

8300

GCSE MATHEMATICS

Foundation and Higher tier – Questions by Topic

Geometry

Area and perimeter – Finding the area of trapeziums

v1.0

Name _____

Materials

For this paper you must have:

- Mathematical instruments

Information

- The marks for questions are shown in brackets

Advice

- In all calculations, show clearly how you work out your answer

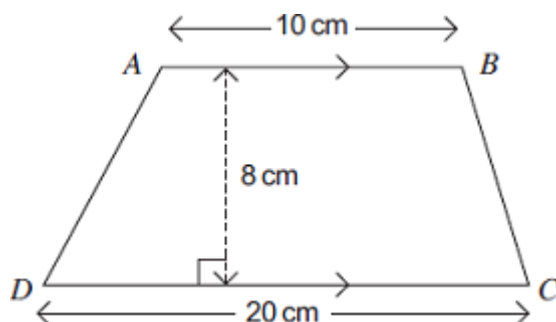
For question 1, you must **NOT** use a calculator.



Q1.

$ABCD$ is a trapezium.

Not drawn accurately



Calculate the area of $ABCD$.
State the units of your answer.

(Total 3 marks)

Area and perimeter – Finding the area of trapeziums – Cross topic questions

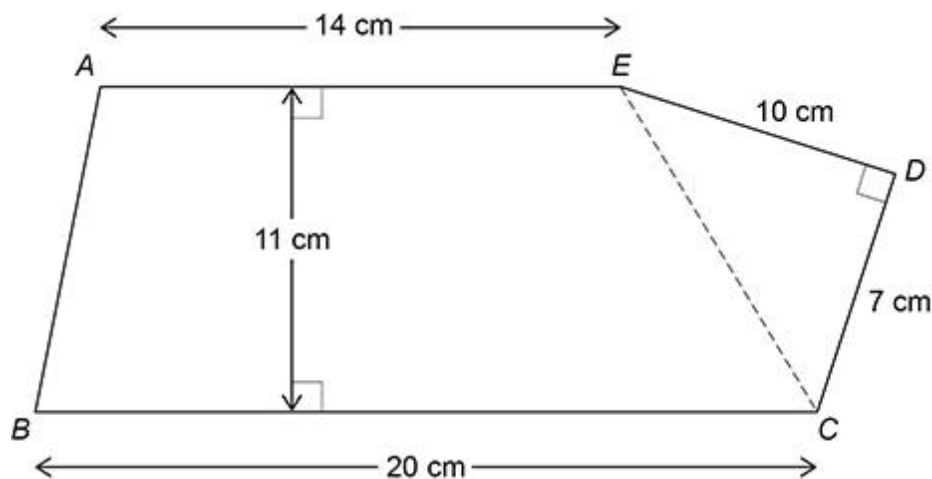
For the rest of the questions, you may use a calculator.



Q2.

$ABCDE$ is a pentagon.

Not drawn accurately



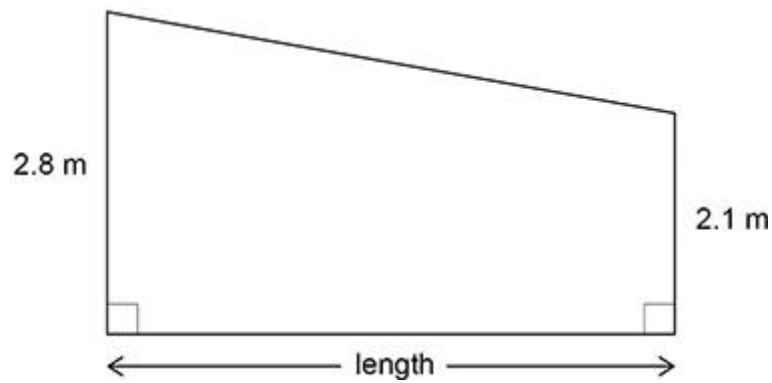
Work out the area of the pentagon.

(Total 3 marks)

Q3.

The diagram shows a wall.

Not drawn accurately



The area of the wall is 39.2 m^2
Work out the length of the wall.

(Total 3 marks)

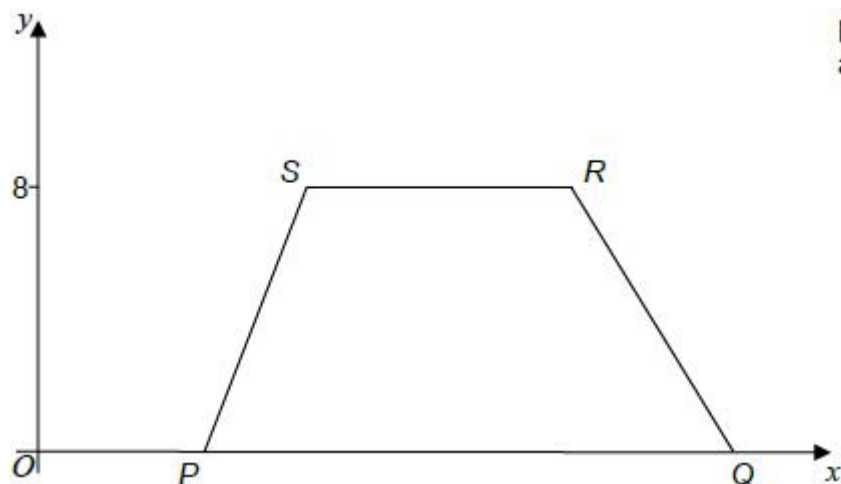
Q4.

$PQRS$ is a trapezium with PQ parallel to SR .

P and Q are on the x -axis.

The y -coordinate of S is 8

$PQ > SR$



Not drawn
accurately

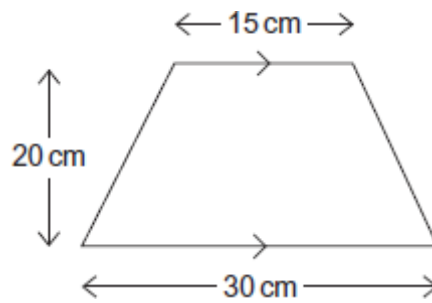
The area of $PQRS$ is 48 square units.
Work out one possible set of points for P , Q , R and S .

(Total 4 marks)

Q5.

The diagram shows a trapezium.

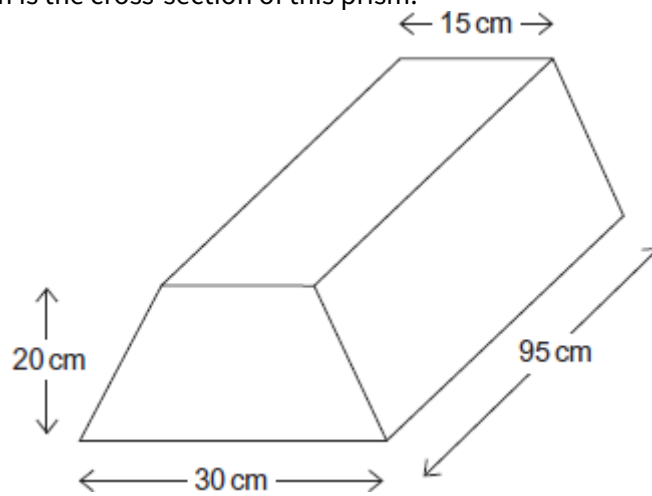
Not drawn accurately



(a) Work out the area of the trapezium.

(2)

(b) The trapezium is the cross-section of this prism.



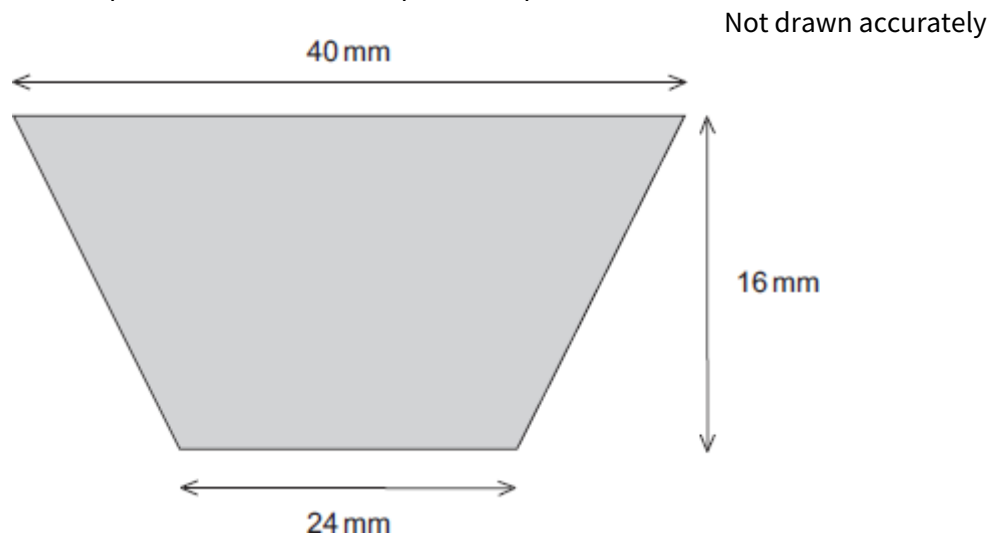
Work out the volume of the prism.

(2)

(Total 4 marks)

Q6.

- (a) A jeweller has a piece of silver in the shape of a trapezium.

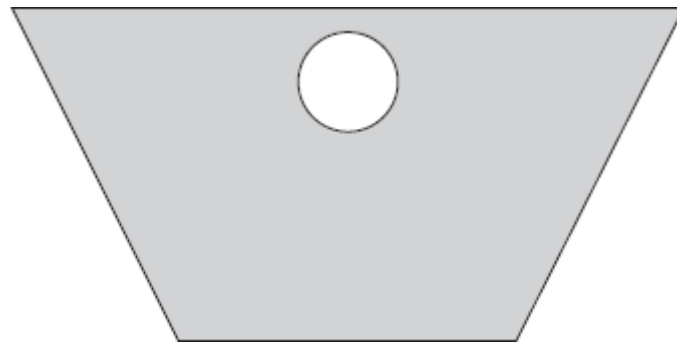


Work out the area of the trapezium.

(2)

- (b) She cuts out a circle of radius 4 mm from the trapezium to make a pendant.

Not drawn accurately



Work out the area of the circle.

(2)

- (c) The silver from the circle is waste material.
What percentage of silver does the jeweller waste making the pendant?

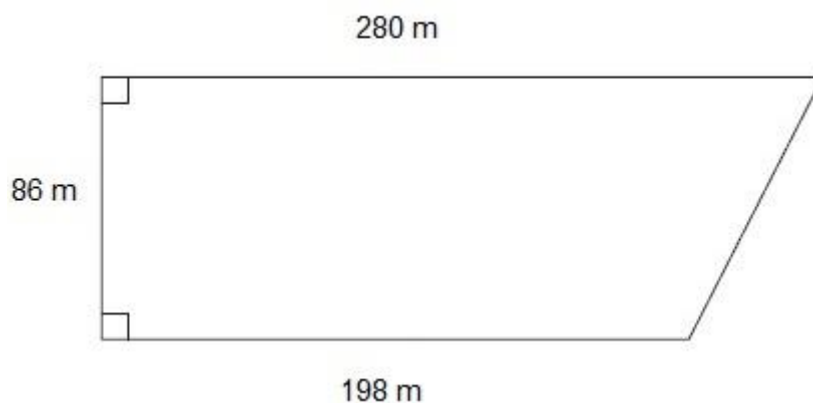
(2)

(Total 6 marks)

Q7.

The diagram shows a field.

Not drawn accurately



- (a) Work out the area of the field.

(2)

- (b) 1 acre = 4047 square metres
A farmer keeps cows in the field.

He is allowed 7 cows per acre.

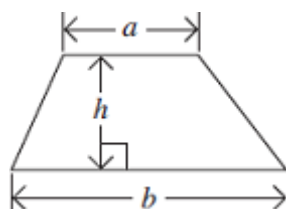
Work out the maximum number of cows he is allowed to put in the field.

(4)

(Total 6 marks)

Q8.

In the trapezium, $a = 6.5$ m, $b = 8.3$ m and $h = 3.2$ m

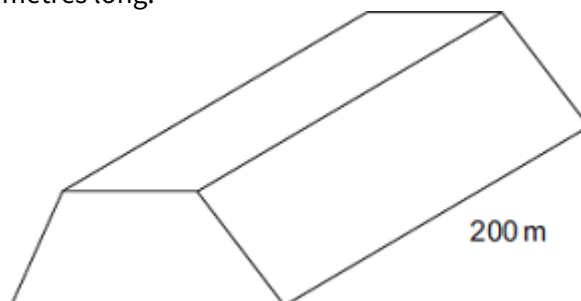


Not drawn accurately

- (a) Work out the area of the trapezium.

(2)

- (b) The trapezium is the cross-section of a tunnel.
The tunnel is 200 metres long.



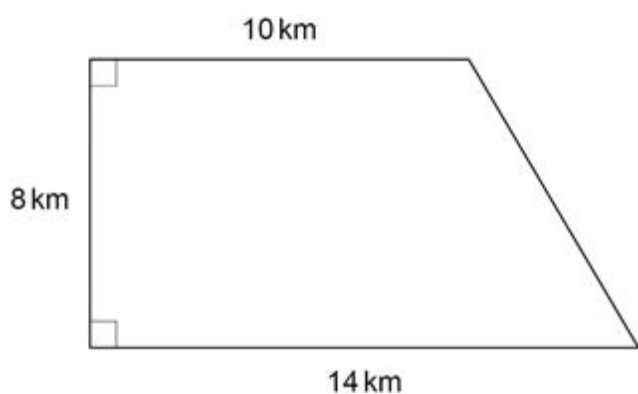
Work out the volume of the tunnel.

(2)

(Total 4 marks)

Q9.

The boundaries of a city form a trapezium.



Not drawn accurately

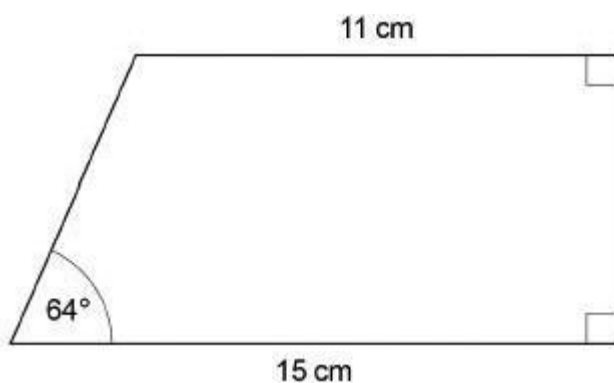
$$\text{Population density} = \frac{\text{number of people}}{\text{area}}$$

The population density of the city is 9450 people per square kilometre.
Work out the number of people who live in the city.

(Total 4 marks)

Q10.

Work out the area of the trapezium.

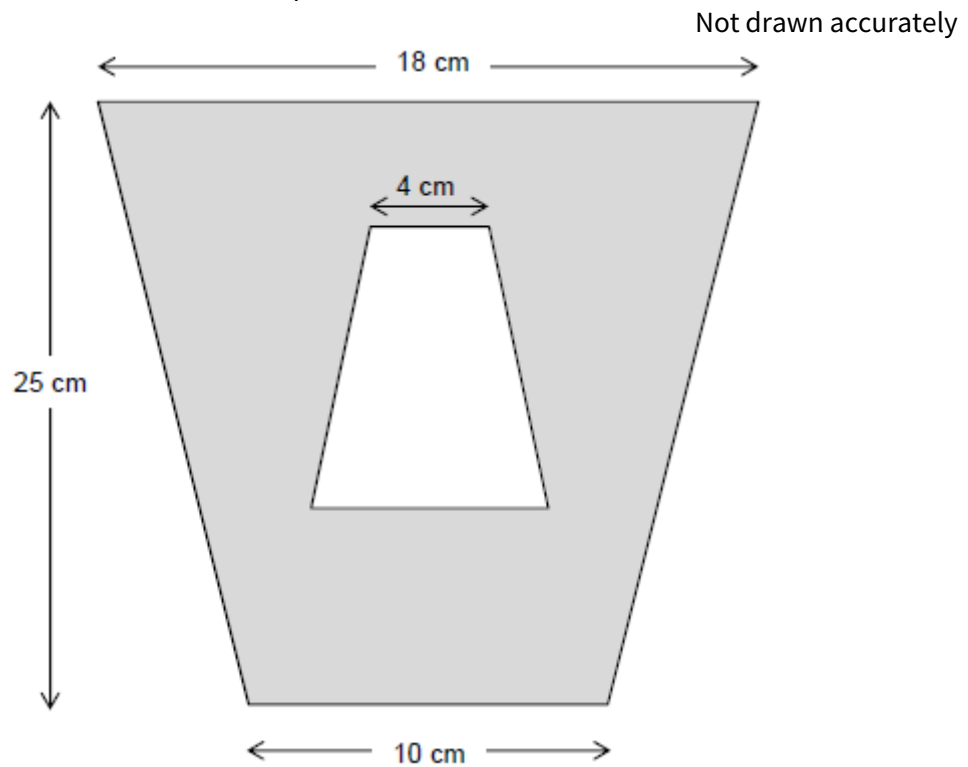


Not drawn accurately

(Total 4 marks)

Q11.

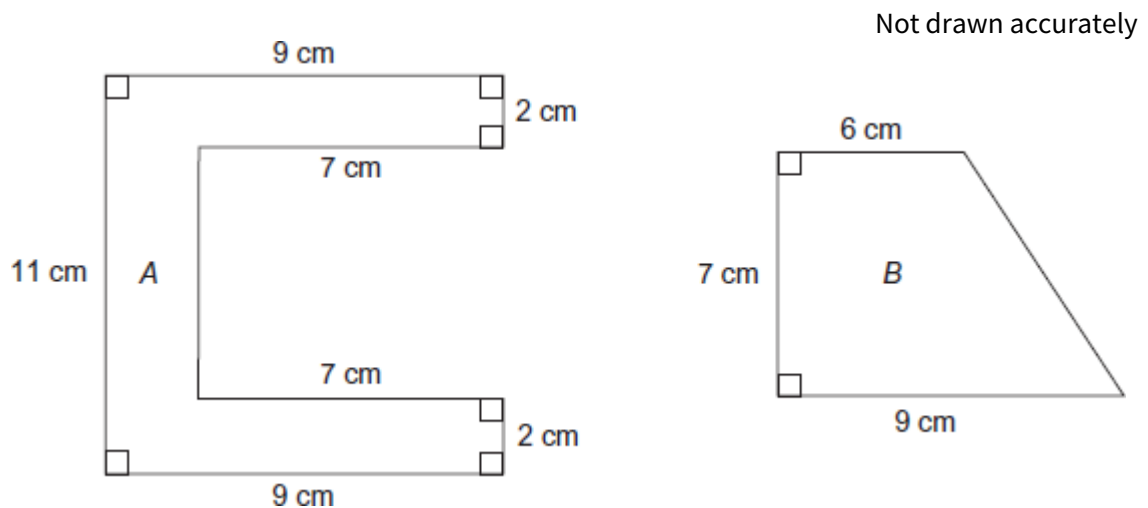
A pattern is made from two **similar** trapeziums.



Show that the shaded area is 294 cm^2

(Total 4 marks)

Q12.



Which shape has the greater **area** and by how much?
You **must** show your working.

(Total 5 marks)