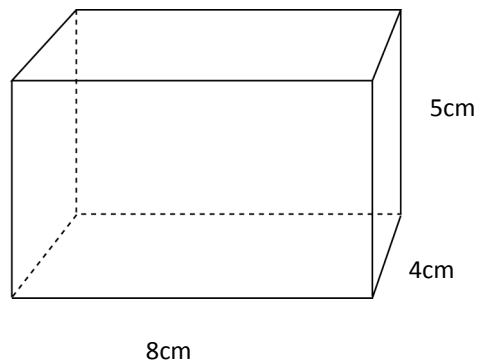


## Volume

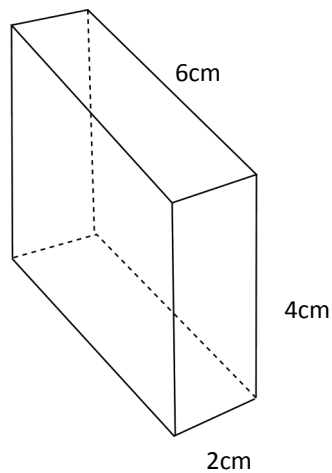
1. What is the volume of this cuboid?

$160\text{cm}^3$



2. Find the volume of this cuboid.

$48\text{cm}^3$



3. The length, width and height of a cuboid are: 5cm, 2cm and 3cm. What is its volume?  $30\text{cm}^3$

4. Find the missing measurements in this table:

| Length       | Width        | Height       | Volume           |
|--------------|--------------|--------------|------------------|
| 10cm         | 4cm          | 3cm          | $120\text{cm}^3$ |
| $5\text{cm}$ | 6cm          | 2cm          | $60\text{cm}^3$  |
| 8cm          | 2cm          | $3\text{cm}$ | $48\text{cm}^3$  |
| 10m          | $3\text{cm}$ | 6m           | $180\text{m}^3$  |
| 9mm          | 2mm          | $4\text{cm}$ | $72\text{mm}^3$  |

5. A cuboid has a volume of  $72\text{cm}^3$ . If the length, width and height are all whole numbers, how many different sets of measurements can you find?

### Answers for Question 5:

$$72 \times 1 \times 1$$

$$36 \times 2 \times 1$$

$$24 \times 3 \times 1$$

$$18 \times 4 \times 1$$

$$18 \times 2 \times 2$$

$$12 \times 6 \times 1$$

$$12 \times 3 \times 2$$

$$9 \times 8 \times 1$$

$$9 \times 4 \times 2$$

$$6 \times 4 \times 3$$

$$96 \times 1 \times 1$$

$$48 \times 2 \times 1$$

$$32 \times 3 \times 1$$

$$24 \times 4 \times 1$$

$$24 \times 2 \times 2$$

$$16 \times 6 \times 1$$

$$16 \times 3 \times 2$$

$$12 \times 8 \times 1$$

$$12 \times 4 \times 2$$

$$8 \times 6 \times 2$$

$$8 \times 4 \times 3$$

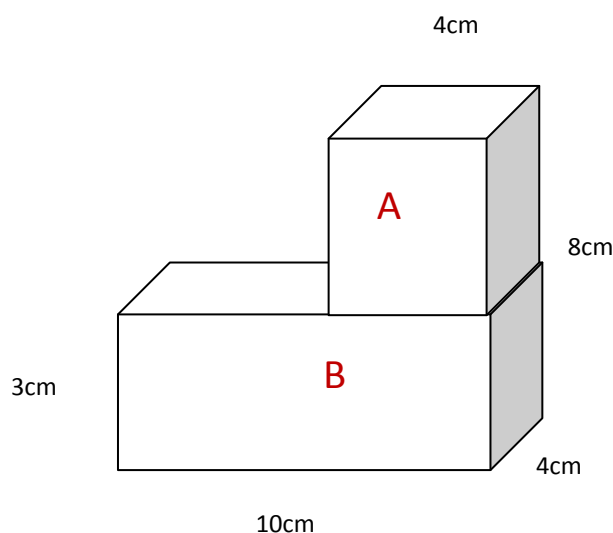
$$6 \times 4 \times 4$$

6. What is the volume of a cube which has an edge measuring 2cm?  $8\text{cm}^3$
7. One face of a cube has an area of  $25\text{cm}^2$ . What is its volume?  $125\text{cm}^3$
8. The surface area of a cube is  $96\text{cm}^2$ . What is the length of one side?  
What is its volume?  $4\text{cm}$
9. A cube has a volume of  $216\text{cm}^3$ . What is the length of one side?  $6\text{cm}$
10. Kloggs Cereal Company is wanting to sell its new breakfast cereal—Choco Crispy Poppers. A 500g portion will take up  $700\text{cm}^3$ . The box manufacturer makes 3 sizes of cardboard boxes:

| Box | Length (cm) | Width (cm) | Height (cm) | Volume $\text{cm}^3$ |
|-----|-------------|------------|-------------|----------------------|
| A   | 40          | 4          | 4           | 640                  |
| B   | 25          | 5          | 6           | 750                  |
| C   | 30          | 6          | 4           | 720                  |

Which box would be most suitable for a 500g portion of Choco Crispy Poppers?

11. A cuboid has 3 different sized faces. The areas of 2 of the faces are  $84\text{cm}^2$  and  $56\text{cm}^2$ . The volume of the cuboid is  $672\text{cm}^3$ . Find
  - a) the length, width and height of the cuboid.  $12\text{cm} \times 8\text{cm} \times 7\text{cm}$
  - b) the area of the third face.  $96\text{cm}^2$
12. Find the volume of this shape.

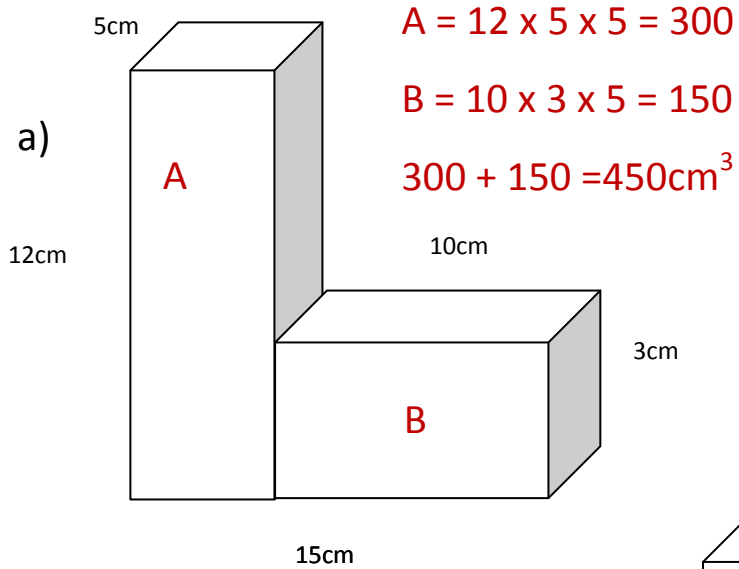


$$A = 5 \times 4 \times 4 = 80$$

$$B = 10 \times 4 \times 3 = 120$$

$$120 + 80 = 200\text{cm}^3$$

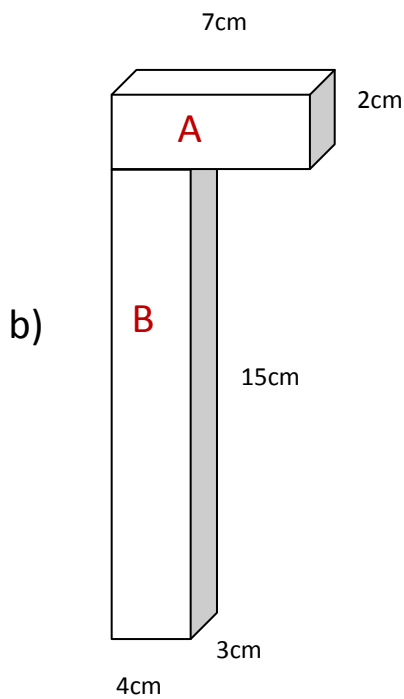
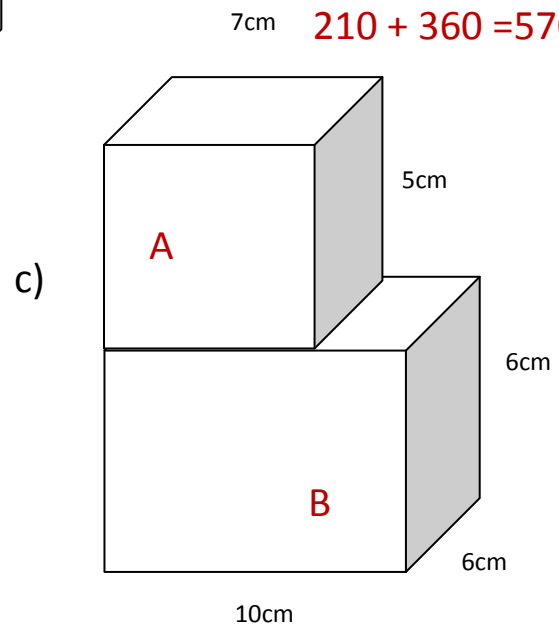
12. Find the volume of these shapes:



$$A = 7 \times 5 \times 6 = 210$$

$$B = 10 \times 6 \times 6 = 360$$

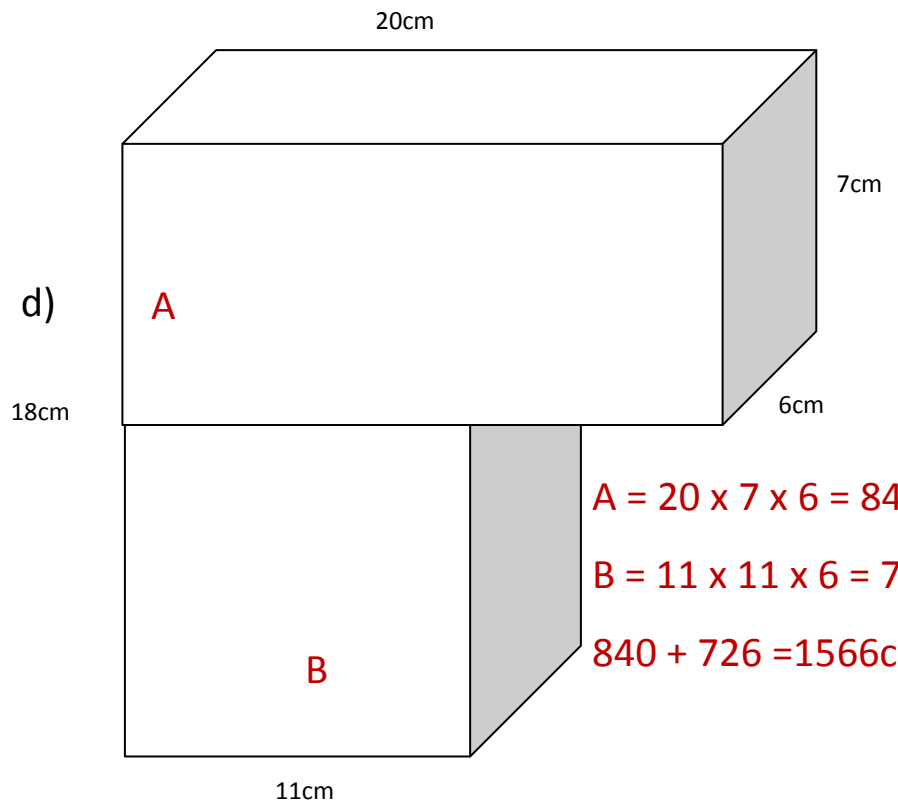
$$210 + 360 = 570\text{cm}^3$$



$$A = 7 \times 2 \times 3 = 42$$

$$B = 15 \times 3 \times 4 = 180$$

$$42 + 180 = 222\text{cm}^3$$



$$A = 20 \times 7 \times 6 = 840$$

$$B = 11 \times 11 \times 6 = 726$$

$$840 + 726 = 1566\text{cm}^3$$