points D and F lie on AC so that DF is the diameter of the semicircular arc DEF
 The radius of the semicircular arc is 3 cm.

Work out the length of $AFEDC$
 Give your answer correct to 2 significant figures.

..... cm

(Total for Question 9 is 5 marks)

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- 9 The diagram shows a shape made from a right-angled triangle and a semicircle.

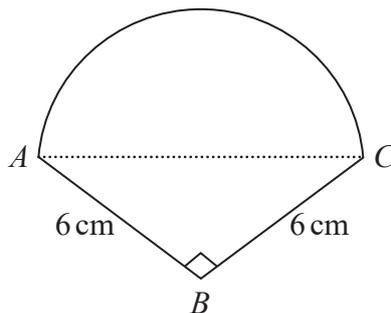


Diagram **NOT** accurately drawn

AC is the diameter of the semicircle.

$BA = BC = 6 \text{ cm}$

Angle $ABC = 90^\circ$

Work out the area of the shape.

Give your answer correct to 1 decimal place.

..... cm^2

(Total for Question 9 is 5 marks)

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10 R and T are points on a circle, centre O

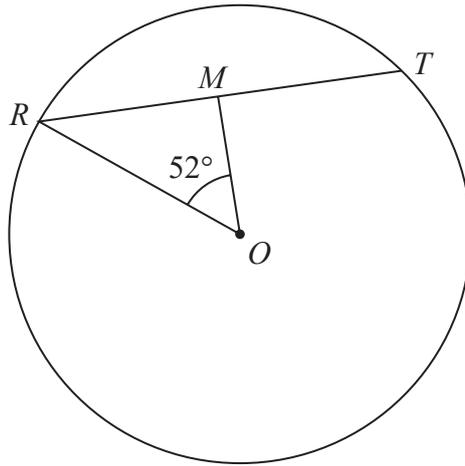


Diagram NOT accurately drawn

$RT = 12$ cm
 M is the midpoint of RT
 Angle $ROM = 52^\circ$

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

..... cm²

(Total for Question 10 is 4 marks)

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- 11 The diagram shows a shaded shape $ABCD$ made from a semicircle ABC and a right-angled triangle ACD .

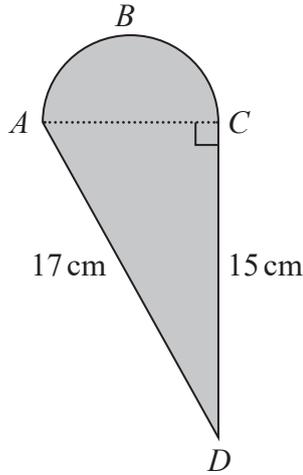


Diagram NOT accurately drawn

AC is the diameter of the semicircle ABC .

Work out the perimeter of the shaded shape.
Give your answer correct to 3 significant figures.

..... cm

(Total for Question 11 is 5 marks)

