Bishops Online Tutoring

Education Consultancy

Edexcel GCSE Mathematics

VOLUME OF PRISM

Materials Required:

- Pen
- HB Pencil
- Ruler (in centimetres and millimetres)
- Protractor
- Compass

Instructions:

- Use a black ink pen to answer all questions
- Fill your name in the section below
- Answer the questions in the spaces provided
- Show your working out for all answers

Information:

- The marks allocated for each question are displayed within brackets – utilise this information to gauge the appropriate amount of time to dedicate to each question
- Questions marked with an asterisk (*) will assess your written communication; be careful of spelling, punctuation and grammar with these questions

Advice:

- Carefully read the question before attempting to answer it
- Be vary of time and try to answer every question
- If you have enough time in the end, go back and check your answers. A good way to check your answers is to retry the question with the hope of getting the same answer as before without looking at your working out from before

CALCULATOR ALLOWED

NAME:	

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1. Here is a cuboid.

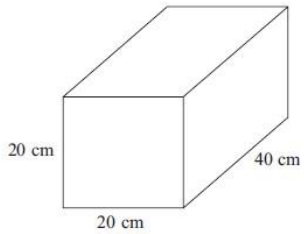


Diagram **NOT** accurately drawn

Work out the volume of the cuboid.

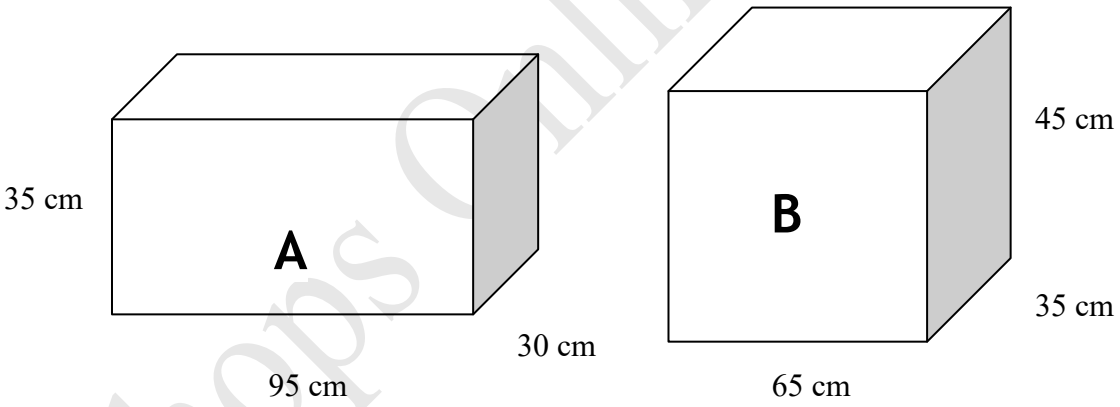
$20 \times 20 \times 40 = 16000$

$16000 cm^3$

(3 marks)

2*. The diagram shows two fish tanks, each in the shape of a cuboid.

Diagram **NOT** accurately drawn



Finley fills both fish tanks with water.

Which fish tank holds the most water?
You must show all your calculations.

(A) $35 \times 95 \times 30$
$= 99750 cm^3$

(B) $65 \times 35 \times 45$
$= 102375 cm^3$

B holds the most water.

(4 marks)

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3. The diagram shows a prism.

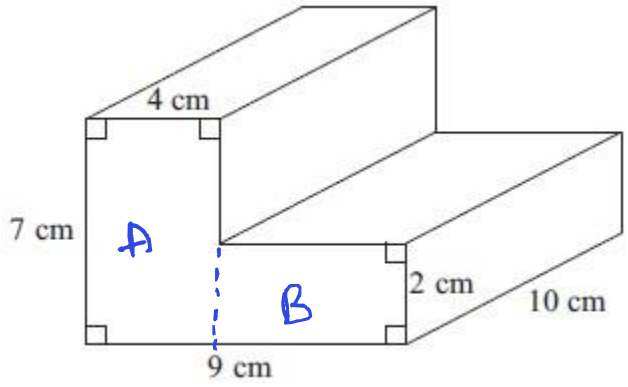

Diagram **NOT** accurately drawn

Work out the volume of the prism.

(A) $7 \times 4 \times 10$

$= 280$

(B) $2 \times 5 \times 10$

$= 100$

(A) + (B)

$280 + 100 = 380 cm^3$

380 ..... cm^3

(4 marks)

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4. Here is a solid prism.

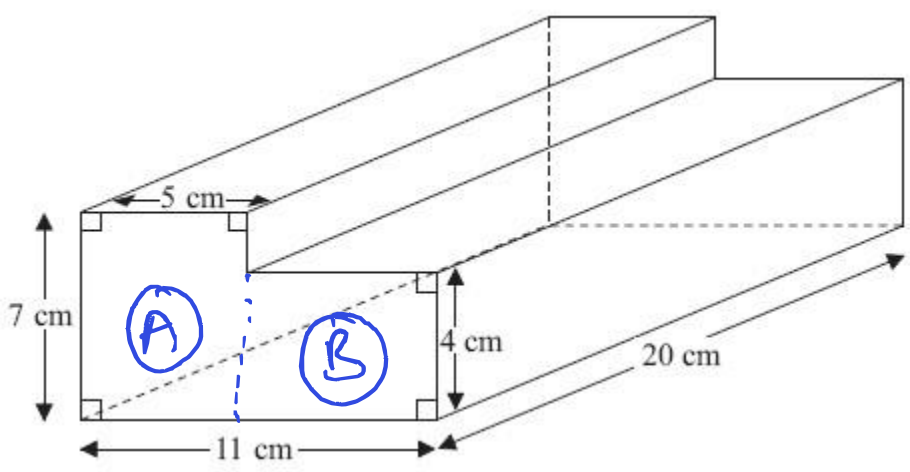

Diagram **NOT** accurately drawn

Work out the volume of the prism.

35

A $7 \times 5 \times 20$

$= 700 cm^3$

B $6 \times 4 \times 20$

$= 480 cm^3$

$$\begin{array}{r} 700 \\ +\ 480 \\ \hline 1180 \end{array}$$

A + B

$700 + 480 = 1180$

1180 ..... cm^3

(4 marks)

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5.

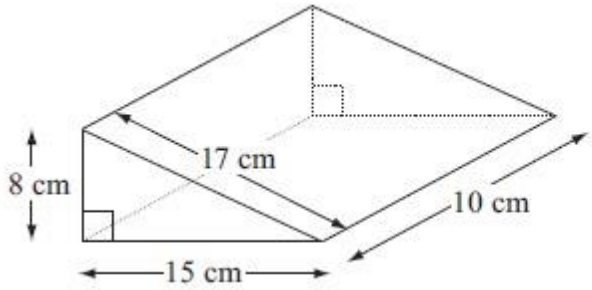

Diagram **NOT** accurately drawn

Work out the volume of the triangular prism.

$\frac{1}{2} \times 8 \times 15 \times 10$

$= 600$

600cm^3

(4 marks)

6.

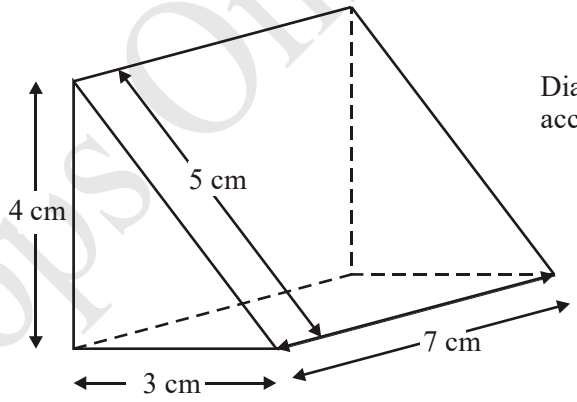

Diagram **NOT** accurately drawn

Calculate the volume of the triangular prism.

$\frac{1}{2} \times 4 \times 3 \times 7$

$= 42$

42cm^3

(4 marks)

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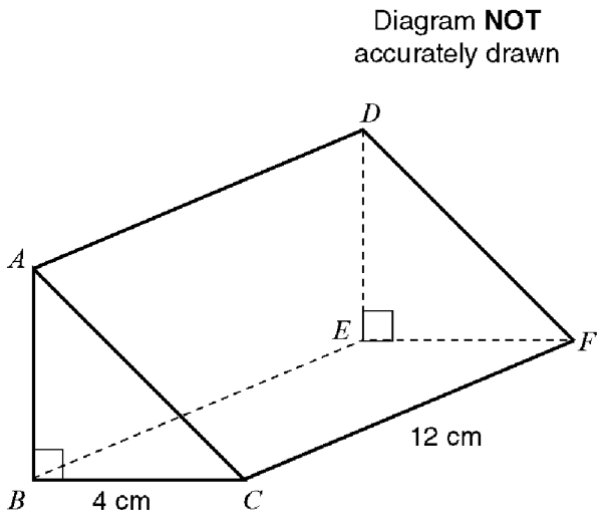
7. The diagram shows a triangular prism.



$BC = 4$ cm, $CF = 12$ cm and angle $ABC = 90°$.

The volume of the triangular prism is 84 cm^3.
Work out the length of the side AB of the prism.

$\frac{1}{2} \times x \times 4 \times 12 = 84$

$x \times 48 = 168$

$x = \frac{168}{48}$

$x = 3.5$

3.5 cm

(4 marks)

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8. The diagram shows a triangular prism.

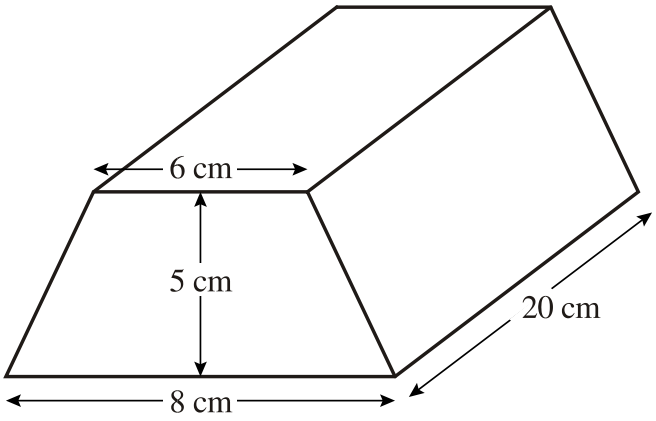

Diagram **NOT** accurately drawn.

The cross-section of the prism is a trapezium.
The lengths of the parallel sides of the trapezium are 8 cm and 6 cm.
The distance between the parallel sides of the trapezium is 5 cm.
The length of the prism is 20 cm.

Work out the volume of the prism.

$\frac{1}{2}(6+8) \times 5 \times 20$

$= 700$

700cm^3

(4 marks)

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9.

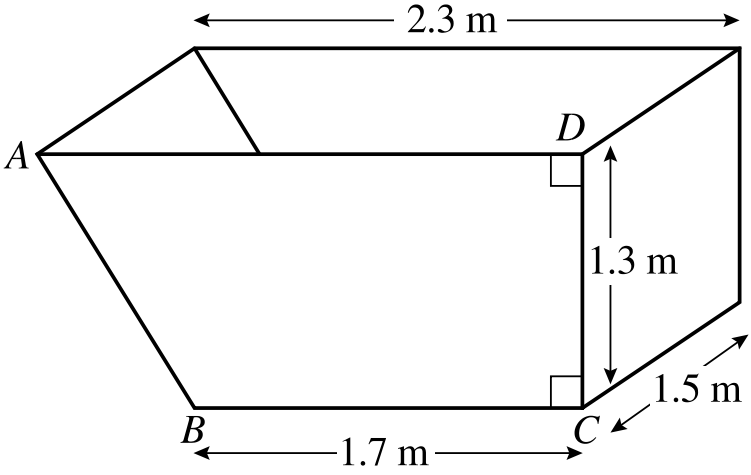

Diagram **NOT** accurately drawn

A skip is in the shape of a prism with cross-section *ABCD*.
AD = 2.3 m, *DC* = 1.3 m and *BC* = 1.7 m.
The width of the skip is 1.5 m.

(a) Calculate the area of the shape *ABCD*.

$\frac{1}{2}(2.3+1.7)\times 1.3$
$= 2.6$

…2.6m²…

(2 marks)

(b) Calculate the volume of the skip.

$2.6 \times 1.5 = 3.9$

…3.9m³…

(3 marks)

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