Bishops Online Tutoring

Education Consultancy

Edexcel GCSE Mathematics

SURFACE AREA

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:	

1. The diagram shows a cuboid of dimensions 10cm × 8cm × 5cm.

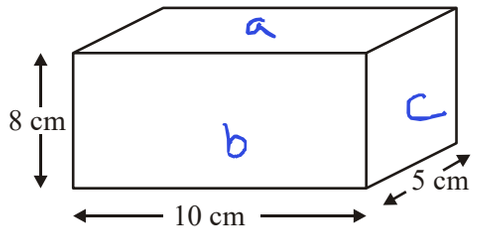


Diagram **NOT** accurately drawn

Work out the total surface area of the cuboid.

State the units with your answer.

3 pairs of sides 2 of them

(a) $10 \times 5 = 50\text{cm}^2 \rightarrow 100\text{cm}^2$

(b) $8 \times 5 = 40\text{cm}^2 \rightarrow 80\text{cm}^2$

(c) $10 \times 8 = 80\text{cm}^2 \rightarrow 160\text{cm}^2$

Total $\rightarrow$ 340cm^2

Mark for units.

.....340cm²..... **(Total 4 marks)**

2. The diagram shows a solid cuboid which is 5 cm by 4 cm by 3 cm.

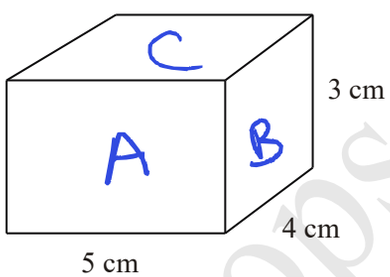


Diagram **NOT** accurately drawn

What is the total surface area of this cuboid?

State the units with your answer. 2 of them

(A) $5 \times 3 = 15\text{cm}^2 \rightarrow 30\text{cm}^2$

(B) $3 \times 4 = 12\text{cm}^2 \rightarrow 24\text{cm}^2$

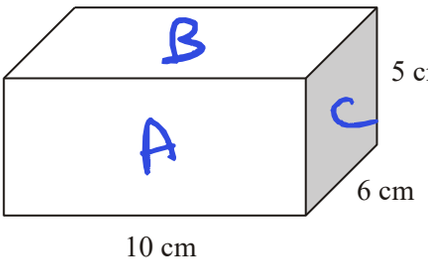
(C) $4 \times 5 = 20\text{cm}^2 \rightarrow 40\text{cm}^2$

94cm^2

Mark for units.

.....94cm²..... **(Total 4 marks)**

3. Here is a cuboid.



2 of each

(A) $10 \times 5 = 50\text{cm}^2$ → 100
(B) $10 \times 6 = 60\text{cm}^2$ → +120
(C) $5 \times 6 = 30\text{cm}^2$ → 60
280

Diagram **NOT** accurately drawn

What is the total surface area of the cuboid?

State the units with your answer.

280cm^2

(Total 4 marks)

4.

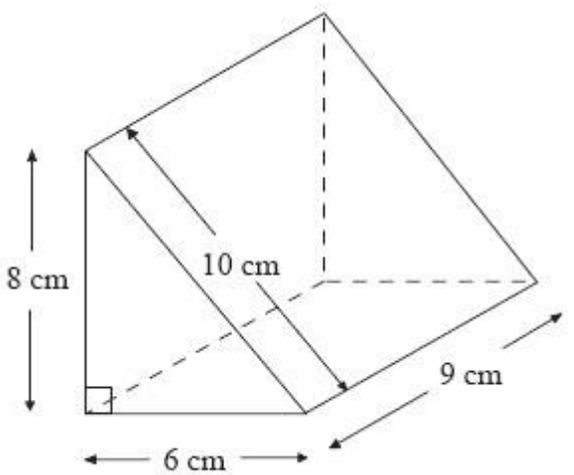


Diagram **NOT** accurately drawn

Work out the surface area of the triangular prism.
State the units with your answer.

2 x triangle $= \frac{1}{2} \times 8 \times 6 = 24$ → 48
slope side $= 10 \times 9 = 90$
base $= 6 \times 9 = 54$
side $= 8 \times 9 = 72$

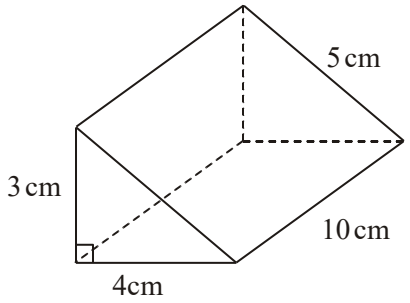
Total $= 48 + 90 + 54 + 72$
$= 264$

264cm^2

(Total 4 marks)

5.

Diagram **NOT** accurately drawn



What is the total surface area of the triangular prism?

Work out the surface area of the triangular prism.
State the units with your answer.

2 triangles: $\frac{1}{2} \times 3 \times 4 = 6$ → two of them → 12

Sloped side: $10 \times 5 = 50$

base: $10 \times 4 = 40$

side: $3 \times 10 = 30$

Total $= 12 + 50 + 40 + 30$

$= 132 \text{ cm}^2$

Mark for units.

132cm²

(Total 4 marks)

6.

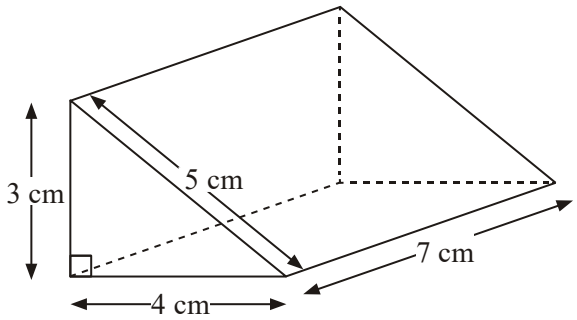


Diagram **NOT** accurately drawn

Work out the total surface area of the triangular prism.

2 x triangle → ½ x 3 x 4 = 6 → two → 12

Base → 4 x 7 = 28

Sloped side → 5 x 7 = 35

Other side → 3 x 7 = 21

12 + 28 + 35 + 21

= 96 cm²

96 ..... cm²

(Total 3 marks)

7.

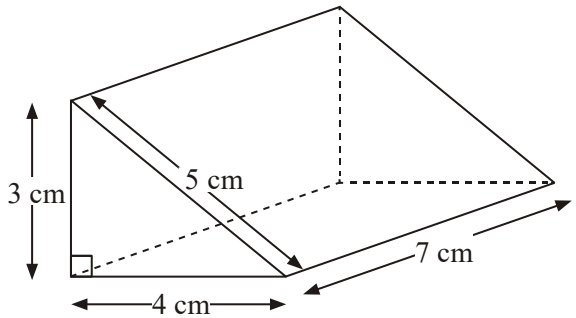


Diagram **NOT** accurately drawn

Work out the total surface area of the triangular prism.
Give the units with your answer.

2 x triangle → ½ x 3 x 4 = 6 → two → 12

Base : 4 x 7 = 28

Sloped side : 5 x 7 = 35

Other side : 3 x 7 = 21

12 + 28 + 35 + 21

= 96 cm²

96

.....

(Total 4 marks)

8.

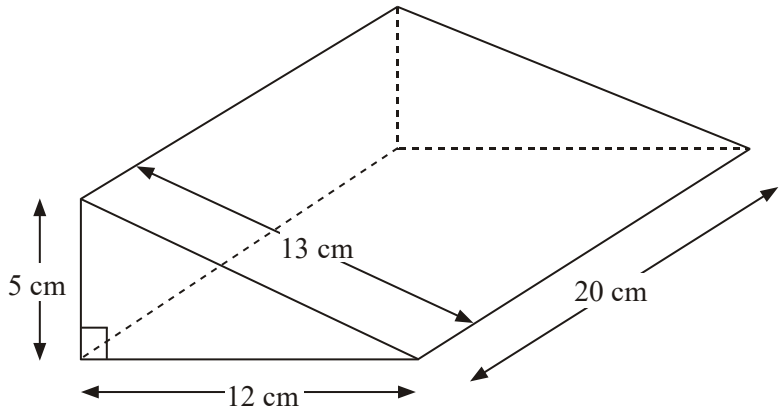


Diagram **NOT** accurately drawn

The diagram shows a right-angled triangular prism.

Work out the surface area of the triangular prism.

2x triangle : $\frac{1}{2} \times 5 \times 12 = 30$ → two → 60

Base : $12 \times 20 = 240$

Sloping side : $13 \times 20 = 260$

Other side : $5 \times 20 = 100$

$60 + 240 + 260 + 100$

$= 660 \text{ cm}^2$

660 ..... cm^2

(Total 3 marks)

9.

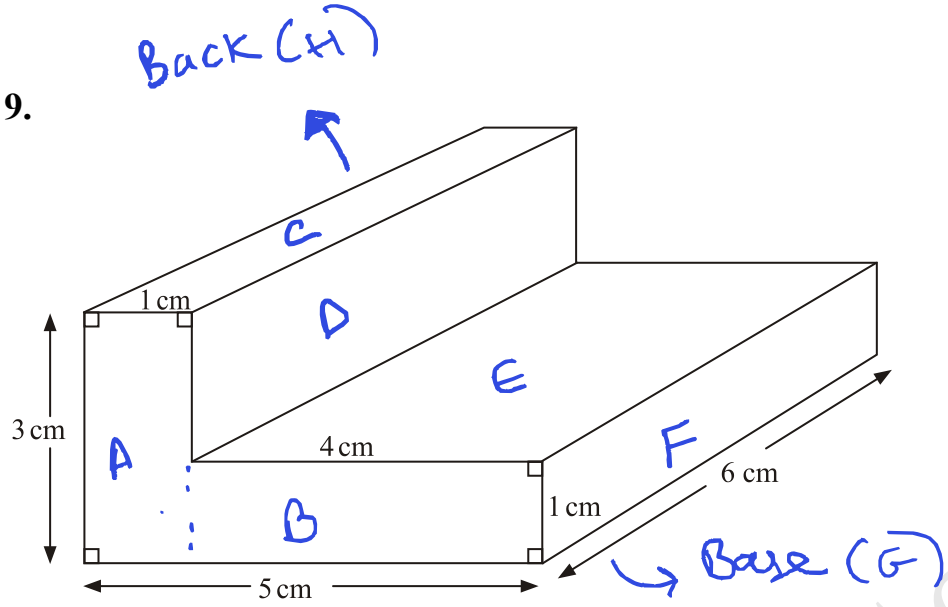


Diagram **NOT** accurately drawn

Work out the total surface area of the L-shaped prism.
State the units with your answer.

(A) $3 \times 1 = 3\text{cm}^2$
$3 \times 2 = 6\text{cm}^2$ → two of them

(B) $4 \times 1 = 4\text{cm}^2$
$4 \times 2 = 8\text{cm}^2$ → two of them

(C) $6 \times 1 = 6\text{cm}^2$

(D) $2 \times 6 = 12\text{cm}^2$

(E) $4 \times 6 = 24\text{cm}^2$

(F) $1 \times 6 = 6\text{cm}^2$

(G) $5 \times 6 = 30\text{cm}^2$

(H) $3 \times 6 = 18\text{cm}^2$

$6 + 8 + 6 + 12 + 24 +$
$6 + 30 + 18$
$= 110\text{cm}^2$

110cm²

(Total 4 marks)