

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)

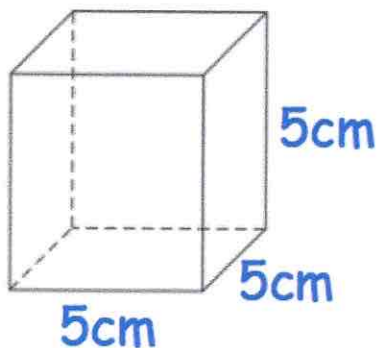
Video 310



Answers and Video Solutions



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



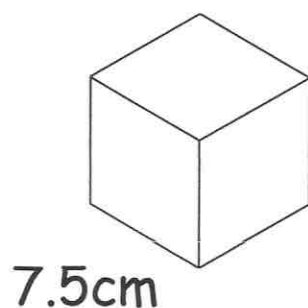
Work out the total surface area of the cube.

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

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

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

- 2.



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

$$7.5 \times 7.5 = 56.25$$

$$56.25 \times 6 = 337.5$$

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

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

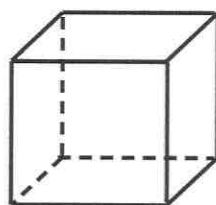


$$7 \times 7 = 49$$

$$49 \times 6 = 294$$

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  $10 \times 10 \times 10 = 1000$

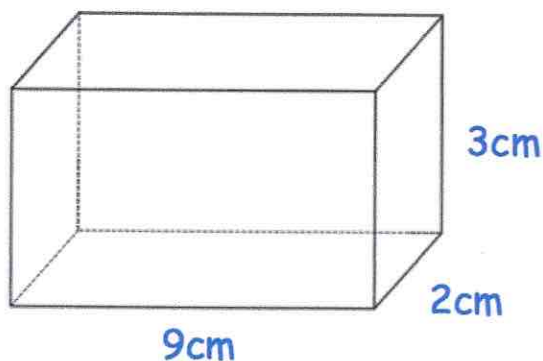
Is Joshua correct?

Explain your answer.

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

(1)

5. Shown below is solid cuboid.

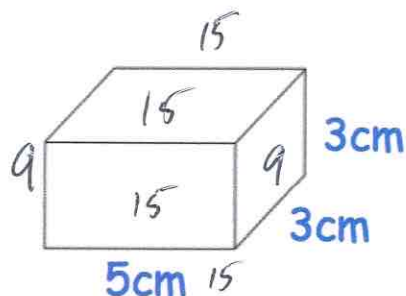


Work out the total surface area of the cuboid.

$$\begin{array}{r}
 9 \times 2 = 18 \\
 2 \times 3 = 6 \\
 9 \times 3 = 27 \\
 \hline
 18 \\
 6 \\
 27 \\
 + 27 \\
 \hline
 102
 \end{array}$$

..... $102$ ..... $\text{cm}^2$   
(3)

6. Here is a cuboid.

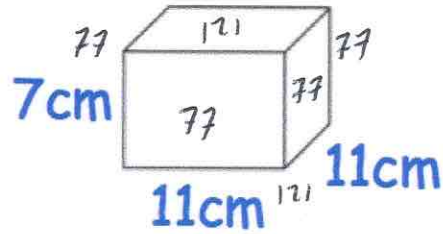


Calculate the surface area of the cuboid.

$$\begin{array}{r}
 5 \times 3 = 15 \\
 3 \times 3 = 9 \\
 \hline
 9 \\
 9 \\
 15 \\
 15 \\
 15 \\
 + 15 \\
 \hline
 78
 \end{array}$$

..... $78$ ..... $\text{cm}^2$   
(3)

7.



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

$$7 \times 11 = 77$$

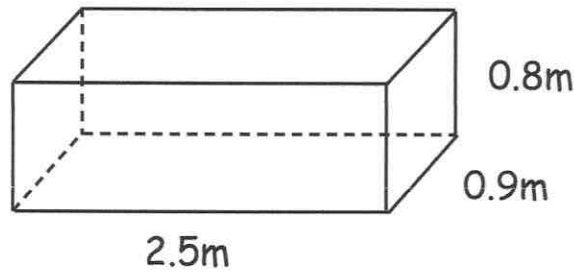
$$11 \times 11 = 121$$

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

$$550 \text{ cm}^2$$

(3)

8. Shown below is a cuboid.



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

$$2.5 \times 0.8 = 2$$

$$2.5 \times 0.9 = 2.25$$

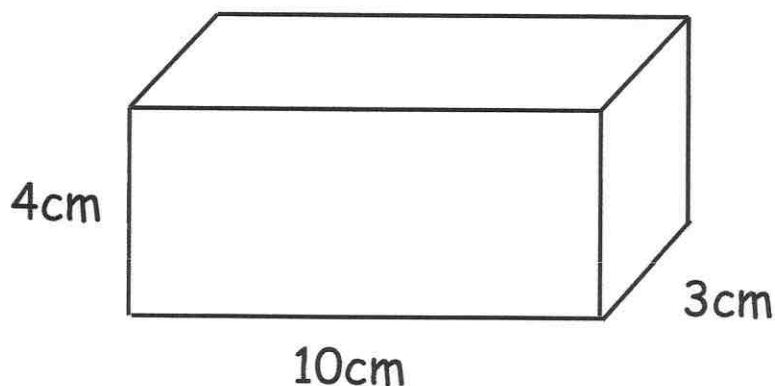
$$0.8 \times 0.9 = 0.72$$

$$\begin{array}{r} 2 \\ 2 \\ 2.25 \\ 2.25 \\ 0.72 \\ 0.72 \\ \hline 9.94 \end{array}$$

$$9.94 \text{ m}^2$$

(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  $40\text{cm}^2$   
the area of the top of the cuboid is  $30\text{cm}^2$   
the area of the side of the cuboid is  $12\text{cm}^2$   
so the total surface area of the cuboid is  $82\text{cm}^2$

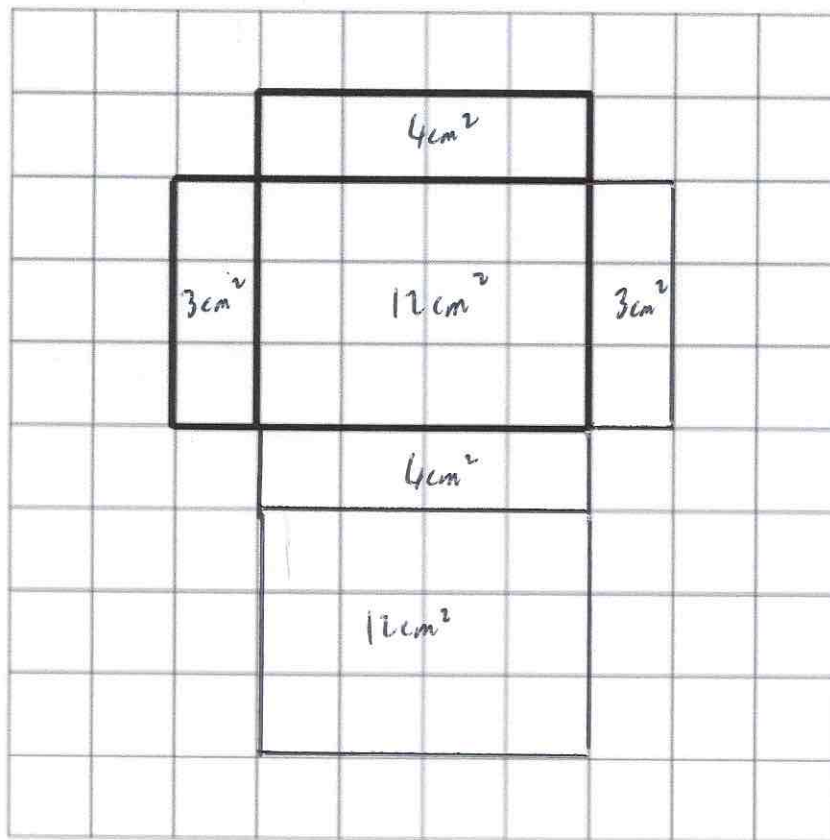
Is Mary correct?  
Explain your answer.

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

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)

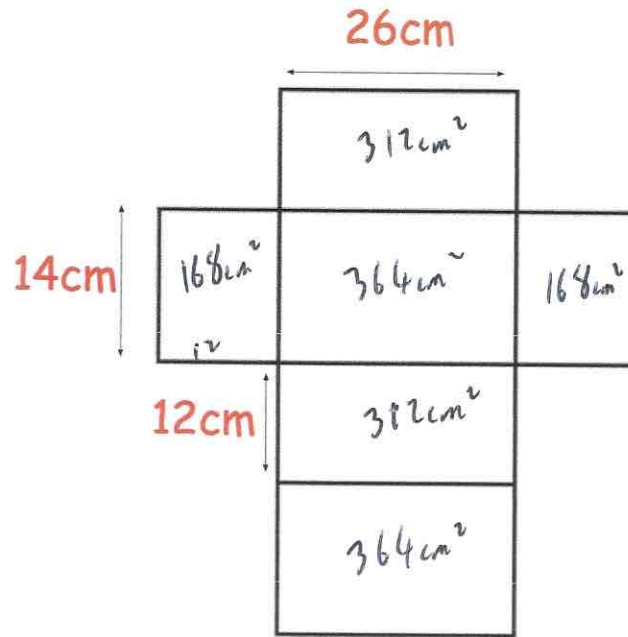
- (b) Work out the total surface area of the cuboid.  
State the units of your answer.

$$12 + 12 + 9 + 9 + 8 + 8 = 58$$

$$58 \text{ cm}^2$$

(3)

11. A net of a cuboid is shown below.



The net is folded to create a cuboid.

Work out the total surface area of the cuboid.

$$12 \times 14 = 168$$

$$26 \times 12 = 312$$

$$14 \times 26 = 364$$

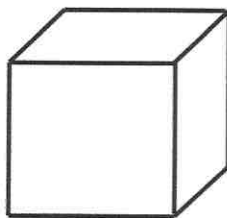
$$\begin{array}{r} 168 \\ 168 \\ 312 \\ 312 \\ 364 \\ + 364 \\ \hline 1688 \end{array}$$

$$\begin{array}{r} 1688 \\ \hline \end{array} \text{cm}^2$$

(3)



12. The surface area of a cube below is  $384\text{cm}^2$



x

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

$$384 \div 6 = 64$$

$$\sqrt{64} = 8$$

8

.....cm  
(2)

13. The volume of a cube is  $2744\text{cm}^3$



Work out the surface area of the cube.

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

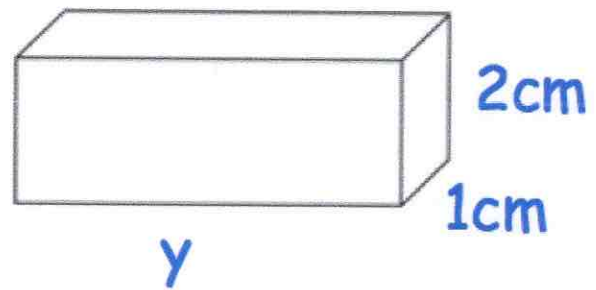
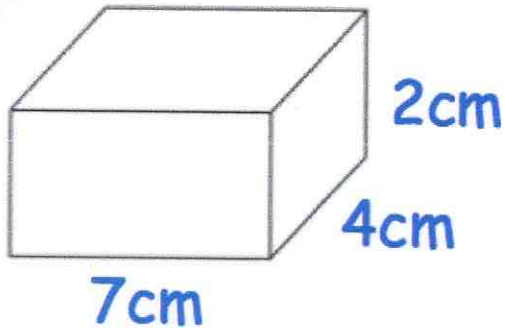
$$14 \times 14 = 196$$

$$196 \times 6 = 1176$$

1176cm<sup>2</sup>

.....  
(3)

14. Shown below are two cuboids.



Both cuboids have the same surface area.

Find  $y$ .

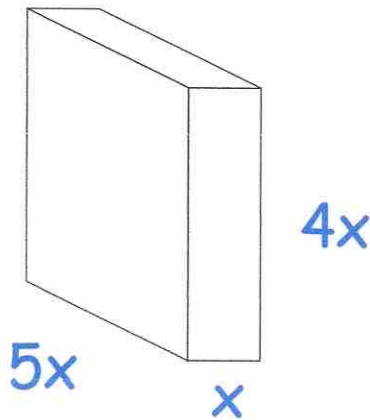
$$\begin{array}{r}
 7 \times 4 = 28 \\
 4 \times 2 = 8 \\
 2 \times 7 = 14 \\
 \hline
 28 \\
 28 \\
 8 \\
 8 \\
 14 \\
 + 14 \\
 \hline
 100 \text{ cm}^2
 \end{array}$$

$$\begin{array}{r}
 2 \times 1 = 2 \\
 2 \times y = 2y \\
 1 \times y = y \\
 \hline
 2 \\
 2 \\
 2y \\
 2y \\
 y \\
 y \\
 + y \\
 \hline
 6y + 4
 \end{array}$$

$$\begin{aligned}
 6y + 4 &= 100 \\
 6y &= 96 \\
 y &= 16
 \end{aligned}$$

$$\begin{array}{r}
 16 \\
 \hline
 \text{.....cm} \\
 (5)
 \end{array}$$

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)