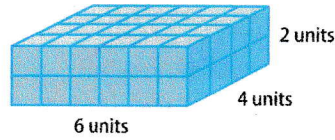


Volumes of Prisms

1 Volume of Prisms Recall that the volume of a solid is the measure of the amount of space the solid encloses. Volume is measured in cubic units.

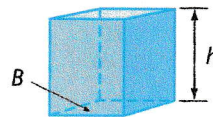
The rectangular prism at the right has $6 \cdot 4$ or 24 cubic units in the bottom layer. Since there are two layers, the total volume is $24 \cdot 2$ or 48 cubic units.



Key Concept Volume of a Prism

Words The volume V of a prism is $V = Bh$, where B is the area of a base and h is the height of the prism.

Model



Symbols

$$V = Bh$$

\hookrightarrow distance between the bases

Example 1 Volume of a Prism

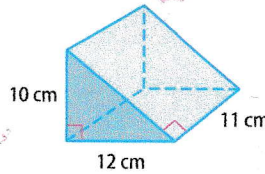
Find the volume of the prism.

Step 1 Find the area of the base B .

$$B = \frac{1}{2}bh$$

Area of a triangle

$$= \frac{1}{2}(12)(10) \text{ or } 60 \quad b = 12 \text{ and } h = 10$$



Step 2 Find the volume of the prism.

$$V = Bh$$

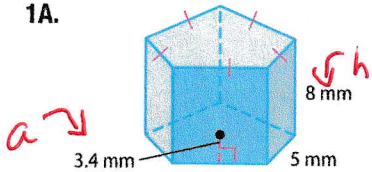
Volume of a prism

$$= 60(11) \text{ or } 660 \quad B = 60 \text{ and } h = 11$$

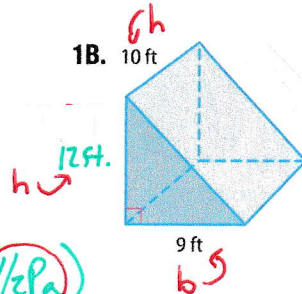
The volume of the prism is 660 cubic centimeters. or 660 cm³

Guided Practice

1A.



1B.



1B. Base is a triangle $A = \frac{1}{2}bh$

$$V = Bh$$

$$\frac{1}{2}9 \cdot 12 \cdot 10$$

$$V = 540 \text{ ft}^3$$

1A. Base is a pentagon ($A = \frac{1}{2}Pa$)

$$V = Bh$$

$$\frac{1}{2}Pa \cdot h$$

$$\frac{1}{2}(5 \cdot 5) 3.4 \cdot 8$$

$$340 \text{ mm}^3 \leftarrow \text{means volume}$$