Edexcel GCSE
Mathematics (Linear) – 1MA0

SURFACE AREA

Materials required for examination	**Items included with question papers**
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser. Tracing paper may be used.	Nil

Instructions

Use black ink or ball-point pen.
Fill in the boxes at the top of this page with your name, centre number and candidate number.
Answer all questions.
Answer the questions in the spaces provided – there may be more space than you need.
Calculators may be used.

Information

The marks for each question are shown in brackets – use this as a guide as to how much time to spend on **each** question.
Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed – you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.

Advice

Read each question carefully before you start to answer it.
Keep an eye on the time.
Try to answer every question.
Check your answers if you have time at the end.

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

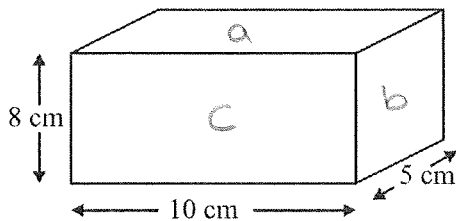8 cm

a

c

b

5 cm

10 cm

Diagram **NOT** accurately drawn

Work out the total surface area of the cuboid.

State the units with your answer.

3 pairs of sides

(a) Top and Bottom → 10×5 = 50cm² —2 of them→ 100 cm²

(b) Left and Right → 8×5 = 40cm² ———→ 80 cm²

(c) Front and Back → 10×8 = 80cm² ———→ 160 cm²

TOTAL   340 cm²

340 cm²

mark for the units

(Total 4 marks)

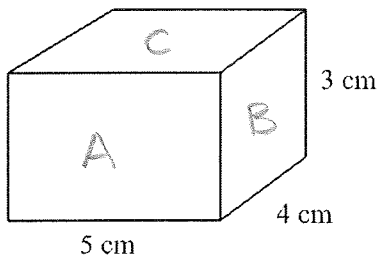2. The diagram shows a solid cuboid which is 5 cm by 4 cm by 3 cm.

C

B

A

3 cm

4 cm

5 cm

Diagram **NOT** accurately drawn

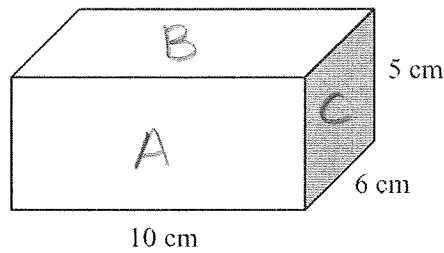What is the total surface area of this cuboid?

State the units with your answer.

A = 5×3 = 15 —2 of those→ 30

B = 3×4 = 12 ———→ 24

C = 4×5 = 20 ———→ 40

TOTAL 94

94 cm²

mark for units if not given.

(Total 4 marks)

3. Here is a cuboid.

5 cm

6 cm

10 cm

$A = 10 \times 5 = 50 \rightarrow$ 2 of each

$B = 10 \times 6 = 60 \rightarrow$ 100

$C = 5 \times 6 = 30 \rightarrow$ 120

                 60

                 ——

                 280

Diagram **NOT** accurately drawn

What is the total surface area of the cuboid?

State the units with your answer.

........280 cm^2........
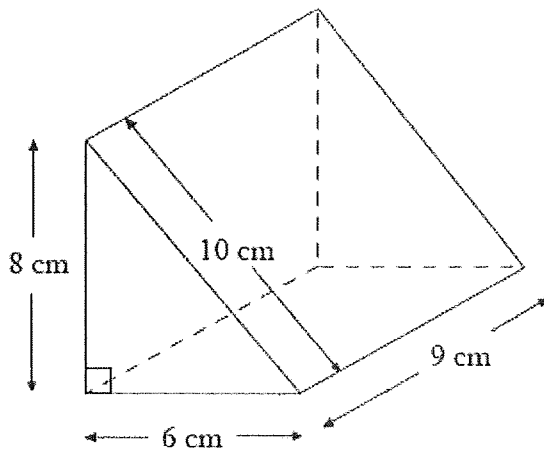
(Total 4 marks)

4.

8 cm

10 cm

9 cm

6 cm

Diagram **NOT**
accurately drawn

$2 \times \text{triangle} = \frac{1}{2} \times 8 \times 6 = 24 \rightarrow 48$

$\text{slope side} = 10 \times 9 = 90$

$\text{base} = 6 \times 9 = 54$

$\text{side} = 8 \times 9 = 72$

$\text{TOTAL} = 48 + 90 + 54 + 72$

$= 264$

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

........264 cm^2........

(Total 4 marks)

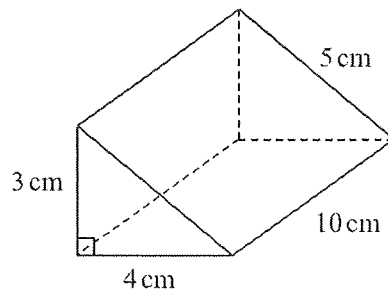**5.**

5 cm

3 cm

10 cm

4 cm

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: ½×3×4 = 6 each ⟶ 12 total

sloped side: 10×5 = 50

base: 10×4 = 40

side: 3×10 = 30

TOTAL = 12 + 50 + 40 + 30

= 132 cm²

...........132 cm²..........

(Total 4 marks)

6.
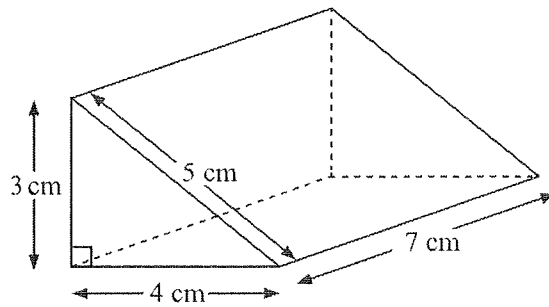
Diagram **NOT** accurately drawn

Work out the total surface area of the triangular prism.

front triangle → ½ × 3 × 4 = 6

Back triangle → ½ × 3 × 4 = 6

Base → 4 × 7 = 28

Sloping side → 5 × 7 = 35

Other side → 3 × 7 = 21

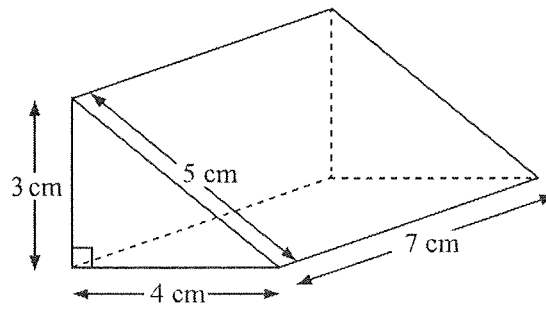TOTAL   96

........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.

front triangle : ½ × 3 × 4 = 6

Back triangle : ½ × 3 × 4 = 6

Base : 4 × 7 = 28

Sloping side : 5 × 7 = 35

Other side : 3 × 7 = 21

TOTAL 96

96 cm²

(Total 4 marks)
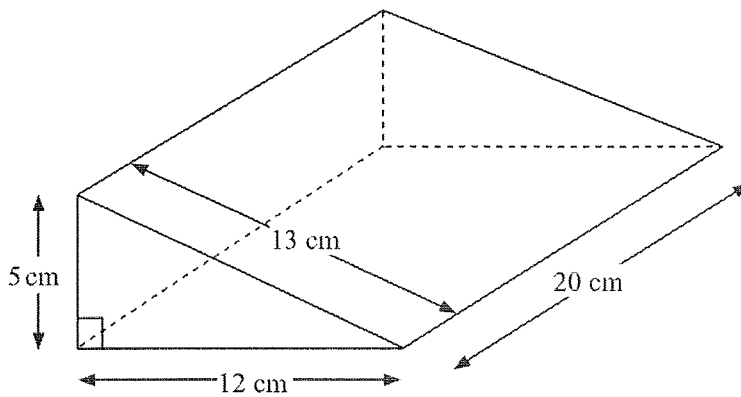
8.

The diagram shows a right-angled triangular prism.

Work out the surface area of the triangular prism.

front triangle : ½ × 5 × 12 = 30

Back triangle : ½ × 5 × 12 = 30

Base : 12 × 20 = 240

Sloping side : 13 × 20 = 260

Other side : 5 × 20 = 100

660

.............660............. cm^2

(Total 3 marks)

9.

(F)

(E) 1×6

(D) 2×6

(G) (same as (A))

1 cm

3 cm   1×3

(C) 4×6

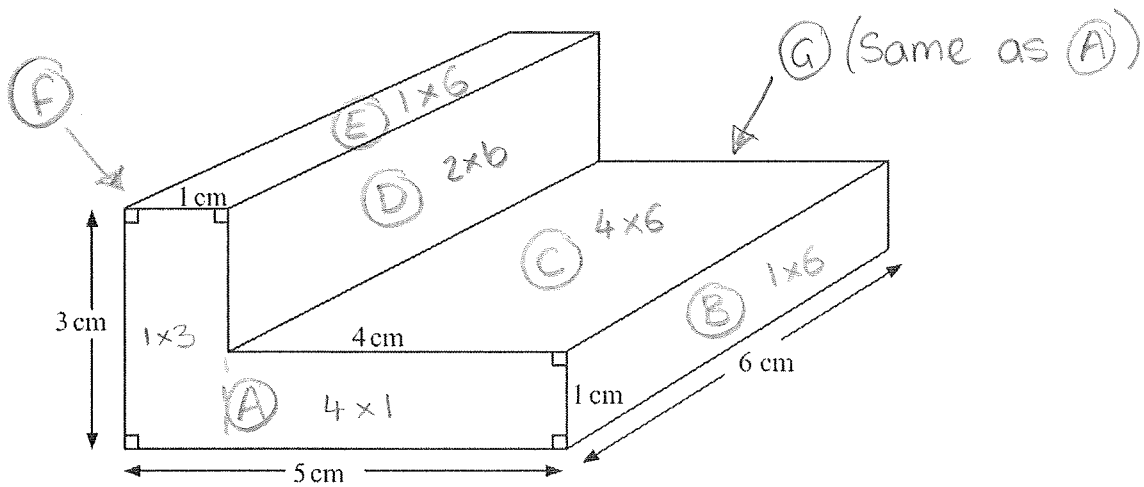(B) 1×6

4 cm

5 cm

(A) 4×1

1 cm

6 cm

Diagram **NOT**
accurately drawn

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

① Label the sides

(A) → Compound shape so split into 2 and
work out areas. Add together to
make total.

(B) → (E) All easy rectangles

(F) → The one you can't see (3×6)

(G) → Same as (A)

....80 cm²..

(Total 4 marks)

(A) = 7

(B) = 6

(C) = 24

(D) = 12

(E) = 6

(F) = 18

TOTAL = 7 + 6 + 24 + 12 + 6 + 18 + 7
       = 80 cm²