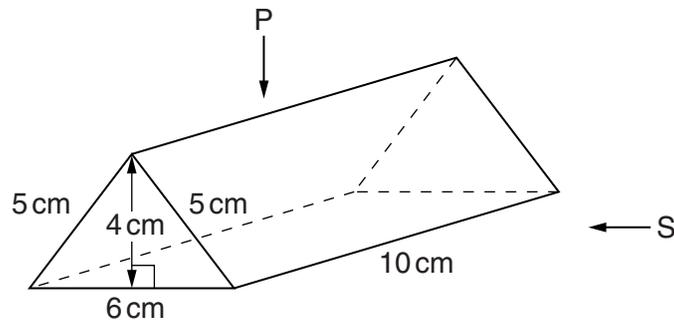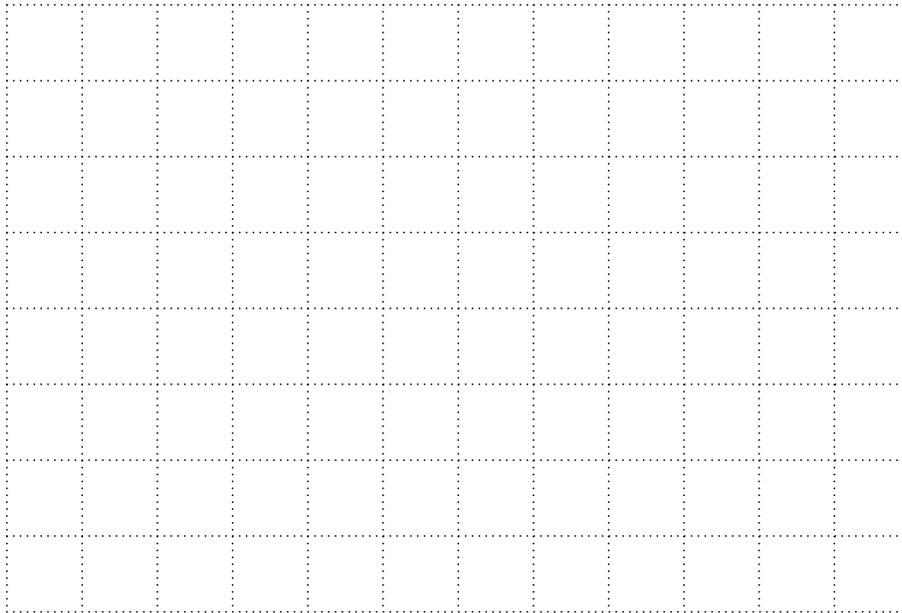**1**  A chocolate bar is contained in a closed box which is a triangular prism.
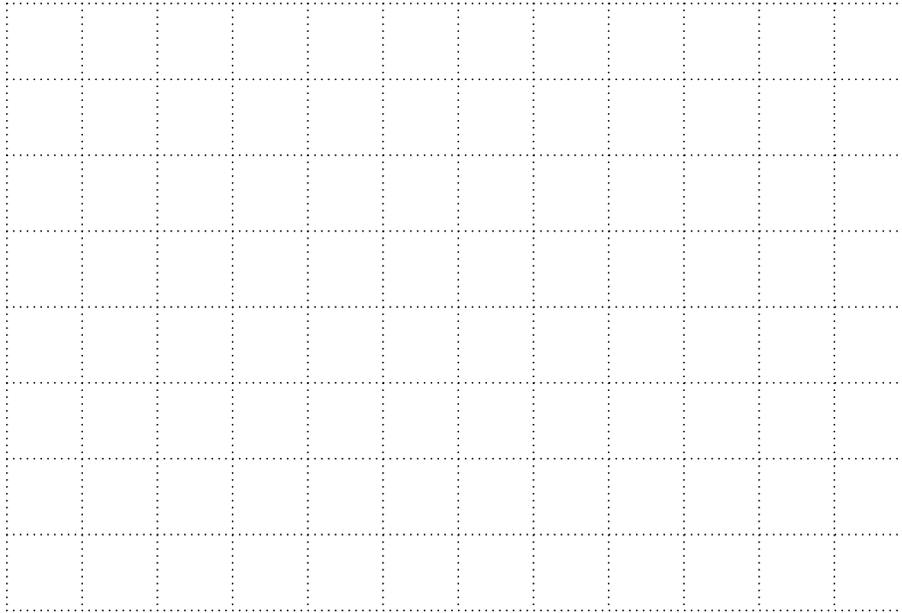


**(a)**  Make an accurate, full-size drawing of

**(i)**  the plan (from P) and

**(ii)**  the side elevation (from S) of the prism.
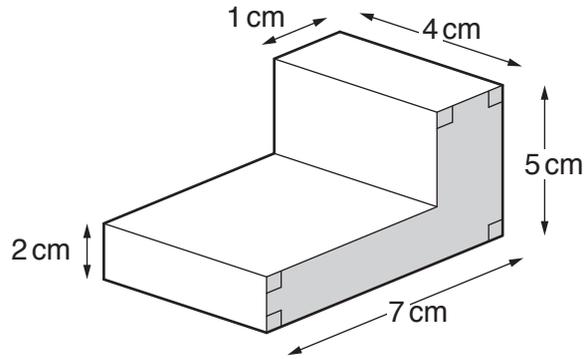
**(i)**  Plan



[2]

**(ii)** Side elevation

[2]

**(b)** The box is made from card.

What is the total area of card needed to make the box?

**(b)** _____ cm$^2$ **[4]**

**2**   This solid shape is a prism.



1 cm — 4 cm

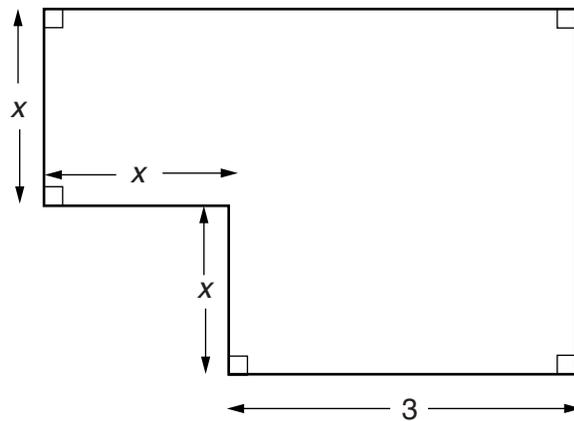**Not to scale**

5 cm

2 cm

7 cm

**(a)**   Show that the area of the shaded face of the solid is $17\,cm^2$. **[2]**

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

**(b)**   .................................................. $cm^2$ **[3]**

**3** The diagram shows the plan of a room.
   All lengths are in metres.



**Not to scale**

**(a)** Show that the total area of the room, $A\,m^2$, can be given by this formula.
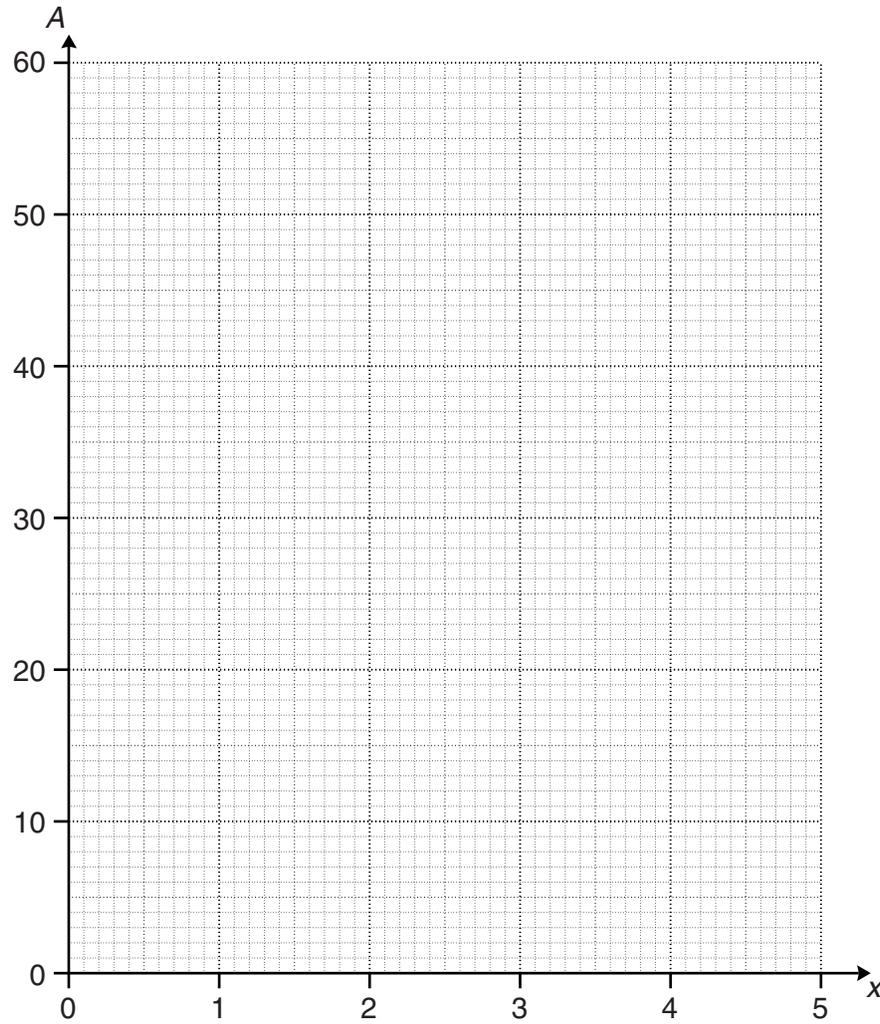
$$A = x^2 + 6x$$

[2]

**(b)** Complete the table for $A = x^2 + 6x$.

| $x$ | 0 | 1 | 2 | 3 | 4 | 5 |
|-----|---|---|----|----|----|---|
| $A$ | 0 |   | 16 | 27 | 40 |   |

[2]

**(c)** Draw the graph of $A = x^2 + 6x$ for $x$ from 0 to 5.



**[2]**

**(d)** The total area of the room is $35 \, \text{m}^2$.

Use your graph to find the length $x$.

**(d)** _____ m **[1]**