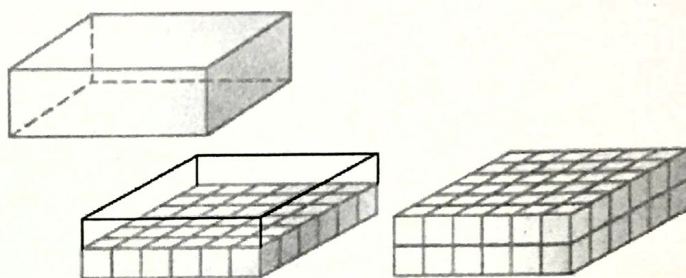


What we learned about VOLUME:

- Area of Base • height
- $\text{cm}^3$   $\text{in}^3$   $\text{ft}^3$   $\text{mi}^3$
- Filling up space with little cubes

### VOCABULARY

The volume of a three-dimensional figure is the measure of space it occupies. It is measured in cubic units such as cubic centimeters ( $\text{cm}^3$ ) or cubic inches ( $\text{in}^3$ ).

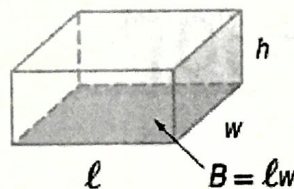


## Volume of a Rectangular Prism

### Words

The volume  $V$  of a rectangular prism is the product of the length  $\ell$ , the width  $w$ , and the height  $h$ . It is also the area of the base  $B$  times the height  $h$ .

### Model

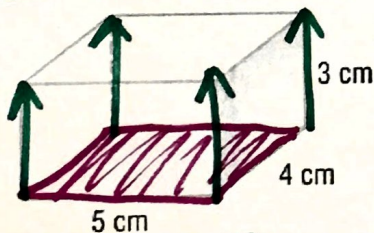


### Symbols

$$V = \ell w h \text{ or } V = Bh$$

$B = \text{Area of Base}$

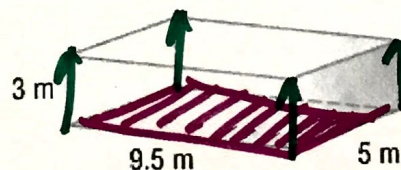
Ex. 1: a)



$$A \text{ of } B = 5 \cdot 4 = 20 \cdot 3$$

$$V = 60 \text{ cm}^3$$

b)



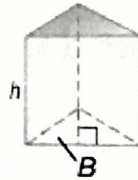
$$A \text{ of } B = 9.5 \cdot 5 = 47.5$$

$$V = 142.5 \text{ m}^3$$

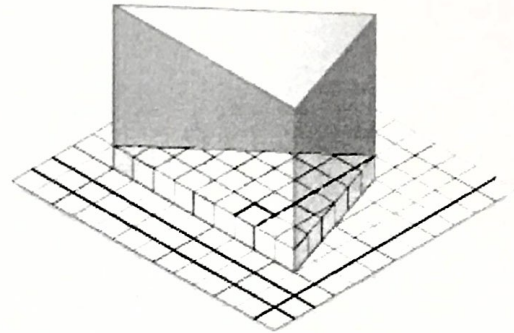
## Volume of a Triangular Prism

**Words** The volume  $V$  of a triangular prism is the area of the base  $B$  times the height  $h$ .

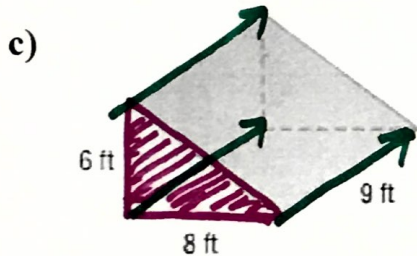
**Model**



**Symbols**  $V = Bh$ , where  $B$  is the area of the base.



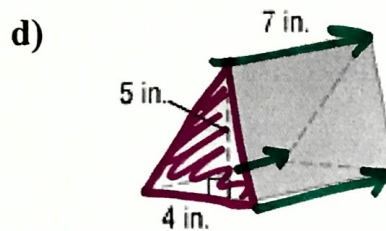
### Ex. 2: Volume of Triangular Prisms



$$V = B \cdot h$$

$$A_{\text{base}} = \frac{8 \cdot 6}{2} = 24 \cdot 9$$

$$V = 216 \text{ ft}^3$$



$$A_{\text{base}} = \frac{5 \cdot 4}{2} = 10 \cdot 7$$

$$V = 70 \text{ in}^3$$

### Ex. 3: Volume of any Prism

- e) The base of the prism shown is a regular hexagon with side lengths of 8 centimeters. The area of one of its bases is about 166 cm<sup>2</sup>. What is the volume of this hexagonal prism?

$$V = B \cdot h$$

$$166 \cdot 30 = 4980$$

$$V = 4980 \text{ cm}^3$$

