

Name: \_\_\_\_\_

### Exam Style Questions

## Surface Area: Cube/Cuboids



Corbettmaths

Equipment needed: Pen and Calculator

### Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

### Video Tutorial

[www.corbettmaths.com/contents](http://www.corbettmaths.com/contents)

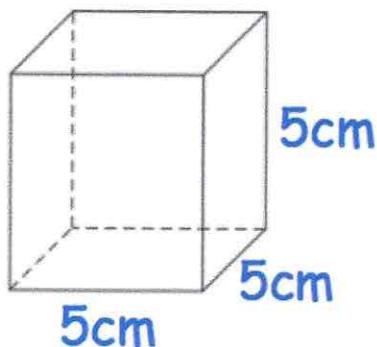


### Video 310

### Answers and Video Solutions



1. Shown below is a cube of side 5cm.



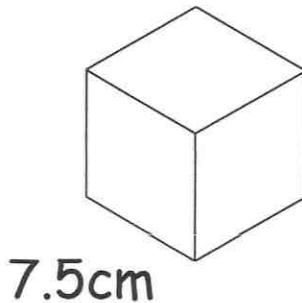
Work out the total surface area of the cube.

$$5 \times 5 = 25 \text{ cm}^2$$

$$25 \times 6 = 150 \text{ cm}^2$$

150 .....cm<sup>2</sup>  
(2)

2.



Work out the total surface area of the cube.  
Include suitable units.

$$7.5 \times 7.5 = 56.25$$

$$56.25 \times 6 = 337.5$$

337.5 .....cm<sup>2</sup>  
(3)

3. Calculate the total surface area of a cube with side length 7cm.

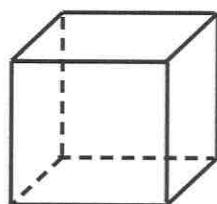


$$7 \times 7 = 49$$

$$49 \times 6 = 294$$

294 .....cm<sup>2</sup>  
(2)

4. Shown below is a cube with side length 10cm.



10cm

$$10 \times 10 = 100$$

$$100 \times 6 = 600 \text{ cm}^2$$

Joshua says

the surface area of the cuboid is 1000cm<sup>2</sup> as  $10 \times 10 \times 10 = 1000$

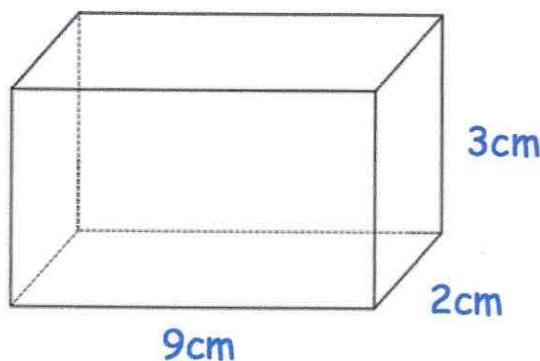
Is Joshua correct?

Explain your answer.

No, Joshua has calculated the volume.  
The surface area is 600cm<sup>2</sup>.

(1)

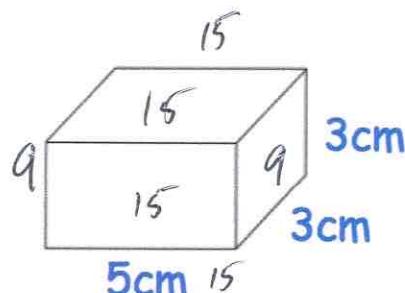
5. Shown below is solid cuboid.



Work out the total surface area of the cuboid.

$$\begin{array}{r} 18 \\ 9 \times 2 = 18 \\ 18 \\ 6 \\ 2 \times 3 = 6 \\ 6 \\ 9 \times 3 = 27 \\ + \frac{27}{102} \\ 102 \text{ cm}^2 \\ (3) \end{array}$$

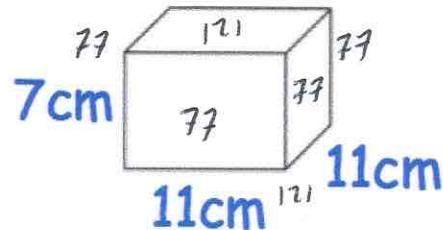
6. Here is a cuboid.



Calculate the surface area of the cuboid.

$$\begin{array}{r} 9 \\ 5 \times 3 = 15 \\ 15 \\ 15 \\ 3 \times 3 = 9 \\ 15 \\ 15 \\ + \frac{15}{78} \\ 78 \text{ cm}^2 \\ (3) \end{array}$$

7.



Work out the surface area of this cuboid.  
State the units of your answer.

$$7 \times 11 = 77$$

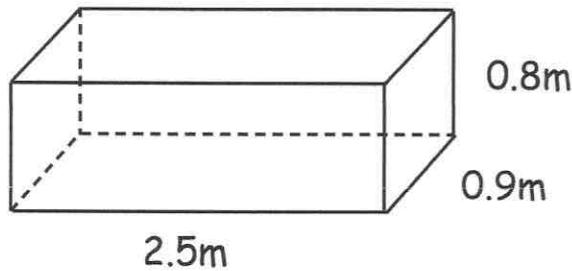
$$11 \times 11 = 121$$

$$\begin{array}{r}
 77 \\
 77 \\
 77 \\
 \hline
 77 \\
 121 \\
 \hline
 121 \\
 + 33 \\
 \hline
 550
 \end{array}$$

550 cm<sup>2</sup>

(3)

8. Shown below is a cuboid.



Work out the surface area of the cuboid.  
Include suitable units.

$$2.5 \times 0.8 = 2$$

$$\begin{array}{r}
 2 \\
 2 \\
 2.75 \\
 \hline
 2.75
 \end{array}$$

$$2.5 \times 0.9 = 2.25$$

$$\begin{array}{r}
 2.25 \\
 2.25 \\
 \hline
 0.72
 \end{array}$$

$$0.8 \times 0.9 = 0.72$$

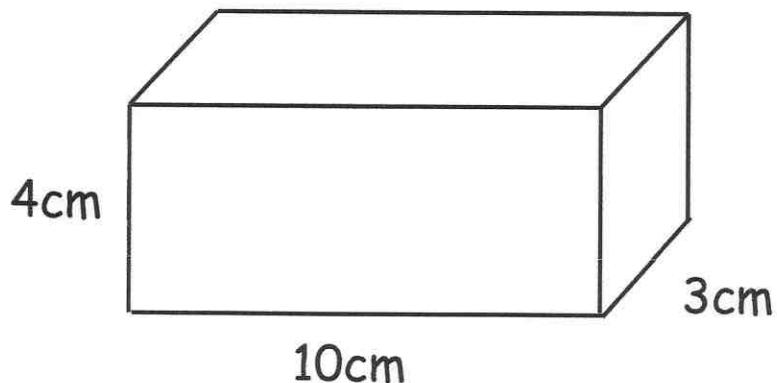
$$\begin{array}{r}
 0.72 \\
 0.72 \\
 \hline
 0.72
 \end{array}$$

$$\begin{array}{r}
 0.94 \\
 0.94 \\
 \hline
 0.94
 \end{array}$$

0.94 m<sup>2</sup>

(3)

9. Shown below is a cuboid.



Mary is trying to find the surface area of the cuboid.

She says the area of the front of the cuboid is  $40\text{cm}^2$

40

the area of the top of the cuboid is  $30\text{cm}^2$

40

the area of the side of the cuboid is  $12\text{cm}^2$

30

so the total surface area of the cuboid is  $82\text{cm}^2$

30

Is Mary correct?

30

Explain your answer.

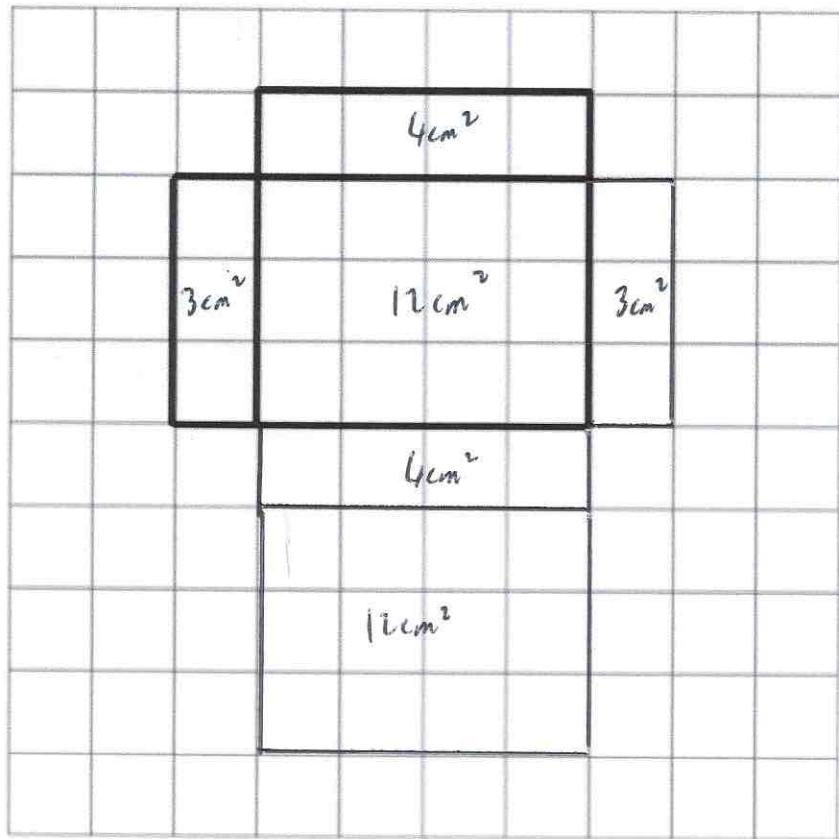
$$\begin{array}{r} 40 \\ 40 \\ 30 \\ 30 \\ \hline + 12 \\ \hline 164 \end{array}$$

No, Mary has not included the base, back or other side.

The total surface area is  $164\text{cm}^2$ .

(2)

10. Part of a net for a cuboid is shown on the centimetre grid below.



(a) Complete the net of the cuboid.

(2)

(b) Work out the total surface area of the cuboid.

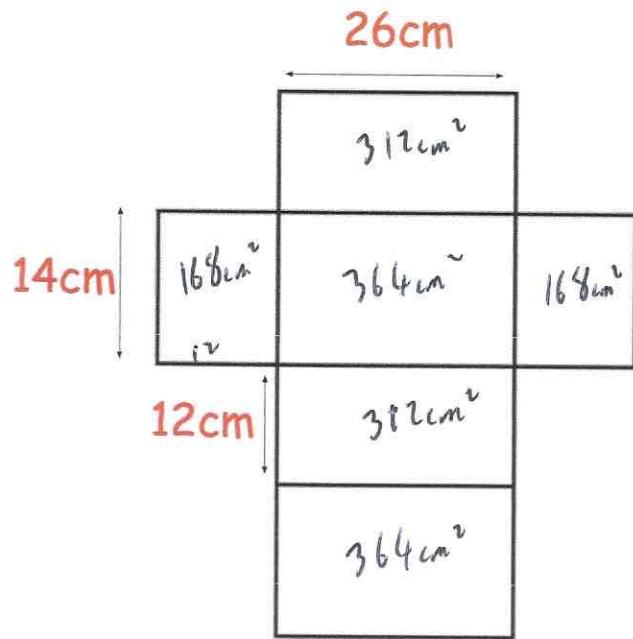
State the units of your answer.

$$12 + 12 + 3 + 3 + 4 + 4 = 38$$

$38 \text{ cm}^2$

(3)

11. A net of a cuboid is shown below.



The net is folded to create a cuboid.

168

Work out the total surface area of the cuboid.

168

312

312

$$12 \times 14 = 168$$

364

$$26 \times 12 = 312$$

364

$$14 \times 26 = 364$$

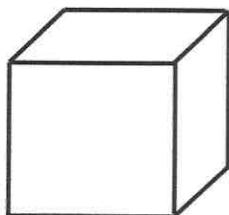
$\frac{364}{1688}$

1688

..... cm<sup>2</sup>

(3)

12. The surface area of a cube below is 384cm<sup>2</sup>



X

Work out the side length, x, of the cube.

$$384 \div 6 = 64$$

$$\sqrt{64} = 8$$

..... cm  
(2)

13. The volume of a cube is 2744cm<sup>3</sup>



Work out the surface area of the cube.

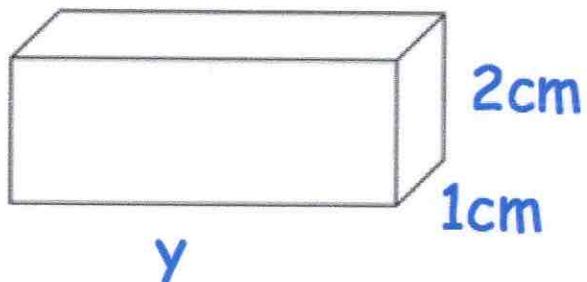
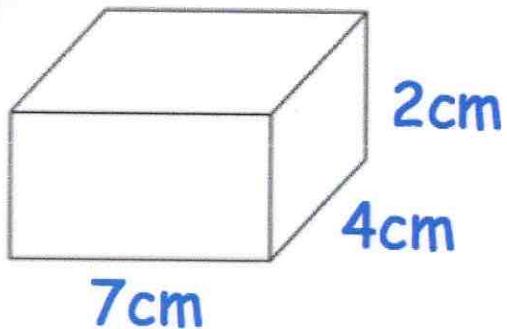
$$\sqrt[3]{2744} = 14$$

$$14 \times 14 = 196$$

$$196 \times 6 = 1176$$

1176cm<sup>2</sup>  
.....  
(3)

14. Shown below are two cuboids.



Both cuboids have the same surface area.

Find y.

$$7 \times 4 = 28$$

$$\begin{array}{r} 28 \\ 28 \end{array}$$

$$4 \times 2 = 8$$

$$\begin{array}{r} 8 \\ 8 \end{array}$$

$$2 \times 7 = 14$$

$$\begin{array}{r} 14 \\ 14 \end{array}$$

$$\begin{array}{r} +14 \\ \hline 100 \text{ cm}^2 \end{array}$$

$$2 \times 1 = 2$$

$$\begin{array}{r} 2 \\ 2 \end{array}$$

$$2 \times y = 2y$$

$$\begin{array}{r} 2y \\ 2y \end{array}$$

$$1 \times y = y$$

$$\begin{array}{r} y \\ y \end{array}$$

$$\begin{array}{r} +y \\ \hline 6y + 4 \end{array}$$

$$6y + 4 = 100$$

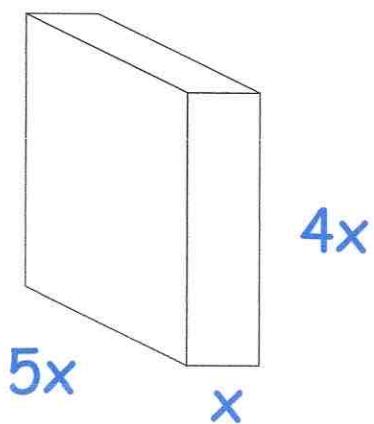
$$6y = 96$$

$$y = 16$$

$$16$$

..... cm  
(5)

15. Shown below is a cuboid.



The total surface area of the cuboid is  $280.72\text{cm}^2$

Find x

$$5x \times x = 5x^2$$

$$4x \times x = 4x^2$$

$$5x \times 4x = 20x^2$$

$$20x^2 + 20x^2 + 5x^2 + 5x^2 + 4x^2 + 4x^2 = 58x^2$$

$$58x^2 = 280.72$$

$$x^2 = 4.84$$

$$x = 2.2$$

2.2

(5)