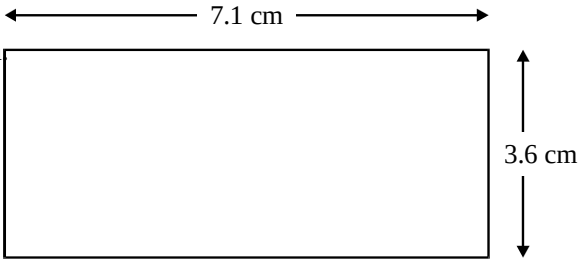
| Name: | Teacher Assessment |
|---|---|

Topic 10 - H
PAV

## Section A — Area — Grade E → C

**1.** A rectangle has length 7.1 cm and width 3.6 cm




Not to scale

(a) Calculate the area of the rectangle. Give your answer to 1 decimal place.

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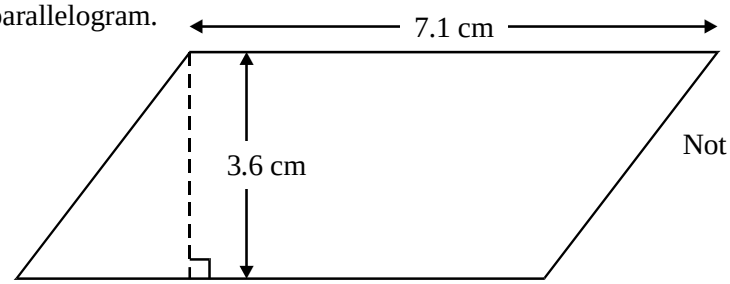
Answer ..... $cm^2$

**(3)**

(b) The diagram shows a parallelogram.




Not to scale

Explain why the area of the parallelogram is equal to the area of the rectangle.

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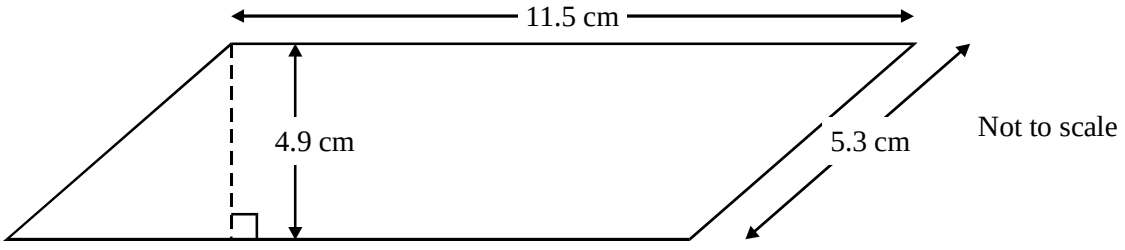
**(1)**

(c) This diagram shows a different parallelogram of length 11.5 cm, height 4.9 cm and slant height 5.3 cm.




Not to scale

Calculate the area of this parallelogram.

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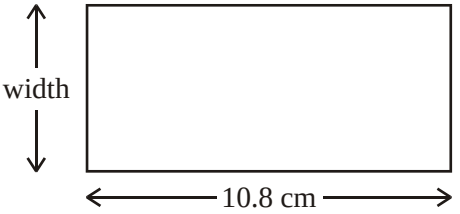
Answer ..... $cm^2$

**(2)(Total 6 marks)**

**2.** The length of a rectangle is 10.8 cm. The perimeter of the rectangle is 28.8 cm.




Not to scale

Calculate the width of the rectangle.

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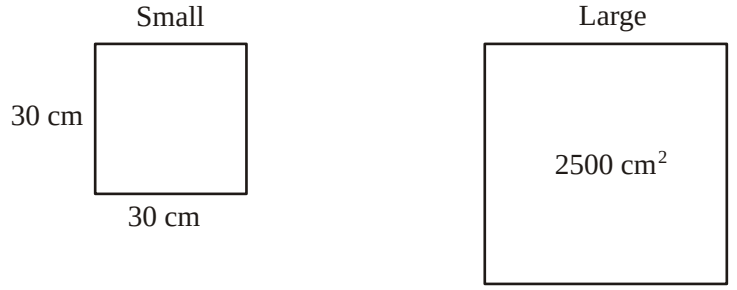
Answer ..... cm

**(Total 3 marks)**

**3.** A shop sells square carpet tiles in two different sizes.




Not to scale

(a) What is the area of a small carpet tile?

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Answer ..... $cm^2$

**(2)**

(b) What is the length of a side of a large carpet tile?

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Answer ..... cm

**(1)**

(c) The floor of a rectangular room is 300 cm long and 180 cm wide.
How many **small** tiles are needed to carpet the floor?

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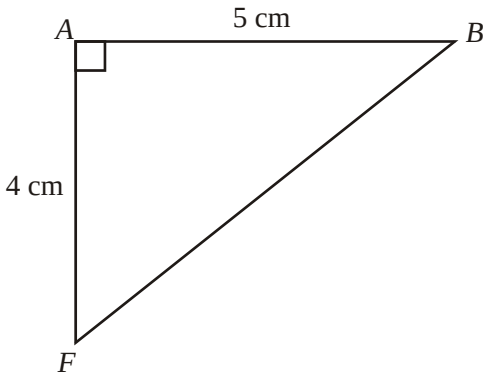
Answer ……..

**(3)**

**(Total 6 marks)**

**4.** Work out the area of the triangle *ABF*..

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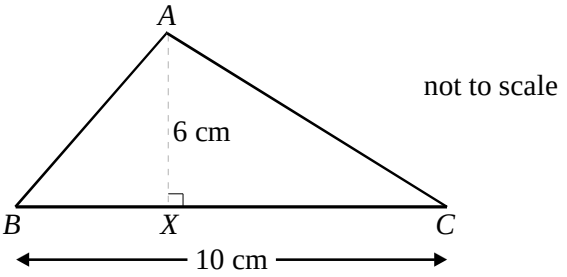
Answer ..... $cm^2$

**(2)**

**5.** The diagram shows a triangle *ABC*. The base *BC* = 10 cm.
The perpendicular height *AX* = 6 cm.




Calculate the area of the triangle.

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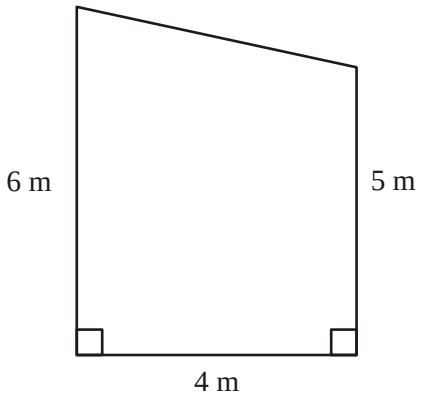
Answer.....$cm^2$

**(Total 2 marks)**

**6.** The diagram shows the side wall of a building.




Not to scale

Calculate the area of the wall. You **must** show all your working.

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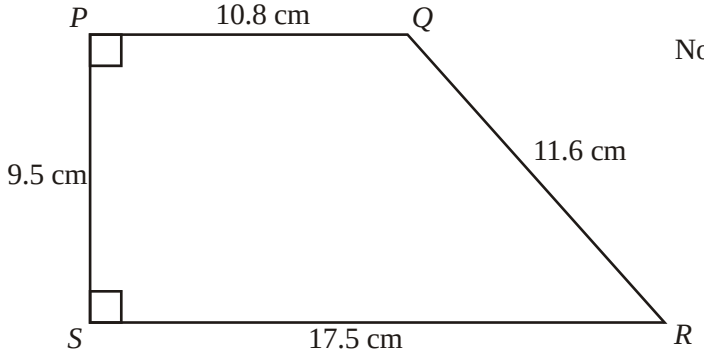
Answer .....

**(Total 4 marks)**

**7.** In the diagram below, *PQ* = 10.8 cm, *QR* = 11.6 cm, *RS* = 17.5 cm and *PS* = 9.5 cm. The angles at *P* and *S* are 90°




Not to scale

Calculate the area of *PQRS*.

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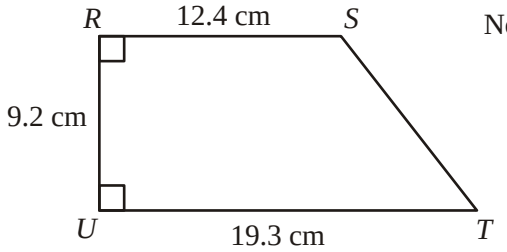
Answer ..... $cm^2$

**(Total 3 marks)**

**8.** In the diagram, *RS* = 12.4 cm, *RU* = 9.2 cm and *UT* = 19.3 cm
The angles at *R* and *U* are 90°




Not drawn accurately

Calculate the area of *RSTU*.

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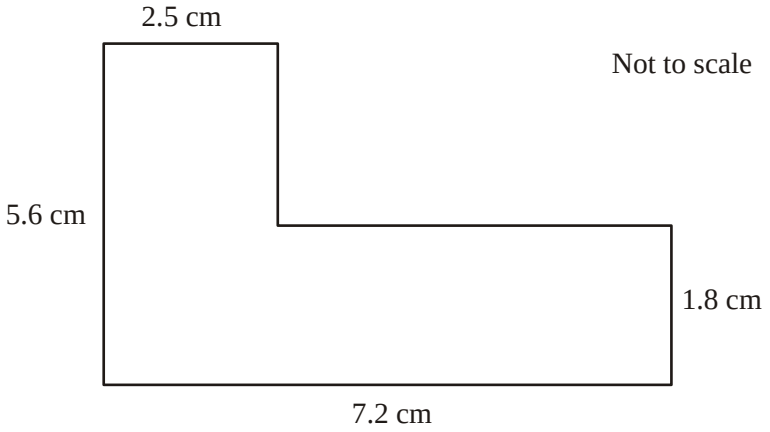
Answer .....cm$^2$

**(Total 3 marks)**

**9.** (a) This L-shape is made of rectangles.




Not to scale

Calculate the area of the L-shape.

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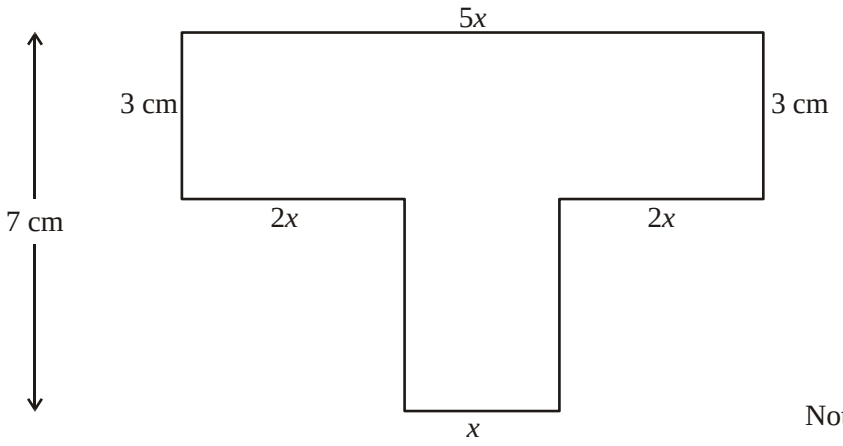
Answer ……..... cm$^2$

**(3)**

(b) This T-shape is also made of rectangles.




Not to scale

The perimeter of the T-shape is 29 cm.

Work out the value of $x$.

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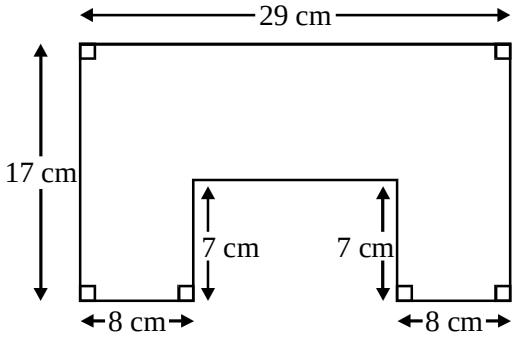
Answer ……..... cm

**(4)(Total 7 marks)**

**10.**




not to scale

Calculate the area of the shape.

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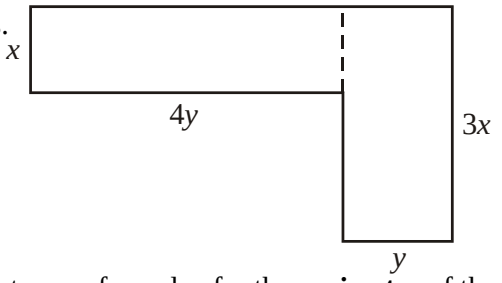
Answer.....$cm^2$

**(Total 3 marks)**

**11.** This shape is made up of rectangles.




Not to scale

(a) Write down an expression, in terms of $x$ and $y$, for the **perimeter** of the shape.

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Answer .....

**(2)**

(b) If $x = 2$ cm and $y = 5$ cm, find the **area** of the shape.

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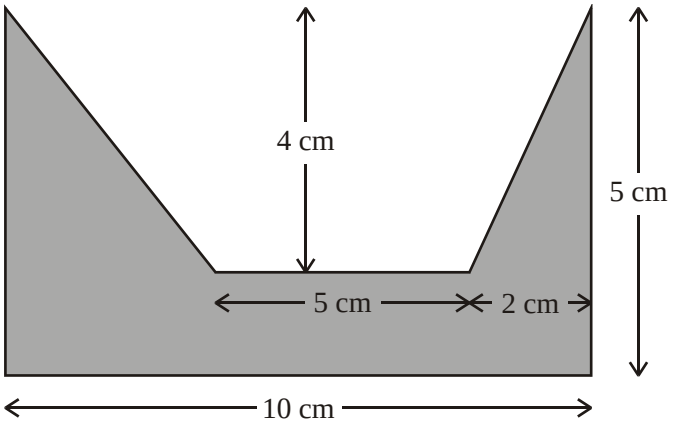
Answer ..... $cm^2$

**(2) (Total 4 marks)**

**12.** A shape has dimensions as shown.




Not to scale

Calculate the shaded area.

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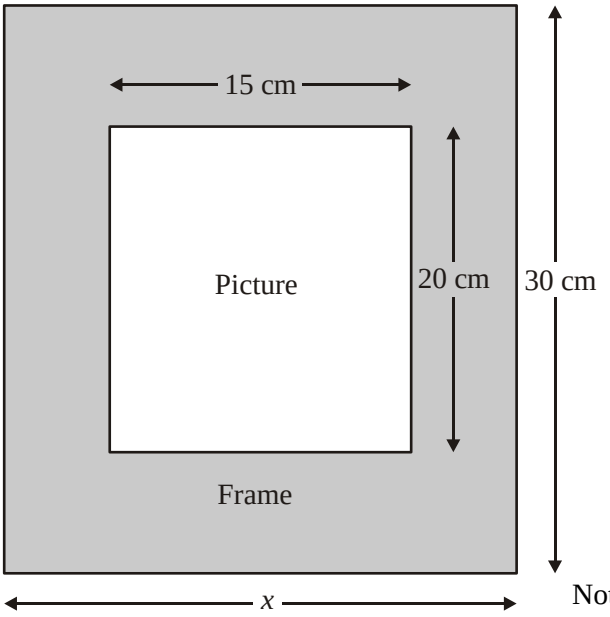
Answer ..... $cm^2$

**(Total 3 marks)**

**13.** The diagram shows a rectangular picture with a frame around it. The frame is the same width all the way round. The picture is 15 cm wide and 20 cm high. The total height of the picture **and** frame is 30 cm.




Not drawn accurately

(a) Work out the width *x*, shown on the diagram.

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Answer ..... cm

**(3)**

(b) Work out the area of the frame. State the units of your answer.

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Answer .....

**(4)(Total 7 marks)**

| Success: | Target: |
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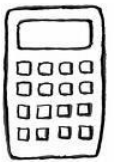
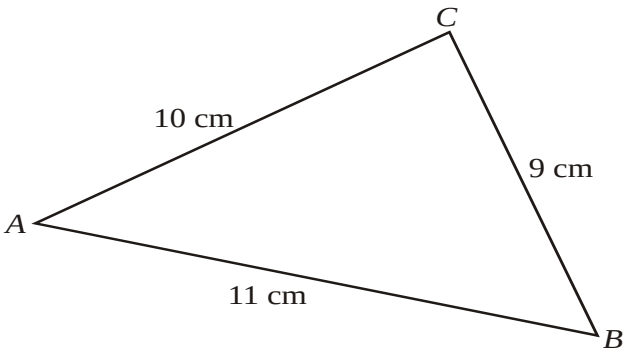
Teacher Assessment



## Section B Area of Non Right-Angled Triangles Grade A

**1.** In triangle *ABC*, *AB* = 11 cm, *BC* = 9 cm and *CA* = 10 cm.
Angle CAB = 50.5°




Not to scale

Find the area of triangle *ABC*. Give your answer to a suitable degree of accuracy.

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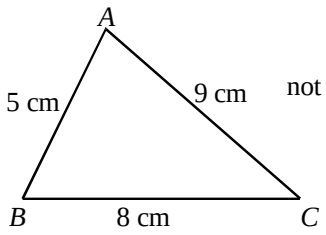
Answer .....

**(Total 4 marks)**

**2.** In triangle *ABC*, *AB* = 5 cm, *BC* = 8 cm and *AC* = 9 cm.

Angle BCA = 32°




not drawn accurately

Find the area of triangle ABC.

Give your answer to a suitable degree of accuracy.

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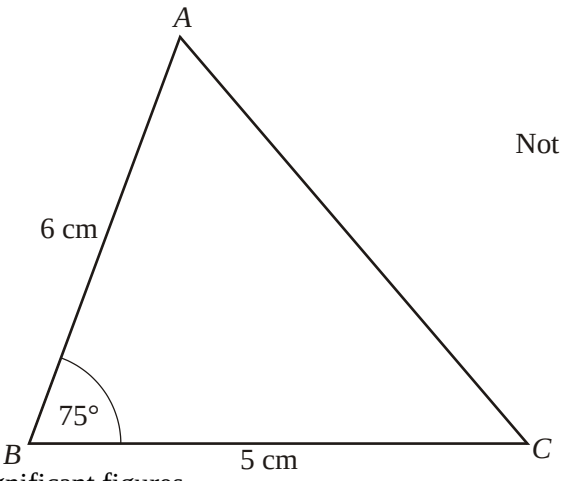
Answer .....

**(Total 4 marks)**

**3.** The diagram shows a triangle *ABC*.
*AB* = 6 cm, *BC* = 5 cm and angle *B* = 75°




Not drawn accurately

You are given that sin 75° = 0.966 to 3 significant figures.

Calculate the area of the triangle. Give your answer to a suitable degree of accuracy.

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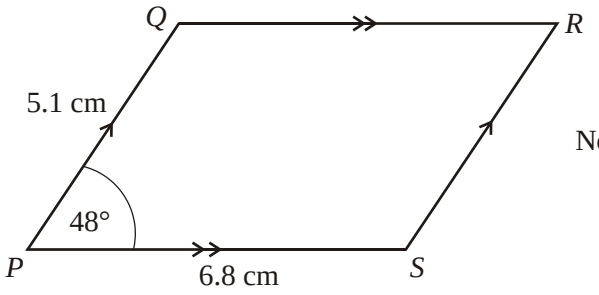
Answer ..... $cm^2$

**(Total 3 marks)**

**4.** *PQRS* is a parallelogram.
*PQ* = 5.1 cm
*PS* = 6.8 cm
$\angle QPS = 48°$




Not drawn accurately

Calculate the area of *PQRS*.

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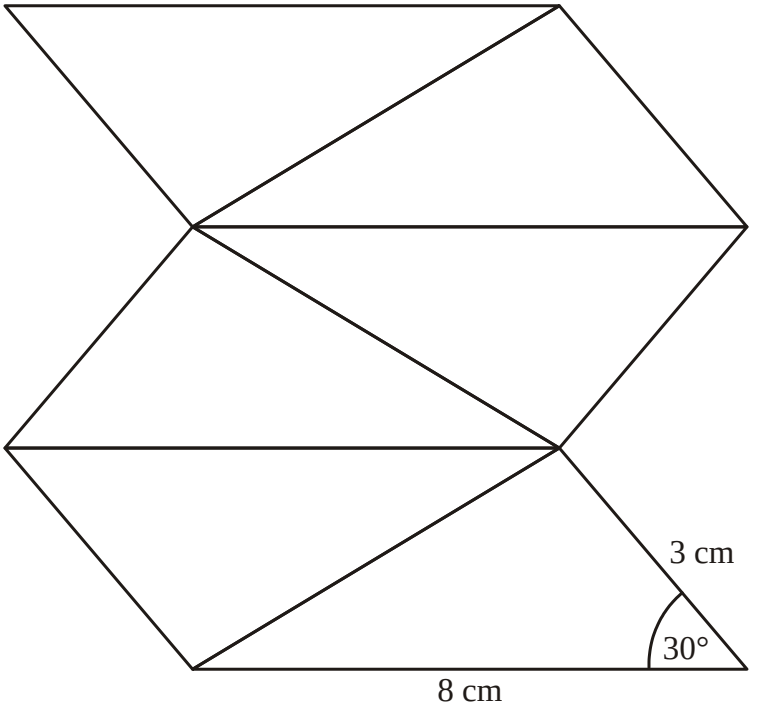
Answer ..... $cm^2$

**(Total 2 marks)**

**5.** A shape is made from 6 congruent triangles as shown.




You are given that sin 30° = 0.5 Calculate the area of the shape.

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Answer .....

**(Total 4 marks)**

| Success: | Target: |
|---|---|
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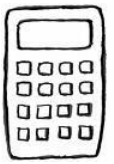
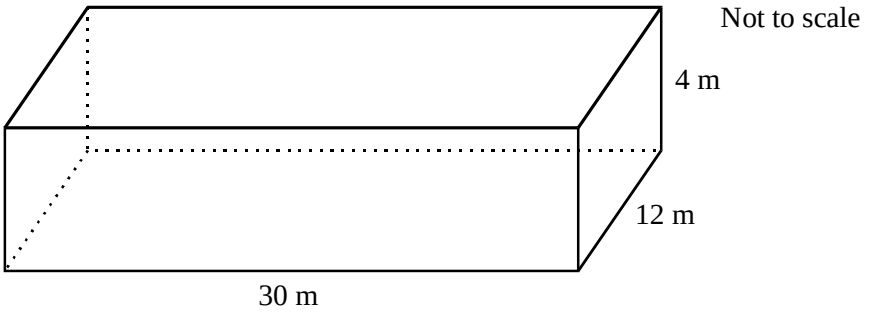
Teacher Assessment



## Section C Volume and Surface Area Grade C → A

**1.** A school hall is in the shape of a cuboid.




(a) The school hall is 30 m long, 12 m wide and 4 m high.

(i) Calculate the volume of the hall.

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Answer ..... $m^3$

**(2)**

(ii) Calculate the total area of the **four walls** of the hall.

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Answer ..... $m^2$

**(3)**

(b) The school buys **ten** 5 litre tins of paint to paint the hall.The area to be painted is 279 $m^2$. Each tin covers 30 $m^2$. Calculate the percentage of paint used.

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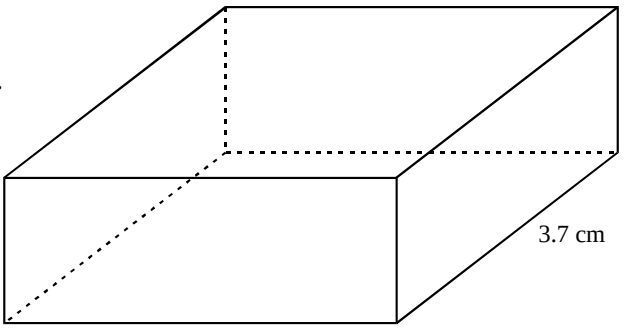
Answer ..... %

**(3)**

**(Total 8 marks)**

**2.** A cuboid is shown below.
The cuboid has volume 60 $cm^3$.
The base is 6.2 cm long and 3.7 cm wide.




(a) Calculate the height of the cuboid.
Give your Answer to a sensible degree of accuracy.

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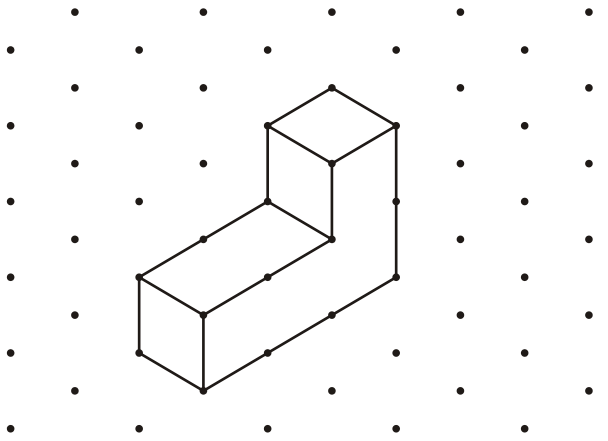
Answer ..... cm

**(Total 3 marks)**

**3.** The diagram shows a solid shape made from 4 one-centimetre cubes.



What is the surface area of the solid shape?

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Answer.....

**(Total 3 marks)**

**4.** (a) The diagram shows a triangle with base 20 cm and perpendicular height 4 cm.

Calculate the area of the triangle.
State the units of your answer.

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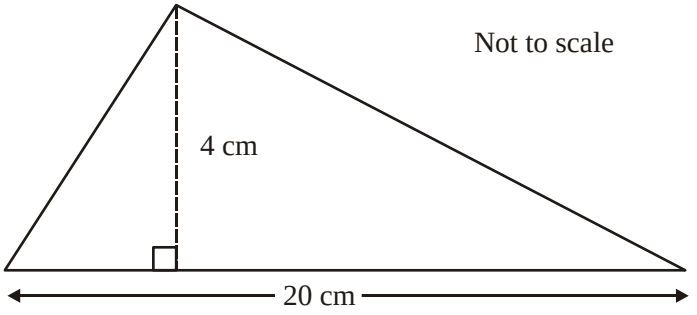
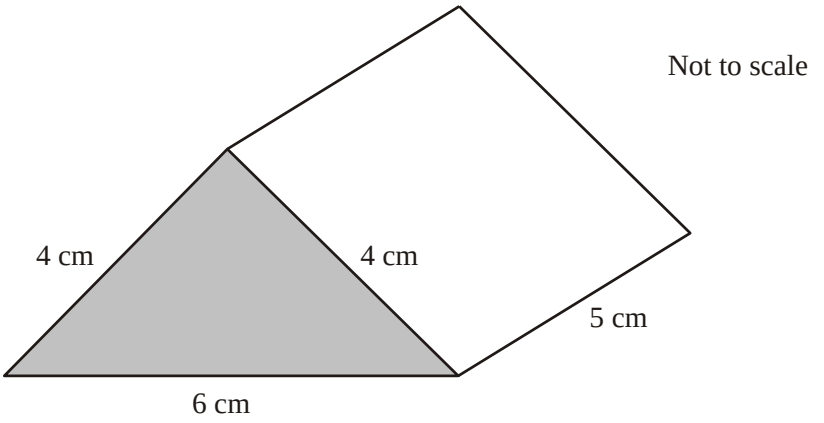
Answer …….....




**(3)**

(b) The diagram shows a triangular prism.




The area of the cross-section is 9.1 $cm^2$. Work out the volume of the triangular prism.

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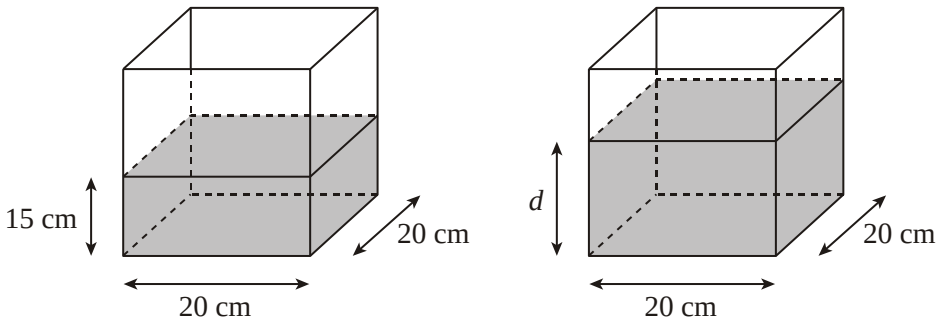
Answer ……..... $cm^3$

**(2)(Total 5 marks)**

**5.** A water container is in the shape of a cuboid.
Its base is 20 cm by 20 cm and the depth of the water in the container is 15 cm.
Tony adds 1000 $cm^3$ of water to the container.

Not drawn accurately




Calculate the new depth, *d*, of the water, in centimetres.

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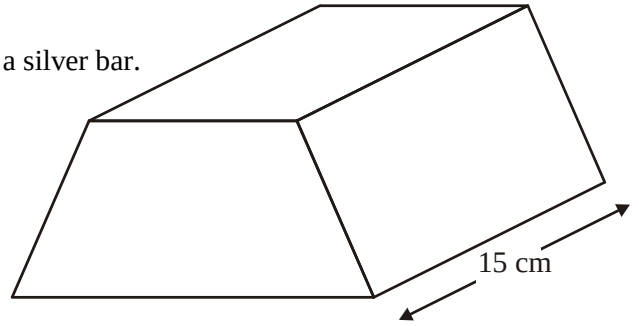
Answer ..... cm

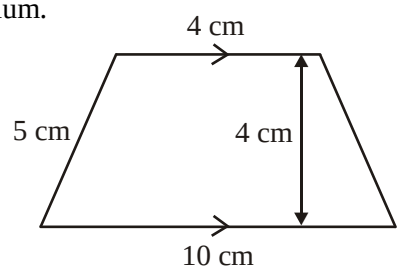
**(Total 4 marks)**

**6.** The diagram shows a silver bar.




Not to scale

The cross-section of the silver bar is a trapezium.




Not to scale

(a) Calculate the area of the cross-section.

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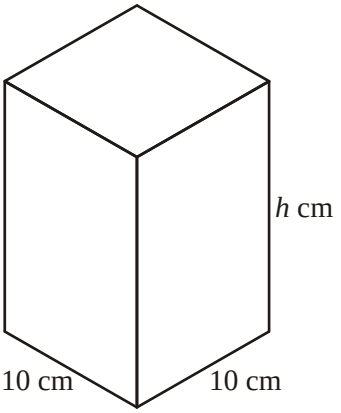
Answer ..... $cm^2$

**(2)**

(b) The silver bar is 15 cm long. The bar is melted and the silver is then made into a cuboid. The base of the cuboid is 10 cm by 10 cm.

Not to scale




What is the height, *h*, of the cuboid?

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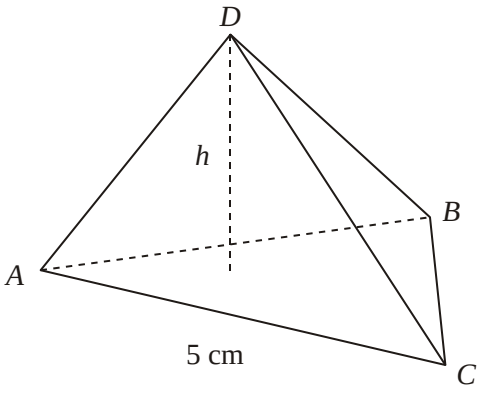
Answer ..... cm

**(3)**

**(Total 5 marks)**

**7.** *ABCD* is a triangular based pyramid.
The base *ABC* is an equilateral triangle with side 5 cm.
The volume of the pyramid is 36 $cm^3$.

Not drawn accurately




| Volume of a pyramid = $\frac{1}{3}$ × base area × perpendicular height |
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Calculate the perpendicular height, *h*, of the pyramid.

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Answer *h* = ..... cm

**(Total 4 marks)**

| Success: | Target: |
|---|---|
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