

Unit 7: Volume

A: Introduction

Volume of all prisms is calculated using:

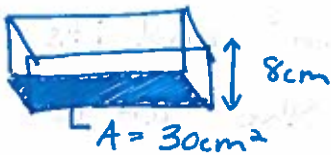
$$V = A_{\text{Base}} \times h$$

• A_{Base} will have units².

Examples:

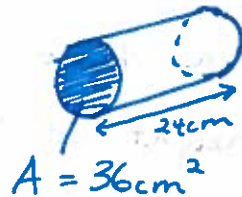
1. Determine the volume of each prism or cylinder.

a)



$$\begin{aligned} V &= A_{\text{base}} \times h \quad \checkmark \\ &= (30)(8) \quad \text{cm}^2 \times \text{cm} \quad \checkmark \\ &= 240 \text{ cm}^3 \quad \checkmark \\ &\quad \underline{\underline{3}} \end{aligned}$$

b)



$$\begin{aligned} V &= A_{\text{base}} \times h \quad \checkmark \\ &= (36)(24) \quad \checkmark \\ &= 864 \text{ cm}^3 \quad \checkmark \\ &\quad \underline{\underline{3}} \end{aligned}$$

2. What is the volume of the prism with:
height = 27 cm; area of base = 42 cm²

$$\begin{aligned} V &= A_{\text{base}} \times h \\ &= (42)(27) \\ &= 1134 \text{ cm}^3 \end{aligned}$$

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

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

$$64 = (16)h$$

$$64 = 16h$$

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

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

4. A can of paint has a base area of 31.2cm^2 and its height is 35cm . The height of the paint in the can is only 30cm . What volume of paint is in the can?

$$V_{\text{paint}} = A_{\text{base}} \times h_{\text{paint}}$$

$$= (31.2)(30)$$

$$= 936\text{cm}^2$$

* 35 is the entire can not just paint.

Assignment

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