

# 4.3

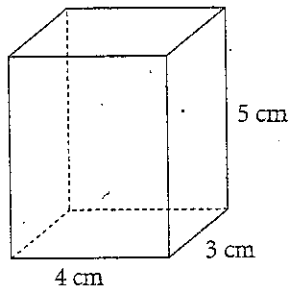
## Surface Area of a Right Rectangular Prism



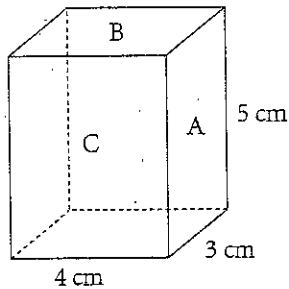
### Quick Review

- The surface area of a rectangular prism is the sum of the areas of its rectangular faces. The surface area is the same as the area of the prism's net.

To determine the surface area of this rectangular prism:



Identify each rectangle with a letter.



Rectangle A has area  $3 \text{ cm} \times 5 \text{ cm} = 15 \text{ cm}^2$

Rectangle B has area  $4 \text{ cm} \times 3 \text{ cm} = 12 \text{ cm}^2$

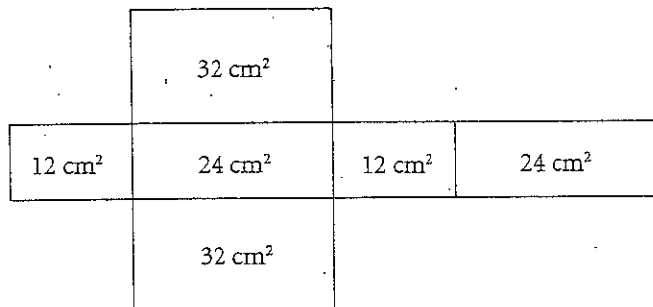
Rectangle C has area  $4 \text{ cm} \times 5 \text{ cm} = 20 \text{ cm}^2$

$$\begin{aligned} \text{Surface area} &= 2 \times 15 \text{ cm}^2 + 2 \times 12 \text{ cm}^2 + 2 \times 20 \text{ cm}^2 \\ &= 30 \text{ cm}^2 + 24 \text{ cm}^2 + 40 \text{ cm}^2 \\ &= 94 \text{ cm}^2 \end{aligned}$$

The surface area of the rectangular prism is  $94 \text{ cm}^2$ .

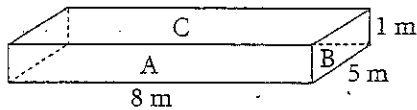
### Practice

- The diagram shows the net of a right rectangular prism. The area of each face is given. Calculate the surface area of the prism.



Area = \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  $\text{cm}^2$

2. Determine the surface area of the rectangular prism.



Rectangle A has area \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

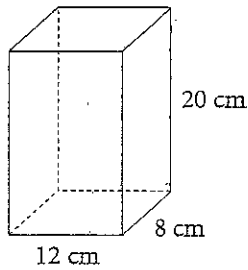
Rectangle B has area \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

Rectangle C has area \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

Surface area =  $2 \times$  \_\_\_\_\_ +  $2 \times$  \_\_\_\_\_ +  $2 \times$  \_\_\_\_\_  
= \_\_\_\_\_

3. Glenda and Louis each design a rectangular package.  
Whose package has the greater surface area? Show your work.

Glenda's package:



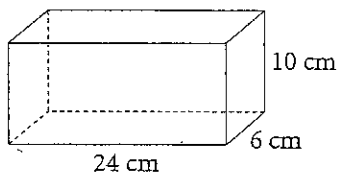
SA = \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

= \_\_\_\_\_

= \_\_\_\_\_

\_\_\_\_\_

Louis's package:



SA = \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

= \_\_\_\_\_

= \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ > \_\_\_\_\_ So, \_\_\_\_\_ package has the greater surface area.

4. The surface area of a cube is  $294 \text{ cm}^2$ .

- a) What is the area of each face of the cube?

Area of each face = \_\_\_\_\_  $\div$  \_\_\_\_\_ = \_\_\_\_\_

- b) What is the length of one edge of the cube?

Edge length = \_\_\_\_\_

5. An office building is in the shape of a right rectangular prism with height 200 m, length 60 m, and width 40 m. The top quarter of each vertical face of the building is to be covered with a large banner advertising a major sporting event. What is the total surface area to be covered with banners?

$\frac{1}{4} \times$  \_\_\_\_\_ = \_\_\_\_\_

Total area to be covered =  $2 \times$  \_\_\_\_\_  $\times$  \_\_\_\_\_ +  $2 \times$  \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_