

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

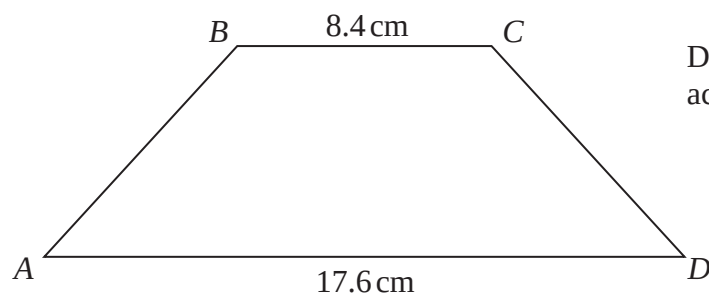


Diagram **NOT**
accurately drawn

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.

.....
(Total for Question 1 is 6 marks)

- 2 The diagram shows an isosceles triangle.

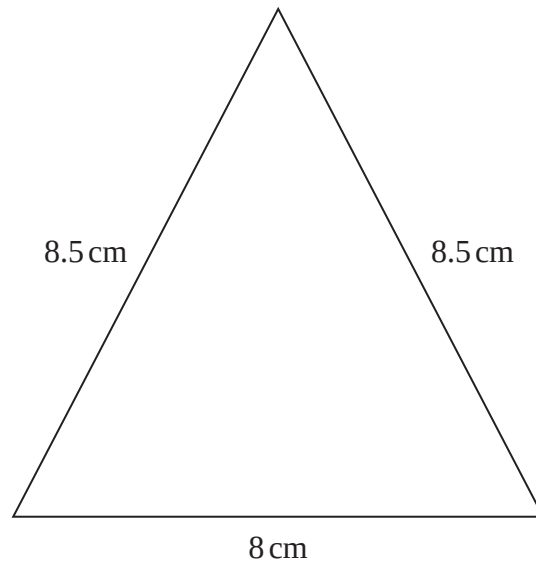


Diagram **NOT**
accurately drawn

Work out the area of the triangle.

.....cm²

(Total for Question 2 is 4 marks)

- 3 The diagram shows Yuen's garden.

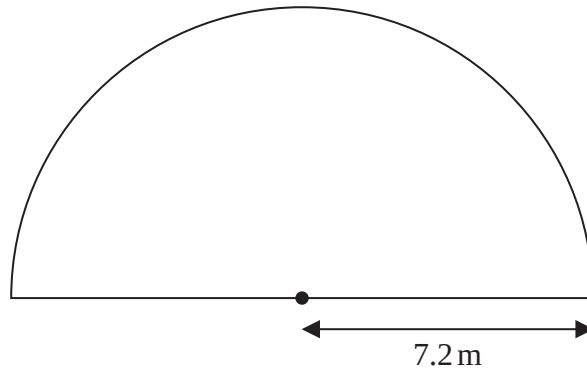


Diagram **NOT**
accurately drawn

The garden is in the shape of a semicircle of radius 7.2 m.
Yuen is going to cover his garden with grass seed.

Yuen has 12 boxes of grass seed.

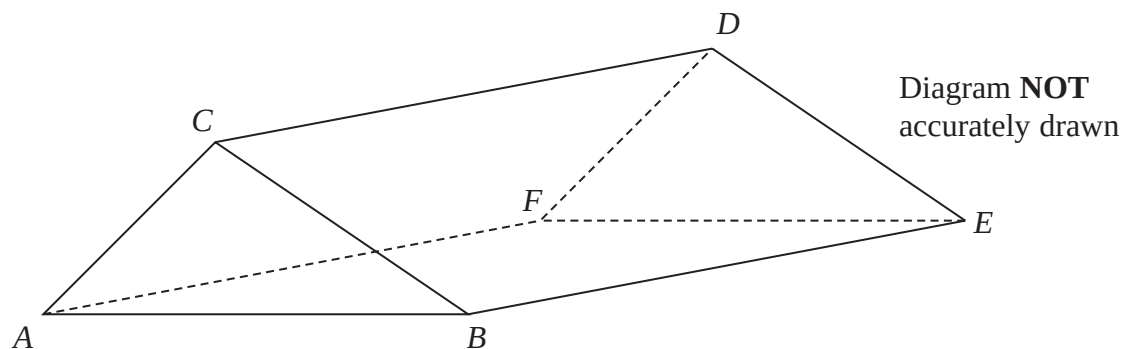
Each box of grass seed contains enough seed to cover 6 m^2 of the garden.

Has Yuen enough grass seed for his garden?

Show your working clearly.

(Total for Question 3 is 3 marks)

- 4 The diagram shows the prism $ABCDEF$ with cross section triangle ABC .



Angle $BEC = 40^\circ$ and angle ACB is obtuse.
 $AC = 6\text{ cm}$ and $CE = 13\text{ cm}$

The area of triangle ABC is 22 cm^2

Calculate the length of AB .

Give your answer correct to one decimal place.

..... cm

(Total for Question 4 is 6 marks)

- 5 The diagram shows a box in the shape of a cuboid.

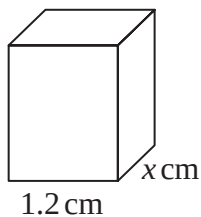


Diagram **NOT**
accurately drawn

The box is put on a table.

The face of the box in contact with the table has length 1.2 metres and width x metres.

The force exerted by the box on the table is 27 newtons.

The pressure on the table due to the box is 30 newtons/m²

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Work out the value of x .

$x =$

(Total for Question 5 is 3 marks)

6 L_1 and L_2 are two straight lines.

The origin of the coordinate axes is O .

L_1 has equation $5x + 10y = 8$

L_2 is perpendicular to L_1 and passes through the point with coordinates $(8, 6)$

L_2 crosses the x -axis at the point A .

L_2 intersects the straight line with equation $x = -3$ at the point B .

Find the area of triangle AOB .

Show your working clearly.

.....

(Total for Question 6 is 5 marks)

7 The area of a rectangle is 18 cm^2

The length of the rectangle is $(\sqrt{7} + 1) \text{ cm}$.

Without using a calculator and showing each stage of your working,

find the width of the rectangle.

Give your answer in the form $a\sqrt{b} + c$ where a , b and c are integers.

..... cm

(Total for Question 7 is 3 marks)

- 8 The diagram shows a rectangle $ABCD$ and a semicircle with diameter AB where $AB = 12$ cm. The point E lies on DC and also on the semicircle.

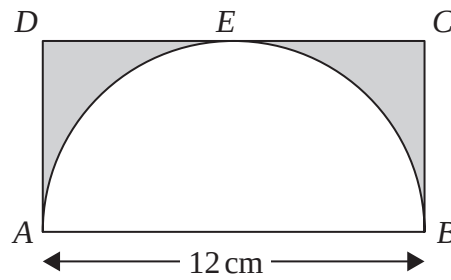


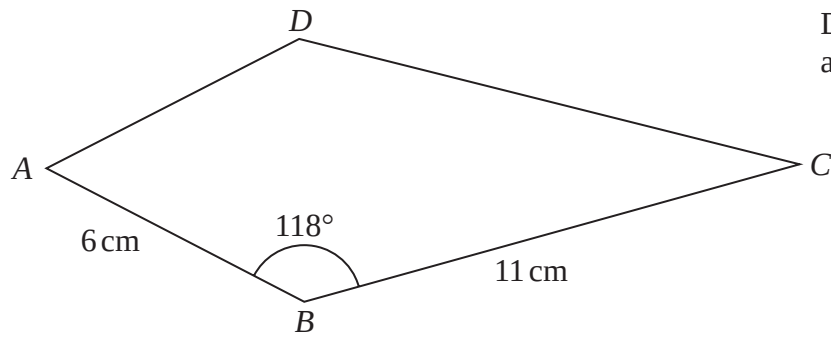
Diagram **NOT**
accurately drawn

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

..... cm^2

(Total for Question 8 is 3 marks)

9 The diagram shows a kite $ABCD$



$$AB = 6 \text{ cm}$$

$$BC = 11 \text{ cm}$$

$$\text{Angle } ABC = 118^\circ$$

Calculate the area of the kite.

Give your answer correct to 3 significant figures.

..... cm^2

(Total for Question 9 is 3 marks)

10 The diagram shows isosceles triangle ABC

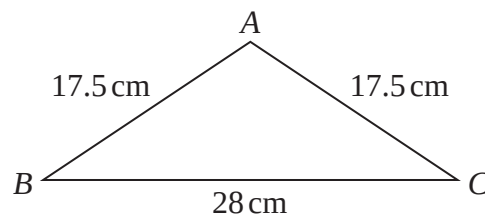


Diagram **NOT**
accurately drawn

$$AB = AC = 17.5 \text{ cm}$$

$$BC = 28 \text{ cm}$$

Calculate the area of triangle ABC

..... cm^2

(Total for Question 10 is 4 marks)

11 The diagram shows a circle with centre O

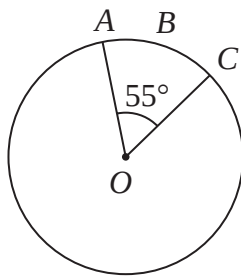


Diagram **NOT**
accurately drawn

A , B and C are points on the circle so that the length of the arc ABC is 5 cm.

Given that angle $AOC = 55^\circ$

work out the area of the circle.

Give your answer correct to one decimal place.

..... cm^2

(Total for Question 11 is 4 marks)

12 The diagram shows triangle PQR

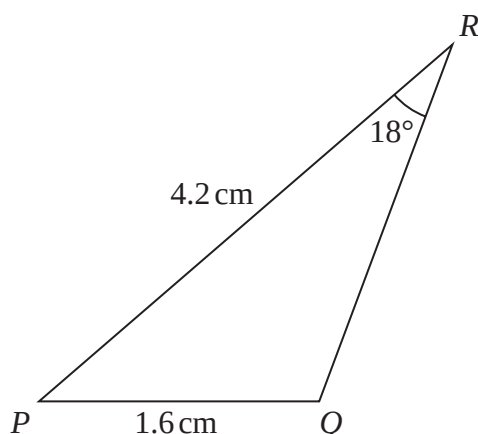


Diagram **NOT**
accurately drawn

$$PQ = 1.6 \text{ cm}$$

$$PR = 4.2 \text{ cm}$$

$$\text{Angle } PRQ = 18^\circ$$

Given that angle PQR is obtuse,

work out the area of triangle PQR

Give your answer correct to 3 significant figures.

..... cm^2

(Total for Question 12 is 6 marks)

- 13 The diagram shows an isosceles triangle ABC

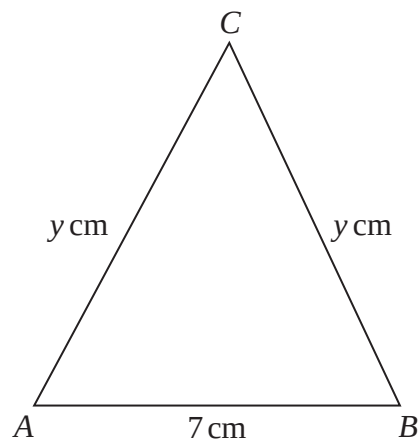


Diagram **NOT**
accurately drawn

$$AB = 7 \text{ cm} \quad AC = BC = y \text{ cm}$$

The area of the triangle is 42 cm^2

Work out the value of y

$$y = \dots\dots\dots$$

(Total for Question 13 is 4 marks)

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

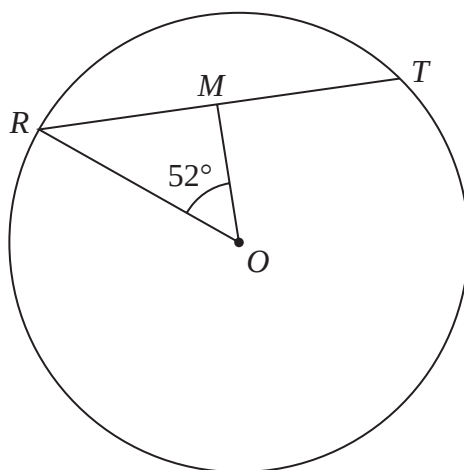


Diagram **NOT**
accurately drawn

$$RT = 12 \text{ cm}$$

M is the midpoint of RT

$$\text{Angle } ROM = 52^\circ$$

Work out the area of the circle.

Give your answer correct to 3 significant figures.

..... cm^2

(Total for Question 14 is 4 marks)

15

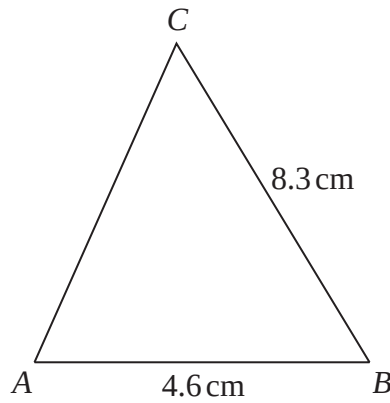


Diagram **NOT**
accurately drawn

$AB = 4.6 \text{ cm}$ $BC = 8.3 \text{ cm}$ angle ABC is acute

The area of triangle ABC is 12 cm^2

Work out the perimeter of triangle ABC
Give your answer correct to 3 significant figures.

..... cm

(Total for Question 15 is 5 marks)

16 The diagram shows an isosceles triangle, with base length 24 cm.

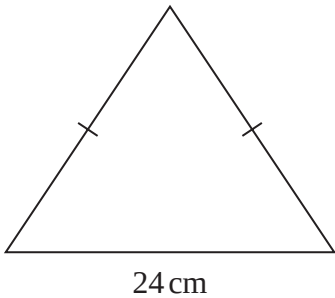


Diagram **NOT** accurately drawn

The perimeter of the triangle is 54 cm.
Work out the area of the triangle.

..... cm²

(Total for Question 16 is 5 marks)

- 17 A field is in the shape of a trapezium.

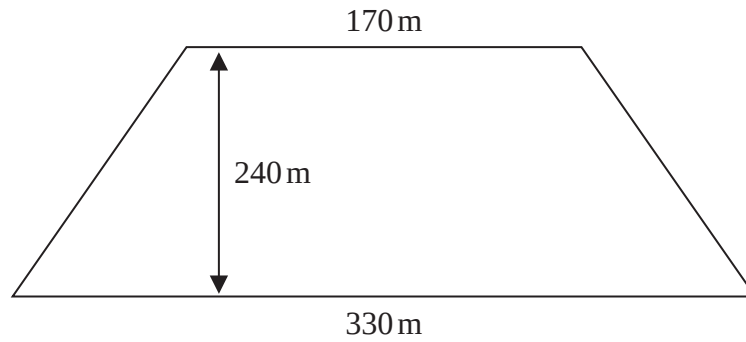


Diagram **NOT**
accurately drawn

The field is sold for a price of \$49 650

Given that 1 hectare = 10 000 m²

work out the average price of the field per hectare.

\$.....

(Total for Question 17 is 4 marks)