

VOLUME of Rectangular Prisms

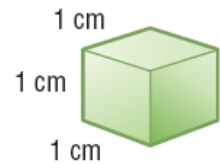
- Volume is the measure of _____ occupied by a solid region.

****The formula for the volume of a rectangular prism is:****

l = length w = width h = height

Study Tip:

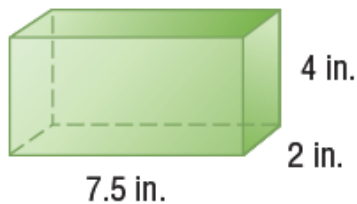
When measuring volume, the units will be “**cubed**.” A cubic centimeter (cm^3) is a cube whose edges all measure 1 centimeter.



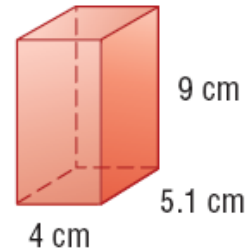
Examples:

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

1.

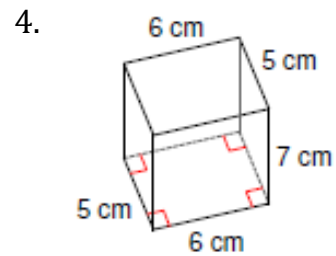
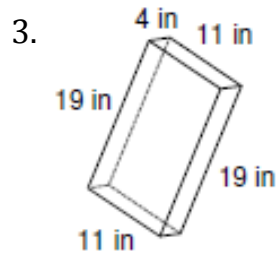
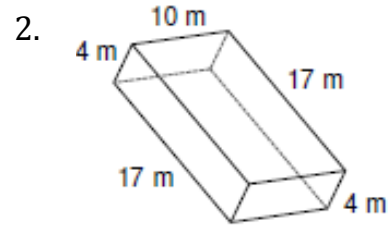
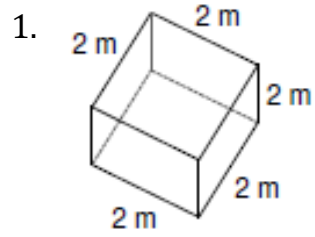


2.



3. Find the **volume** of a fish tank that is 8 feet long and 5 feet wide, if the height is 5.5 feet?

You try!!



5. A rectangular prism measuring 10 m and 7 m along the base and 12 m tall.

6. A square prism measuring 6 km along each edge of the base and 5 km tall.

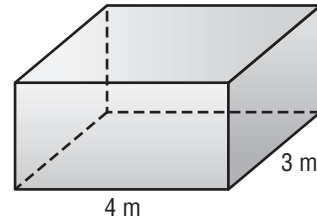
7. A cube measuring 9 in along each edge.

12-2

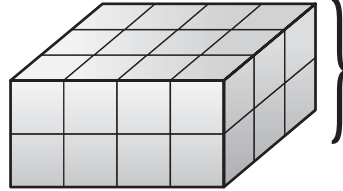
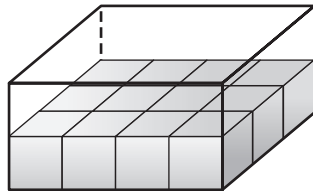
Study Guide and Intervention

Volume of Rectangular Prisms

The **volume** of a solid 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 figure at the right can be shown using cubes.



The bottom layer, or base, has $4 \cdot 3$ or 12 cubes.



There are two layers.

It takes $12 \cdot 2$ or 24 cubes to fill the box. So, the volume of the box is 24 cubic meters.

A **rectangular prism** is a solid figure 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 and the height, or find the product of the length ℓ , the width w , and the height h .

$$V = Bh \text{ or } V = \ell wh$$

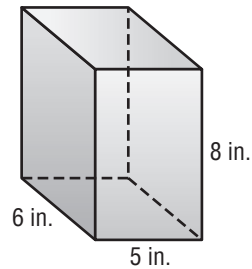
EXAMPLE 1 Find the volume of the rectangular prism.

$$V = \ell wh \quad \text{Volume of a rectangular prism}$$

$$V = 5 \cdot 6 \cdot 8 \quad \text{Replace } \ell \text{ with 5, } w \text{ with 6, and } h \text{ with 8.}$$

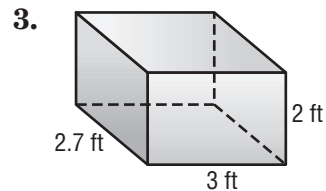
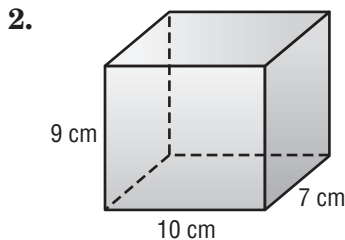
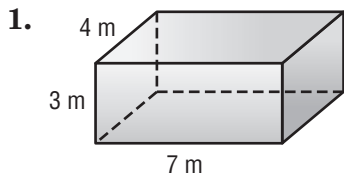
$$V = 240 \quad \text{Multiply.}$$

The volume is 240 cubic inches.



EXERCISES

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



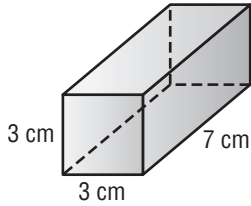
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Practice: Skills

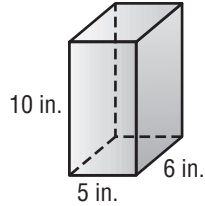
Volume of Rectangular Prisms

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

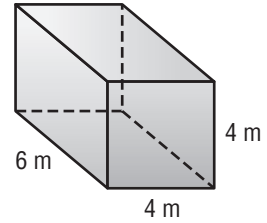
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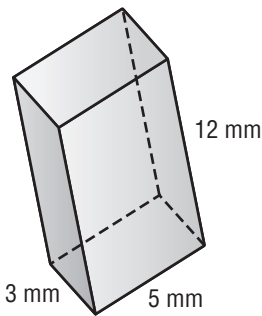
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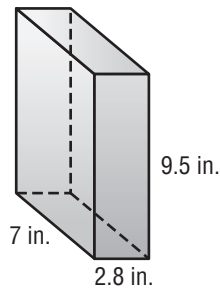
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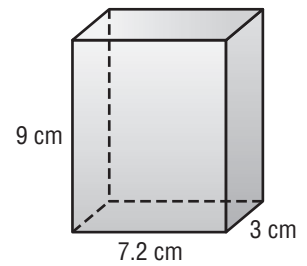
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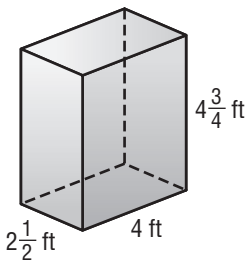
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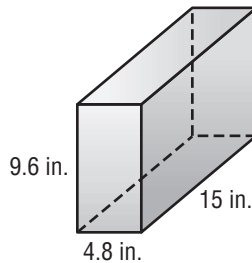
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7.



8.



9.

