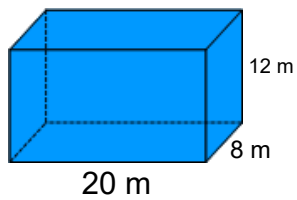


Lesson 3
Gr 8 Elearning
Ch 4

Warm Up Grade 8



Find the volume (Show all work)

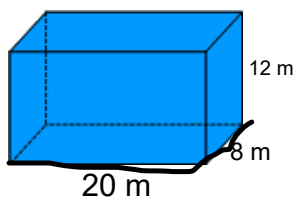




Warm Up Grade 8 solution



Find the volume (Show all work)



$$\begin{aligned} \text{Area of base} &= L \times W \\ &= 20 \text{ m} \times 8 \text{ m} \\ &= \underline{160 \text{ m}^2} \end{aligned}$$

$$\begin{aligned} V &= \text{Area of base} \times \text{height} \\ &= 160 \text{ m}^2 \times 12 \text{ m} \\ &= 1920 \text{ m}^3 \end{aligned}$$

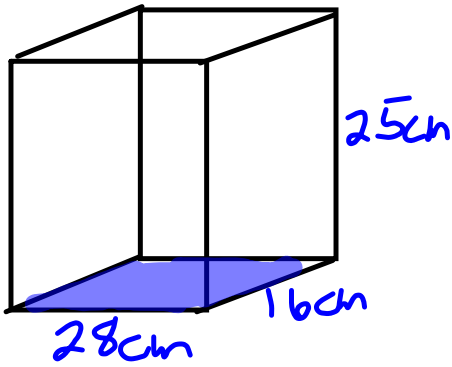
$$\begin{aligned} V &= L \times W \times H \\ &= 20 \times 8 \times 12 \end{aligned}$$

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Solutions

5.

a)



b)

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

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

b Sketches

$$\begin{aligned}
 \text{a) } A_{\text{base}} &= l \times w \\
 A &= 5 \times 8 \\
 &= 40 \text{ cm}^2
 \end{aligned}$$

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

$$\begin{aligned}
 \text{B } A_{\text{base}} &= l \times w \\
 &= 8 \times 3 \\
 &= 24 \text{ cm}^2
 \end{aligned}$$

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

$$\begin{aligned}
 \text{C } A_{\text{base}} &= l \times w \\
 &= 5 \times 3 \\
 &= 15 \text{ cm}^2
 \end{aligned}$$

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

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

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

$$\begin{aligned} V &= A_b \times h \\ &= 15 \times 4.5 \\ &= \underline{67.5 \text{ cm}^3} \end{aligned}$$

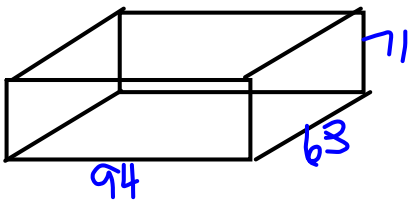
$$\begin{aligned} \text{b) } A_b &= l \times w \\ &= 7.5 \times 3.2 \\ &= 24 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} V &= A_b \times h \\ &= 24 \times 4 \\ &= \underline{96 \text{ cm}^3} \end{aligned}$$

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

$$\begin{aligned} V &= A_b \times h \\ &= 8.4 \times 3 \\ &= \underline{25.2 \text{ cm}^3} \end{aligned}$$

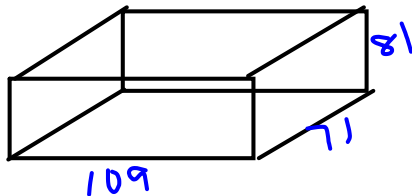
9. Rick



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

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

Susan



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

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

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

$$400 \times 2 = 800$$

$$400 \times 1.5 = 600$$

$$\begin{aligned} 626859 &\div 420462 \\ &= 1.49 \end{aligned}$$

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

Finding Volume of Triangular Prisms

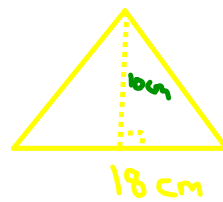
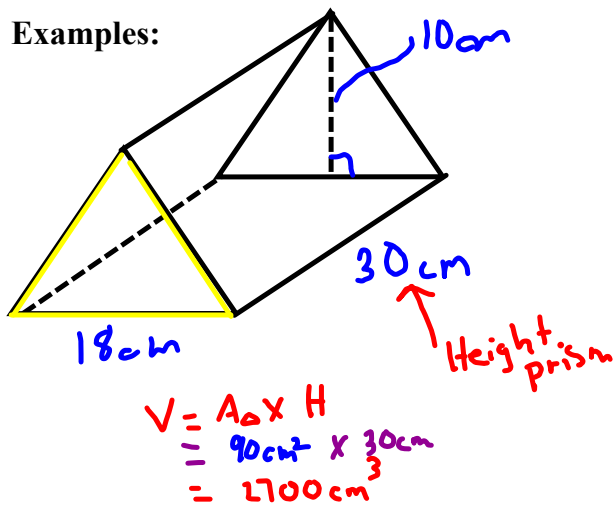
You can find the volume of any prism using the formula we stated yesterday.

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

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

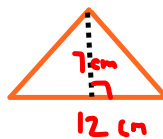
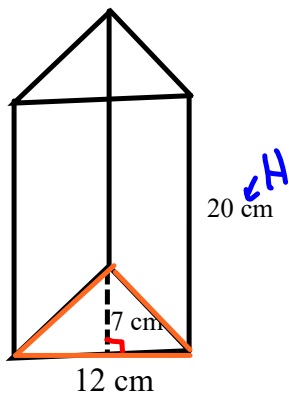
Base shape of a triangular prism is ALWAYS a TRIANGLE

Examples:



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

Ex 2)



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

$$A_{\Delta} = 42 \text{ cm}^2$$

$$\begin{aligned} V_{\text{prism}} &= A_b \times H \\ &= 42 \text{ cm}^2 \times 20 \text{ cm} \\ &= 840 \text{ cm}^3 \end{aligned}$$

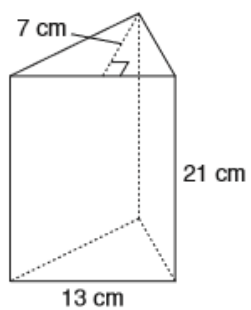
Class/Homework

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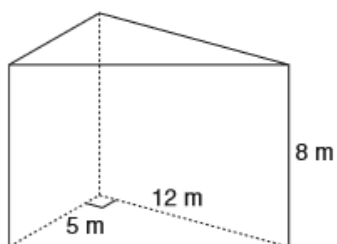
#5, #6,

5. Find the volume of each triangular prism.

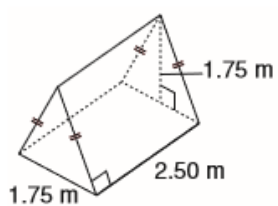
a)



b)



c)



Apply

6. Find the volume of each prism.

