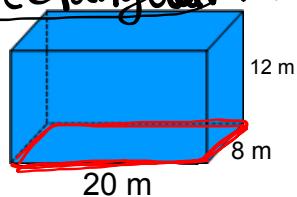


Warm Up Gr. 8

May 29, 2017Find the ~~base~~ volume (Show all work)Rectangular Prism

$$A_{\text{base}} = b \times h$$

$$= 20 \text{ m} \times 8 \text{ m}$$

$$= 160 \text{ m}^2$$

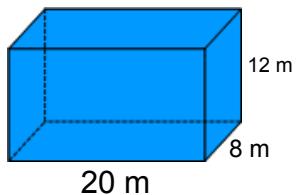
$$\begin{aligned} \text{Volume} &= A_{\text{base}} \times H \\ &= 160 \text{ m}^2 \times 12 \text{ m} \\ &= 1920 \text{ m}^3 \end{aligned}$$

**Warm Up Grade 8**  
solution

Jan. 22, 2014



Find the volume (Show all work)



Area of base = L x W

= 20 m x 8 m

= 160 m<sup>2</sup>

V = Area of base x height

= 160 m<sup>2</sup> x 12 m

= 1920 m<sup>3</sup>

pg 197

1. In Connect, the area of the base is  $30\text{cm}^2$ , so if the volume is  $210\text{cm}^3$  then the height must be 7 cm

$$V = A_{\text{base}} \times h$$

$$210 = 30 \times \underline{7}$$

2. No, it does not matter which face you use as the base.

Draw sketches for each

a)  $V_{\text{ol}} = A_{\text{base}} \times h$

$$= 40 \times 3$$

$$= 120\text{cm}^3$$

b)  $V_{\text{ol}} = A_{\text{base}} \times h$

$$= 81 \times 9$$

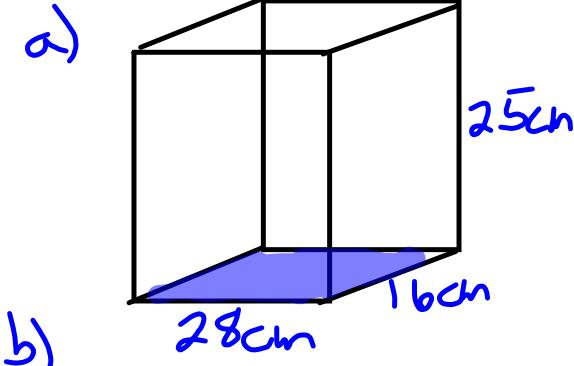
$$= 729\text{cm}^3$$

c)  $V_{\text{ol}} = A_b \times h$

$$= 200 \times 30$$

$$= 6000\text{cm}^3$$

5.



b)

$$\begin{aligned} A_{\text{base}} &= l \times w \\ &= 28 \times 16 \\ &= 448 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} V &= A_b \times h \\ &= 448 \times 25 \\ &= 112 \times 4 \times 25 \\ &= 11200 \text{ cm}^3 \end{aligned}$$

## b) Sketches

a)  $A_{\text{base}} = l \times w$

$$\begin{aligned} A &= 5 \times 8 \\ &= 40 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} V &= A_b \times h \\ &= 40 \times 3 \\ &= 120 \text{ cm}^3 \end{aligned}$$

B  $A_{\text{base}} = l \times w$

$$\begin{aligned} &= 8 \times 3 \\ &= 24 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} V &= A_b \times h \\ &= 24 \times 5 \\ &= 120 \text{ cm}^3 \end{aligned}$$

C  $A_{\text{base}} = l \times w$

$$\begin{aligned} &= 5 \times 3 \\ &= 15 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} V &= A_b \times h \\ &= 15 \times 8 \\ &= 120 \text{ cm}^3 \end{aligned}$$

b) The volume is the same for each

c) No the volume doesn't change

when you change the position,  
the dimensions are still 3, 5 and 8  
cm

## 7. Sketches

$$\text{a) } A_b = l \times w \\ = 5 \times 3 \\ = 15 \text{ cm}^2$$

$$V = A_b \times h \\ = 15 \times 4.5 \\ = 67.5 \text{ cm}^3$$

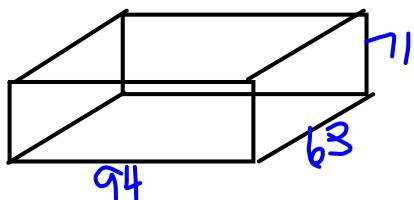
$$\text{b) } A_b = l \times w \\ = 7.5 \times 3.2 \\ = 24 \text{ cm}^2$$

$$V = A_b \times h \\ = 24 \times 4 \\ = 96 \text{ cm}^3$$

$$\text{c) } A_b = l \times w \\ = 3.5 \times 2.4 \\ = 8.4 \text{ cm}^2$$

$$V = A_b \times h \\ = 8.4 \times 3 \\ = 25.2 \text{ cm}^3$$

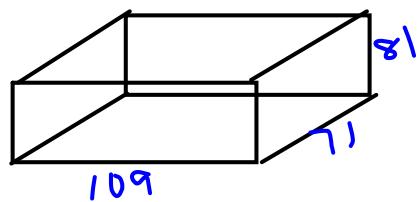
## 9. Rick



$$A_{base} = l \times w \\ = 94 \times 63 \\ = 5922 \text{ cm}^2$$

$$Vol = A_b \times h \\ = 5922 \times 71 \\ = \underline{\underline{420462}} \text{ cm}^3$$

## Susan



$$A_b = l \times w \\ = 109 \times 71 \\ = 7739 \text{ cm}^2$$

$$Vol = A_b \times h \\ = 7739 \times 81 \\ = \underline{\underline{626859}} \text{ cm}^3$$

$$\text{b) } 400 \times 1 = 400$$

$$400 \times 2 = 800$$

$$400 \times 1.5 = 600$$

You would multiply the volume of Rick's by about 1.5 to get Susan's volume

Finding Volume of Triangular Prisms*Base is always a △*

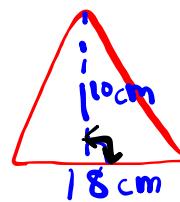
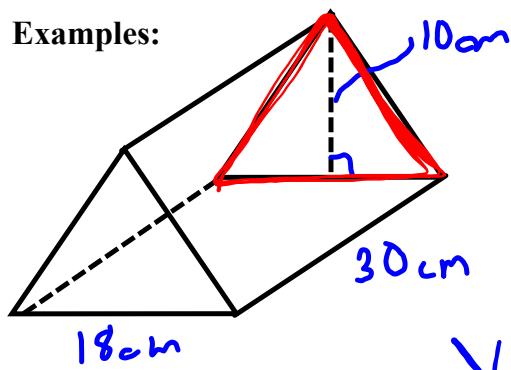
You can find the volume of any prism using the formula we stated yesterday.

$$\text{Volume} = \text{Area of base} \times \text{height}$$

First, determine the shape of the base, then find its area, finally multiply by the height of the prism.

Base shape of a triangular prism is ALWAYS a \_\_\_\_\_

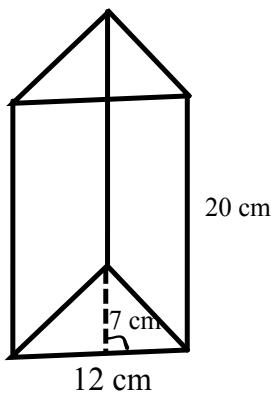
Examples:



$$\begin{aligned} A_{\Delta} &= \frac{b \times h}{2} \\ &= \frac{18 \text{ cm} \times 10 \text{ cm}}{2} \\ &= \frac{180 \text{ cm}^2}{2} \\ &= 90 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} V &= A_{\text{base}} \times H \\ &= 90 \text{ cm}^2 \times 30 \text{ cm} \\ &= 2700 \text{ cm}^3 \end{aligned}$$

Ex 2)



$$\begin{aligned} A_{\Delta} &= \frac{b \times h}{2} \\ &= \frac{12 \text{ cm} \times 7 \text{ cm}}{2} \\ &= \frac{84 \text{ cm}^2}{2} \\ &= 42 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \text{Volume} &= A_{\text{base}} \times H \\ &= 42 \text{ cm}^2 \times 20 \text{ cm} \\ &= 840 \text{ cm}^3 \end{aligned}$$

# Class/Homework

page 205-206

#5, ~~#6~~<sup>abc</sup>, #7, #8, ~~#9~~(don't sketch), #10, #11

Test Next week on Unit 4 Volume & Surface Area

June 6, 2017

Test Date???