

Volume of a Prism Continued

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

Examples:

What is the height of a right rectangular prism if the volume is 64cm^3 and the area of the base is 16cm^2 ?

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

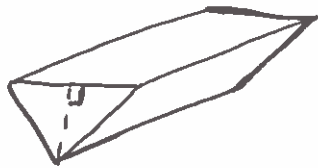
$$64 = (16)(h)$$

$$\frac{64}{16} = \frac{16h}{16}$$

$$4\text{cm} = h$$

Think back to equations $\Rightarrow 64 = 16h$
How do you "get rid" of 16?

2. A water trough is shown below. If it has a right triangle prism base area of 2500cm^2 and a height of 100cm , how much water can be put in before it overflows.

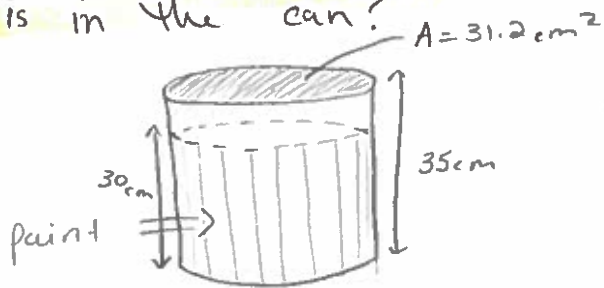


$$V = A_{\text{base}} \times h$$

$$V = (2500)(100)$$

$$= 250,000\text{cm}^3$$

3. A can of paint has a base area of 31.2cm^2 , and the height is 35cm . When the can is opened the paint only comes up to a height of 30cm . What volume of soup is in the can?

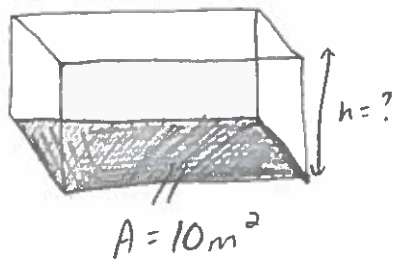


The area of the base will not change because the shape will always be a circle.

* Use 30cm because volume of paint not volume of can is asked for!

$$\begin{aligned} V &= A_{\text{base}} \times h \\ &= (31.2)(30) \\ &= 936\text{cm}^3 \end{aligned}$$

4. A rectangular prism shaped tank is to be filled with a maximum of 3m^3 of water. If the base area of the tank is 10m^2 what is the minimum height the tank should be?



$$\begin{aligned} V &= A_{\text{base}} \times h \\ 3 &= (10)(h) \\ \frac{3}{10} &= \frac{10h}{10} \end{aligned}$$

$$0.3\text{m} = h$$

Assignment Pg. 250 # 7-15.