



The National  
Orthodox School  
Shmaisani

Name:

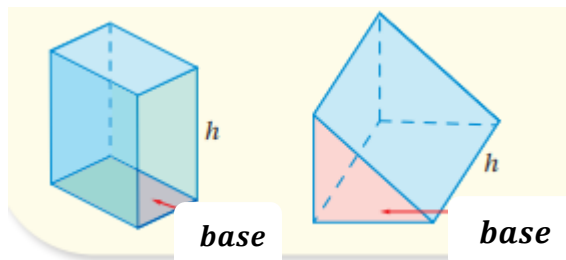
Worksheet(5) total surface area of prisms and cylinders

Grade:8(A, B)

Subject : Math (Unit (7):Mensuration of planes and solids)

Date :

**Objective: Find the total surface area of prisms and cylinders**



**Total surface area of the prism**  
**= lateral surface area + 2 × area of the base**

**lateral surface area**  
**= perimeter of the base × height(h)**

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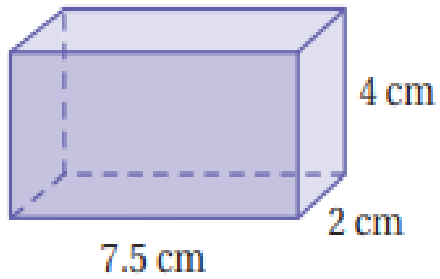
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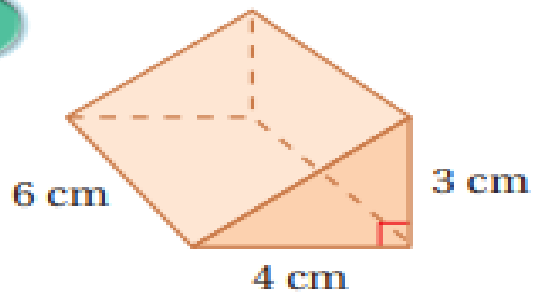
معتمدة من

*Exercise 1: find the total surface area of the following solids:*

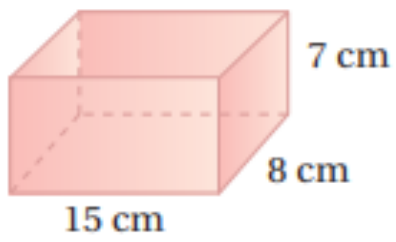
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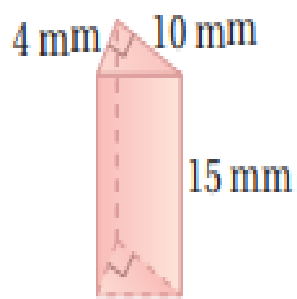
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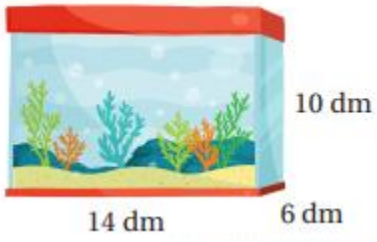
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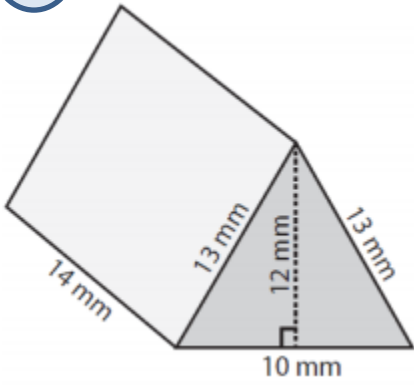
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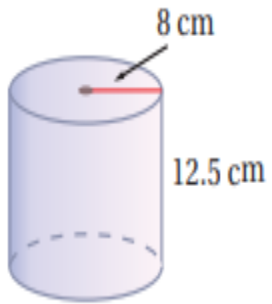
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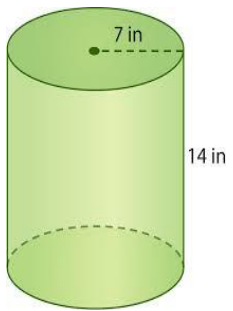
6



7



8



***Exercise (2): The curved surface area of a cylinder is  $220\text{cm}^2$ . If the height is 5 cm. calculate its diameter.***

***(Take  $\pi = \frac{22}{7}$ )***

***Exercise (3):***

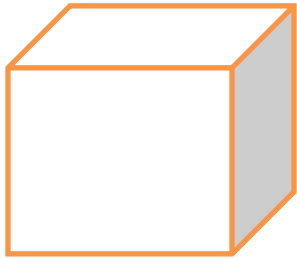
***A Cube has a lateral surface area of  $121\text{m}^2$***

***a) What is the area of one face?***

***b) What is the length of each side ?***

**Exercise (4): find the missing dimension in each of the following solids:**

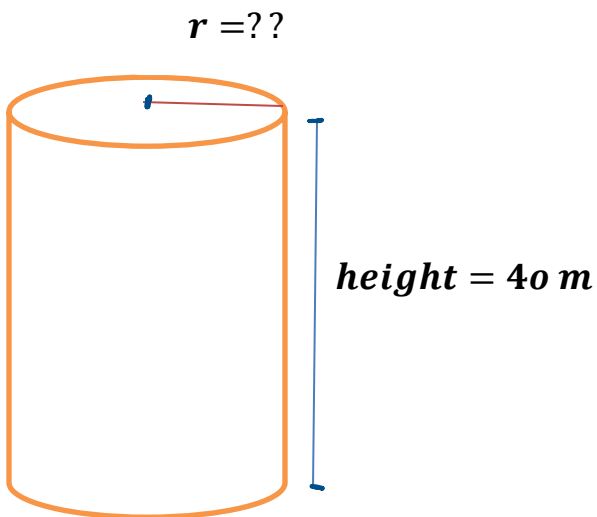
***cube***



$$x = ??$$

$$\text{Total surface area} = 150 \text{ cm}^2$$

***cylinder***



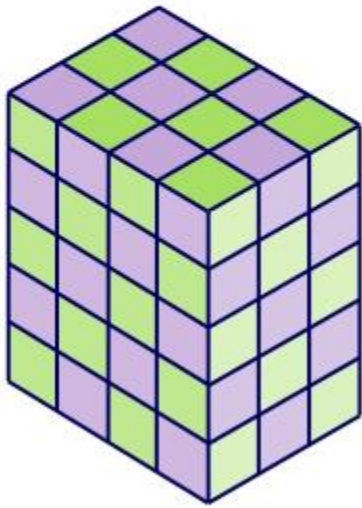
$$\text{curved surface area} = 3520 \text{ cm}^2$$

$$\text{(Take } \pi = \frac{22}{7} \text{)}$$

***Exercise (5):***

**Chequered cuboid problem**

This cuboid is made from alternate purple and green centimetre cubes.



What is its surface area?

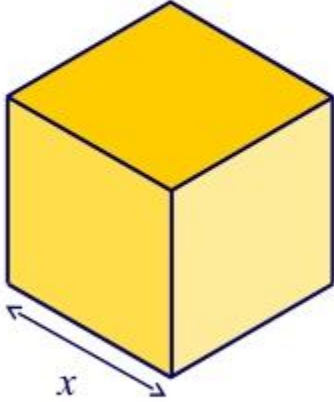
A large, empty rounded rectangular box with an orange border, intended for the student to write their answer to the surface area question.





## Surface area of a cube

How can we find the surface area of a cube of length  $x$ ?



All six faces of a cube have the same area.

The area of each face is  $x \times x = x^2$

Therefore,

$$\text{Surface area of a cube} = 6x^2$$

$$\begin{aligned} \text{Lateral surface area of a cube} &= 4 \times \text{area of one face} \\ &= 4(\text{side length})^2 \end{aligned}$$

$$\begin{aligned} \text{Total surface area of a cube} &= 6 \times \text{area of one face} \\ &= 6(\text{side length})^2 \end{aligned}$$