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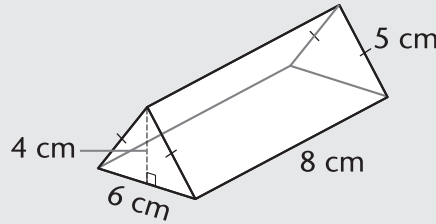
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EXAMPLE

Determine the surface area and volume of the triangular prism.



$$\begin{aligned} \text{Surface area of the prism} &: \frac{6 \times 4}{2} \times 2 + 8 \times 6 + 8 \times 5 \times 2 \\ &= 24 + 48 + 80 = 152 \end{aligned}$$

Answer : The total surface area is 152 cm².

$$\text{Volume of the prism} : \frac{6 \times 4}{2} \times 8 = 24 \times 4 = 96$$

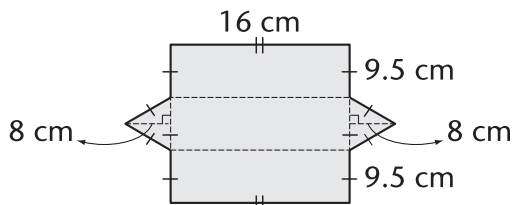
Answer : The volume of the prism is 96 cm³.

Solve the problems. Show your work.

- ① How many edges are there on a triangular prism?

Answer : _____

- ② Bill is going to form a triangular prism with the net below.



- a. Determine the surface area of the prism.

Answer : _____

- b. Determine the volume of the prism.

Answer : _____

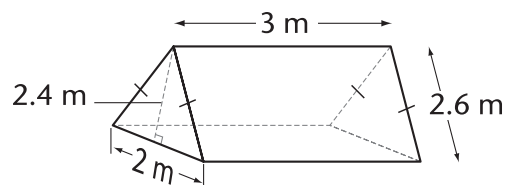
Triangular prism

Volume
= Base Area x Height
= $(\frac{a \times b}{2}) \times h$

Surface area
= Sum of areas of surfaces
= $(\frac{a \times b}{2}) \times 2 + (c \times h) + (b \times h) + (a \times h)$

← **Read this first.**

- ③ Katie is making a tent as shown. Determine the amount of canvas needed to make the tent.



Answer : _____

④ The AA chocolate bar is available in 2 sizes as shown.

a. How much cardboard is needed to make each box?

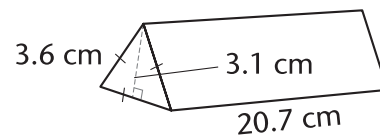
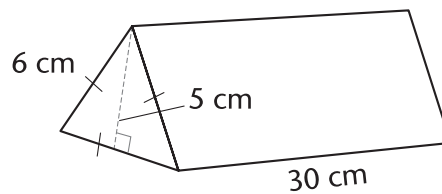
Answer : _____

b. What is the volume of each box of chocolate? (correct to the nearest whole number)

Answer : _____

c. If the small one costs \$1.99 and the big one costs \$5.99, which is a better buy?

Answer : _____



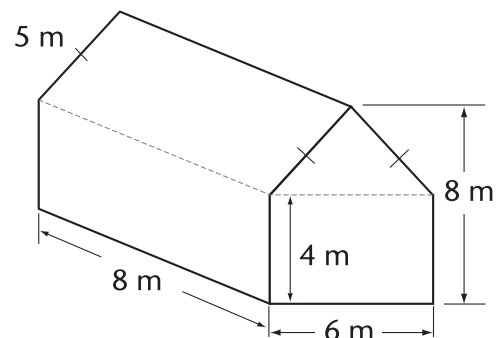
⑤ The diagram shows the dimensions of a farm shed.

a. Determine the amount of plywood needed to build the shed.

Answer : _____

b. Determine the space occupied by the shed.

Answer : _____



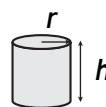
⑥ There are 2 cylindrical soup cans in Tim's kitchen. One soup can has a diameter of 6.8 cm and a height of 9.7 cm. The other soup can has a diameter of 10 cm and a height of 11.8 cm.

a. Determine the surface area of each soup can. (correct to 1 decimal place)

Answer : _____

b. Determine the volume of each soup can. (correct to 1 decimal place)

Answer : _____

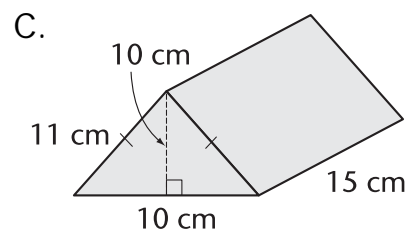
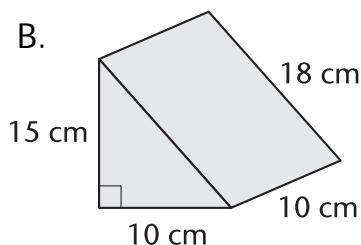
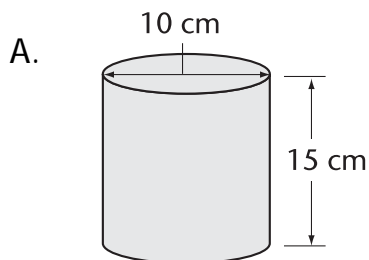


Read this first.



- Surface area of a cylinder
 $= (\pi \times r^2) \times 2 + (2\pi r \times h)$
 $= 2\pi r^2 + 2\pi r h$
 $= 2\pi r (r + h)$
- Volume of a cylinder
 $= (\pi \times r^2) \times h$

⑦ Popcorn is available in the 3 containers shown.



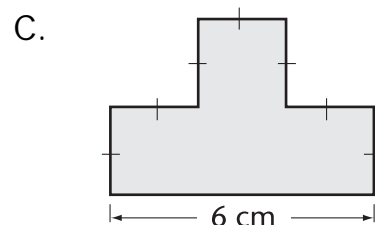
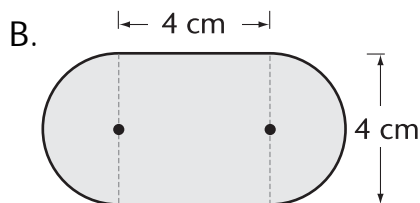
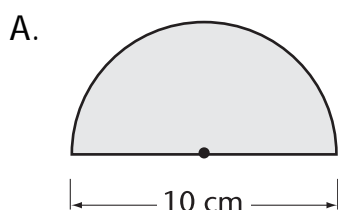
a. Which container has the largest surface area, assuming the containers are closed?

Answer : _____

b. Which container has the largest volume?

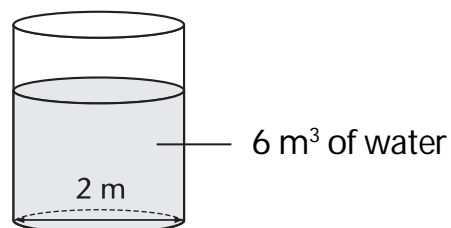
Answer : _____

⑧ The bases of three 10 cm high containers are shown below. What are their volumes?



Answer : _____

⑨ An inflatable pool is cylindrical in shape with a diameter of 2 m. 6 m^3 of water is put in the pool. Determine the depth of the water. (correct to the nearest cm)




Answer : _____

⑩ Another cylindrical pool having a diameter of 2.4 m is filled with water to a depth of 1 m. Determine the volume of the water in the pool in litres.

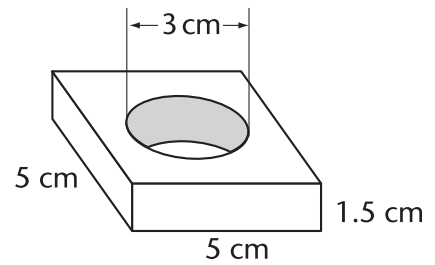
Answer : _____

Read this first.

- $1 \text{ m}^3 = 1\,000\,000 \text{ cm}^3$
- $1000 \text{ cm}^3 = 1 \text{ L}$
- $1 \text{ m}^3 = (1\,000\,000 \div 1000) \text{ L}$
= 1000 L



- ⑪ A wooden napkin ring has the dimensions shown. Determine its volume.



Answer : _____

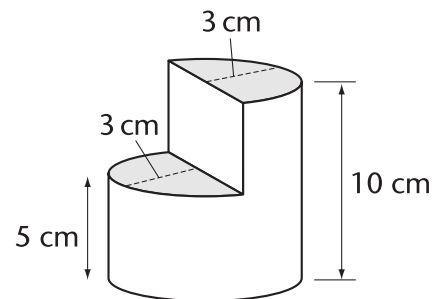
- ⑫ A solid shape has the dimensions shown.

- a. Determine its surface area.

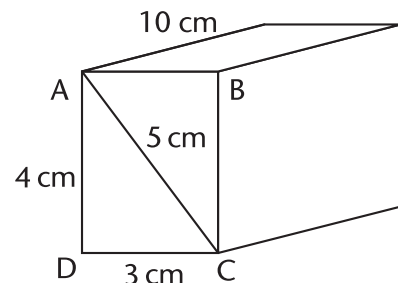
Answer : _____

- b. Determine its volume.

Answer : _____



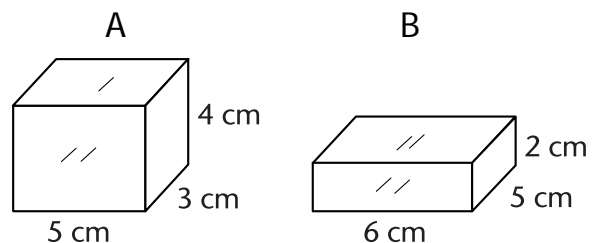
- ⑬ A solid rectangular block has the dimensions shown. It is then cut open along the line AC which is 5 cm long. Determine the total surface area of the block after cutting.



Answer : _____

CHALLENGE

- ① The 2 ice blocks A and B have the same volume but they melt at different rates. Which one will melt faster? Why?



Answer : _____

- ② What happens to the volume of a prism if the height of the prism is doubled and the area of the base is tripled?

Answer : _____