

Name: _____

GCSE Unit 12 Practice Assessment

Date: _____

Time: 40 minutes

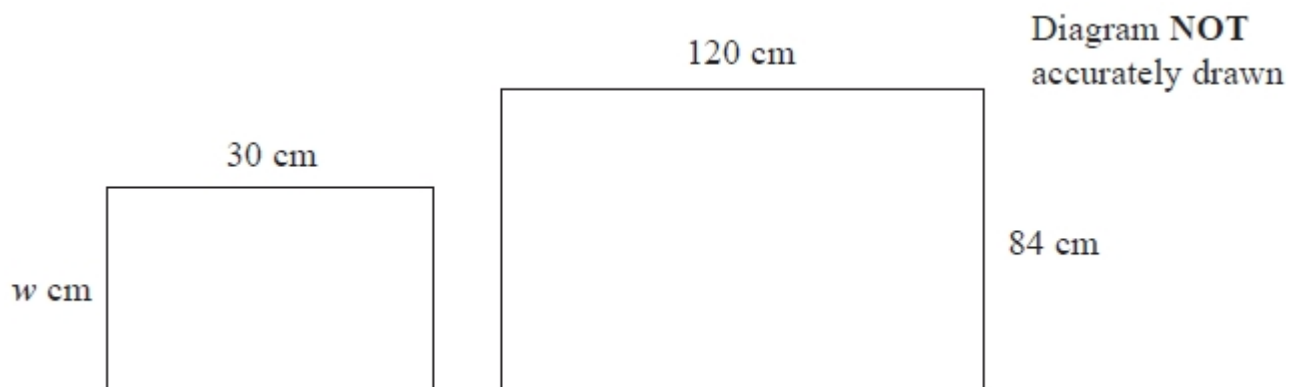
Total marks available: 37

Total marks achieved: _____

Questions

Q1.

The diagram shows two rectangles.



The rectangles are similar.

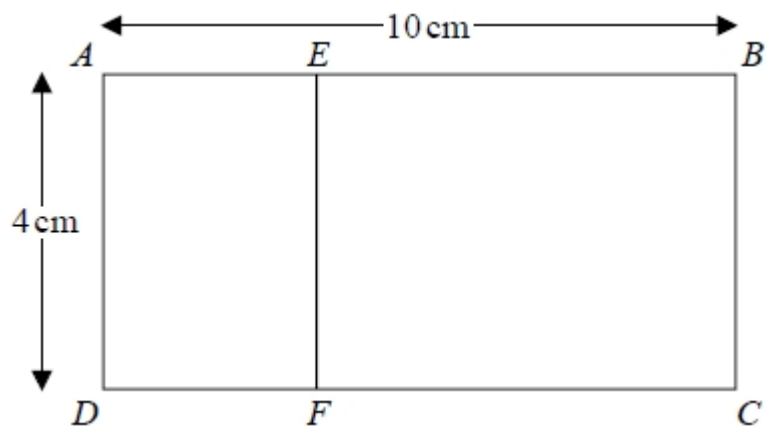
Work out the value of w .

.....

(Total for question = 2 marks)

Q2.

Rectangle $ABCD$ is mathematically similar to rectangle $DAEF$.



$AB = 10$ cm.

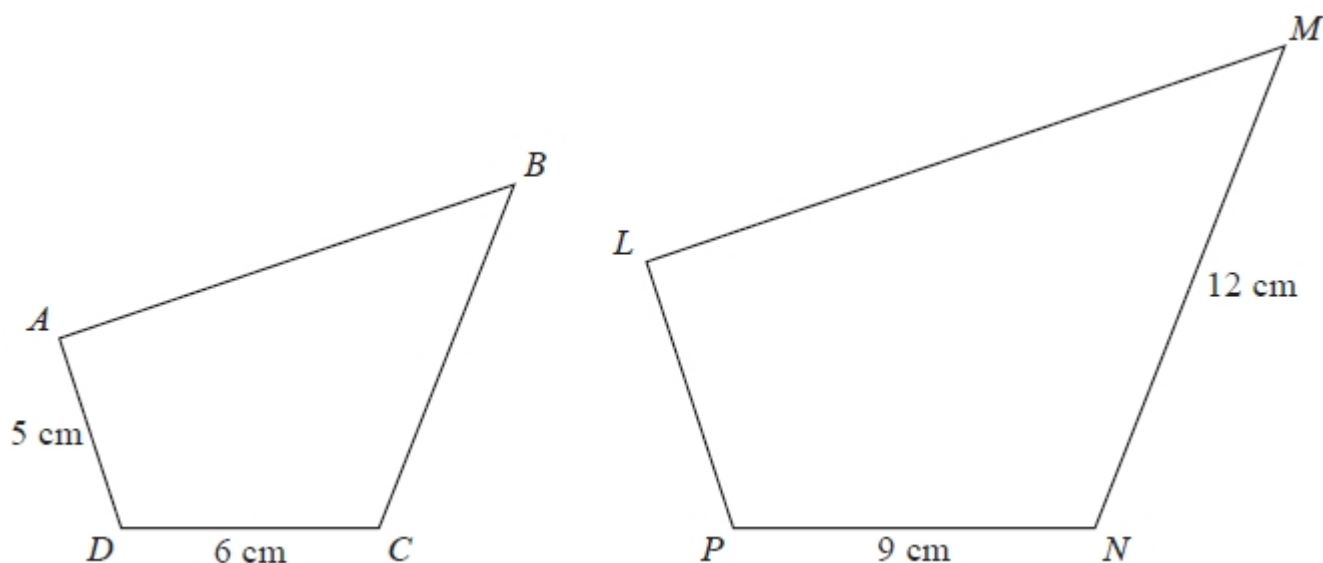
$AD = 4$ cm.

Work out the area of rectangle $DAEF$.

..... cm^2

(Total for question = 3 marks)

Q3.



Quadrilaterals $ABCD$ and $LMNP$ are mathematically similar.

Angle A = angle L

Angle B = angle M

Angle C = angle N

Angle D = angle P

(a) Work out the length of LP .

.....cm
(2)

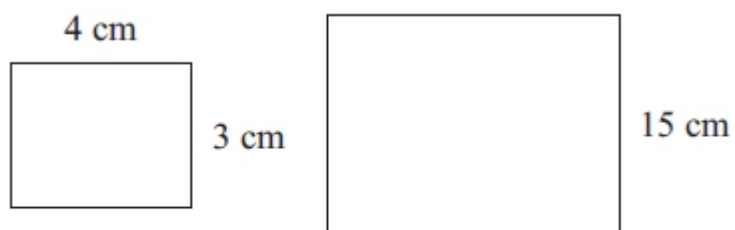
(b) Work out the length of BC .

.....cm
(2)

(Total for Question is 4 marks)

Q4.

A small photograph has a length of 4 cm and a width of 3 cm.
Shez enlarges the small photograph to make a large photograph.
The large photograph has a width of 15 cm.



Small photograph

Large photograph

Diagram **NOT** accurately drawn

The two photographs are similar rectangles.
Work out the length of the large photograph.

(Total for Question is 3 marks)

Q5.

ABC is a triangle.

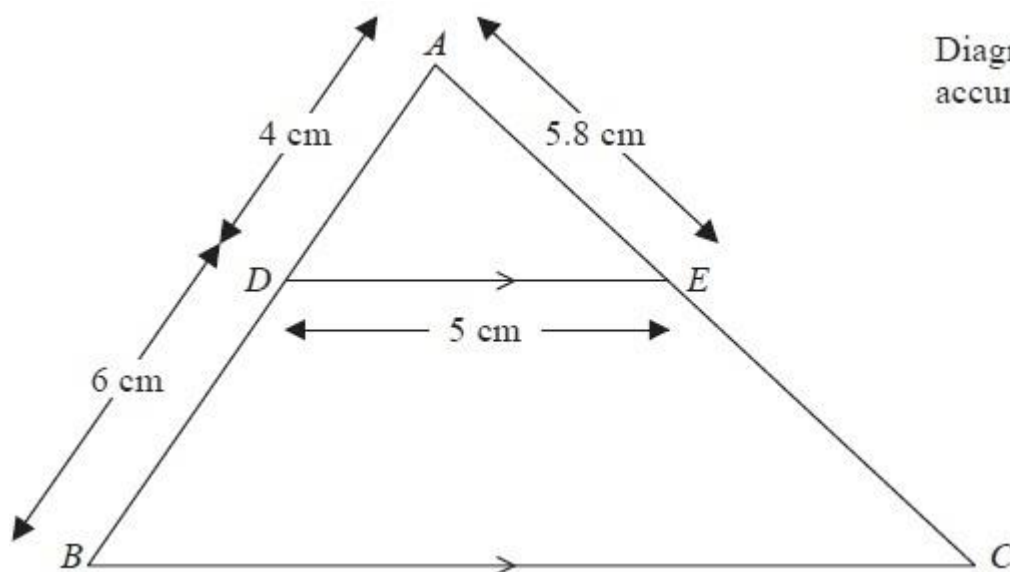


Diagram **NOT**
accurately drawn

D is a point on AB and E is a point on AC .

DE is parallel to BC .

$AD = 4\text{ cm}$, $DB = 6\text{ cm}$, $DE = 5\text{ cm}$, $AE = 5.8\text{ cm}$.

Calculate the perimeter of the trapezium $DBCE$.

..... cm

(Total for Question is 4 marks)

Q6.

Steve has a photo and a rectangular piece of card.

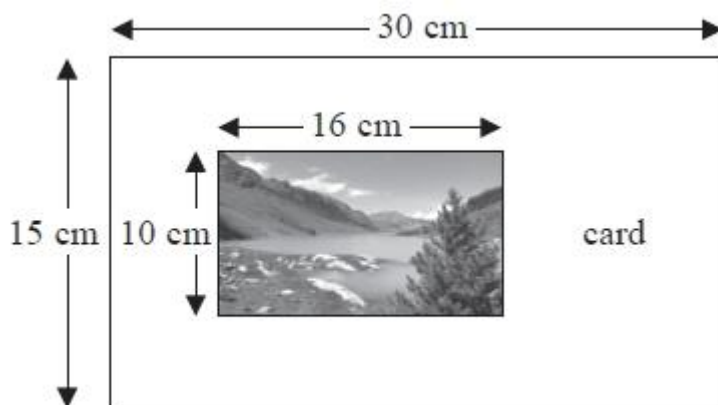
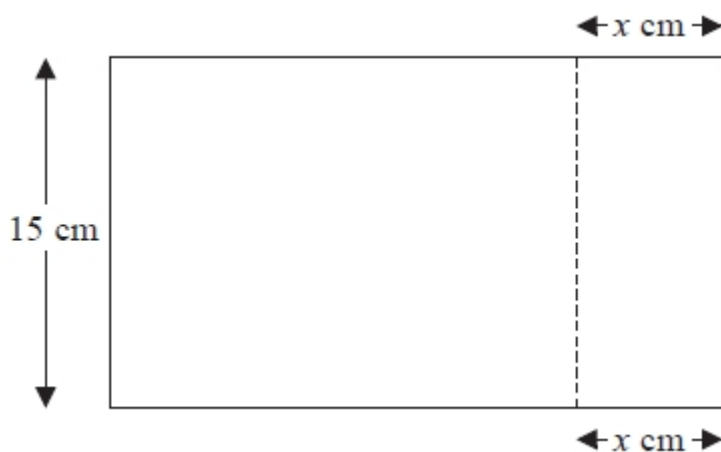


Diagram NOT
accurately drawn

The photo is 16 cm by 10 cm.

The card is 30 cm by 15 cm.

Steve cuts the card along the dotted line shown in the diagram below.



Steve throws away the piece of card that is 15 cm by x cm.

The piece of card he has left is mathematically similar to the photo.

Work out the value of x .

(Total for Question is 3 marks)

Q7.

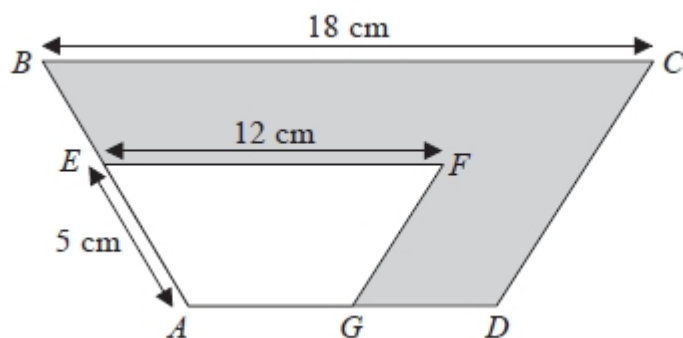


Diagram NOT
accurately drawn

$ABCD$ and $AEFG$ are mathematically similar trapeziums.

$AE = 5$ cm

$EF = 12$ cm

$BC = 18$ cm

(a) Work out the length of AB .

..... cm

(2)

Trapezium $AEFG$ has an area of 36 cm².

(b) Work out the area of the shaded region.

..... cm²

(3)

(Total for Question is 5 marks)

Q8.

The diagram shows two similar solids, A and B.

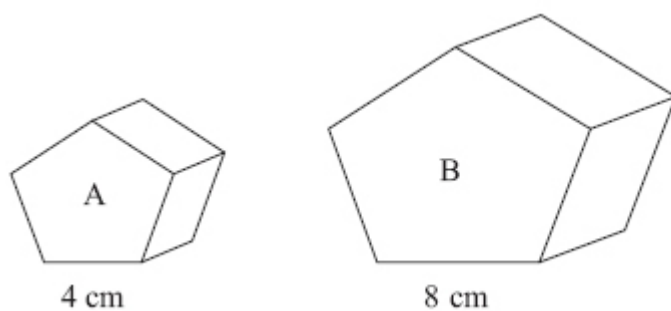


Diagram **NOT**
accurately drawn

Solid A has a volume of 80 cm^3 .

(a) Work out the volume of solid B.

..... cm^3
(2)

Solid B has a total surface area of 160 cm^2 .

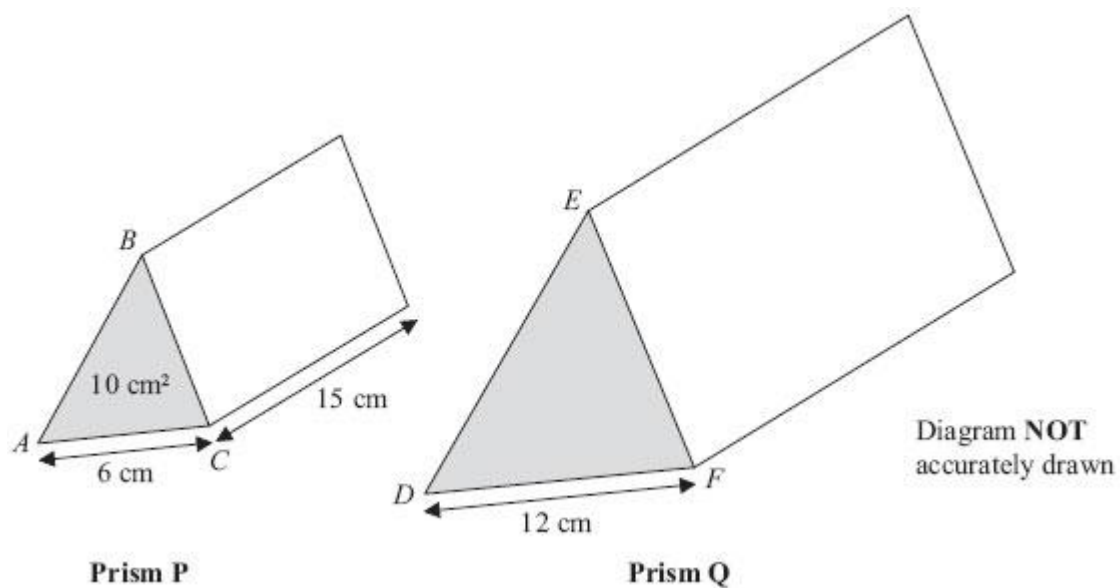
(b) Work out the total surface area of solid A.

..... cm^2
(2)

(Total for Question is 4 marks)

Q9.

P and **Q** are two triangular prisms that are mathematically similar.



Prism **P** has triangle *ABC* as its cross section.

Prism **Q** has triangle *DEF* as its cross section.

AC = 6 cm

DF = 12 cm

The area of the cross section of prism **P** is 10 cm².

The length of prism **P** is 15 cm.

Work out the volume of prism **Q**.

.....
(Total for Question is 4 marks)

Q10.

Ali has two solid cones made from the same type of metal.

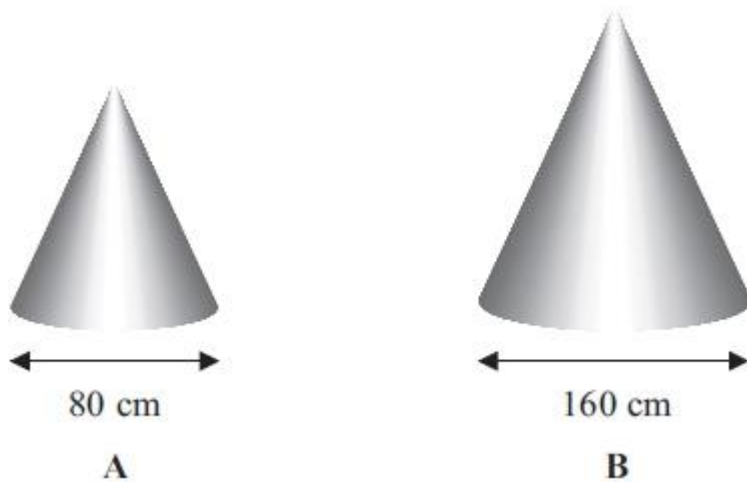


Diagram **NOT** accurately drawn

The two solid cones are mathematically similar.
 The base of cone **A** is a circle with diameter 80 cm.
 The base of cone **B** is a circle with diameter 160 cm.

Ali uses 80 m/ of paint to paint cone **A**.
 Ali is going to paint cone **B**.

(a) Work out how much paint, in m/, he will need.

..... m/
 (2)

The volume of cone **A** is 171 700 cm³.

(b) Work out the volume of cone **B**.

..... cm³
 (3)

(Total for Question is 5 marks)