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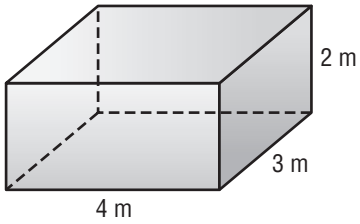
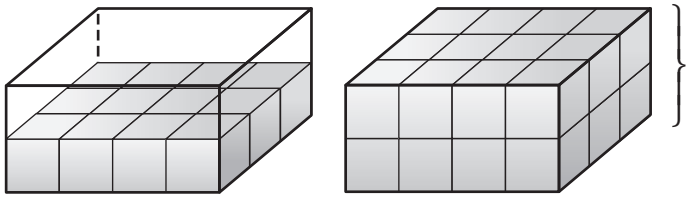
Lesson 4 Reteach

Volume of Prisms

The **volume** of a three-dimensional shape is the measure of space occupied by it. It is measured in cubic units such as cubic centimeters (cm^3) or cubic inches (in^3). The volume of the shape at the right can be shown using cubes.



The bottom layer, or base, has 4 • 3 or 12 cubes. →



There are two layers.

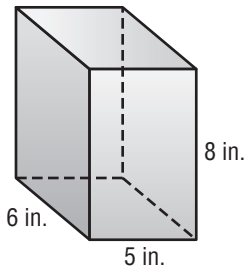
It takes 12 • 2 or 24 cubes to **fill** the box. So, the volume of the box is 24 cubic meters.

A **rectangular prism** is a three-dimensional shape that has two parallel and congruent sides, or bases, that are rectangles. To find the volume of a rectangular prism, multiply the area of the base times the height, or find the product of the length ℓ, the width w, and the height h.

$V = Bh$ or $V = \ell wh$

Example

Find the volume of the rectangular prism.



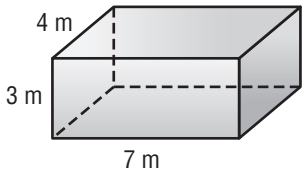
$V = \ell wh$	Volume of a rectangular prism
$V = 5 \cdot 6 \cdot 8$	Replace ℓ with 5, w with 6, and h with 8.
$V = 240$	Multiply.

The volume is 240 cubic inches.

Exercises

Find the volume of each prism. Round to the nearest tenth if necessary.

1.



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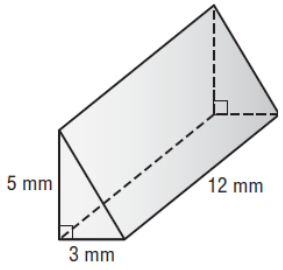

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Lesson 5 Reteach

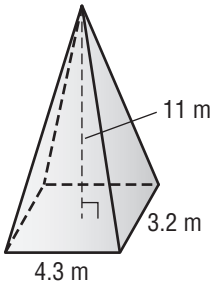
Volume of Pyramids

A **pyramid** is a three-dimensional shape with one base and triangular lateral faces. The volume V of a pyramid is one third the area of the base B times the height h.

$V = \frac{1}{3}Bh$

Example

Find the volume of the pyramid. Round to the nearest tenth.



$V = \frac{1}{3}Bh$ Volume of a pyramid

$V = \frac{1}{3}(\ell w)h$ The base is a rectangle, so $B = \ell w$.

$V = \frac{1}{3}(4.3 \cdot 3.2) \cdot 11$ $\ell = 4.3$, $w = 3.2$, $h = 11$

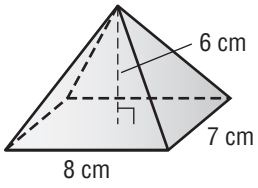
$V \approx 50.5$ Simplify.

The volume is about 50.5 cubic meters.

Exercises

Find the volume of each pyramid. Round to the nearest tenth if necessary.

1.



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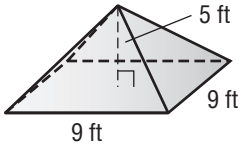

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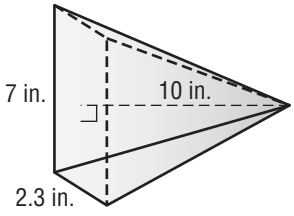

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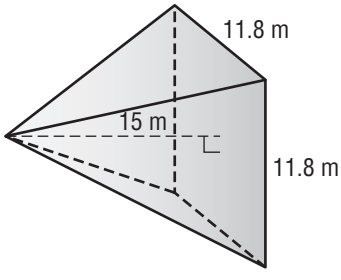

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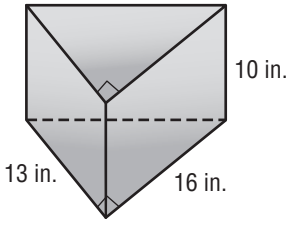

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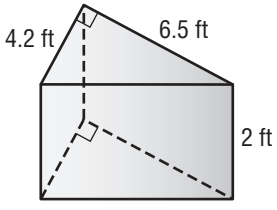

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