

**SECTION**  
**10B**

**Ready to Go On? Skills Intervention**

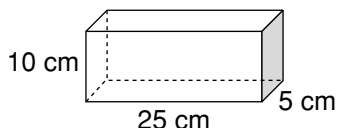
**10-8 Volume of Prisms**

**Volume** is the number of cubic units needed to fill a space.

**Vocabulary**  
volume

**Finding the Volume of a Rectangular Prism**

Find the volume of the rectangular prism.



$$V = \ell wh$$

$$V = \underline{\hspace{1cm}} \cdot \underline{\hspace{1cm}} \cdot \underline{\hspace{1cm}}$$

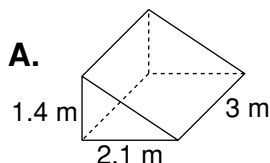
$$V = \underline{\hspace{2cm}}$$

What will you substitute for  $\ell$ ,  $w$ , and  $h$ ?

Multiply.

**Finding the Volume of a Triangular Prism**

Find the volume of each triangular prism.



$$V = Bh$$

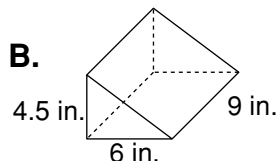
$$V = \left( \frac{1}{2} \cdot \underline{\hspace{1cm}} \cdot \underline{\hspace{1cm}} \right) \cdot \underline{\hspace{1cm}}$$

$$V = \underline{\hspace{2cm}}$$

What is the area of the base?

Substitute for  $B$  and  $h$ .

Multiply.



$$V = Bh$$

$$V = \left( \frac{1}{2} \cdot \underline{\hspace{1cm}} \cdot \underline{\hspace{1cm}} \right) \cdot \underline{\hspace{1cm}}$$

$$V = \underline{\hspace{2cm}}$$

What is the area of the base?

Substitute for  $B$  and  $h$ .

Multiply.

**Shipping Application**

A baseball card company packs 8 cubic boxes of baseball cards in a case. What are the possible dimensions for a case of baseball cards?

How many cubic boxes of baseball cards are there? \_\_\_\_\_

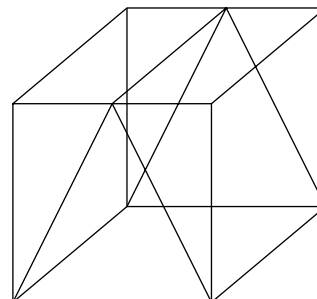
How many ways can you arrange 8 cubes and maintain a volume of 8 cubic units? \_\_\_\_\_

The possible dimensions for a case of 8 cubic boxes of baseball cards are the following:

$1 \cdot 1 \cdot \underline{\hspace{1cm}}$  or  $\underline{\hspace{1cm}} \cdot 2 \cdot \underline{\hspace{1cm}}$  or  $2 \cdot \underline{\hspace{1cm}} \cdot \underline{\hspace{1cm}}$

**SECTION 10B** **Ready to Go On? Problem Solving Intervention**  
**10-8 Volume of Prisms**

A triangular prism just fits inside a 4-inch cube as shown. What fraction of the cube's volume is taken up by the triangular prism?



**Understand the Problem**

1. Label the diagram with the dimensions you know.

**Make a Plan**

2. What formulas can you use to find the volume of the cube and the volume of the triangular prism?

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3. When you use  $V = Bh$  to find the volume of the triangular prism, what is the shape of the base you would use for  $B$ ?

\_\_\_\_\_

**Solve**

4. What is the volume of the cube?

\_\_\_\_\_

5. What is  $B$ , the area of the base of the triangular prism?

\_\_\_\_\_

6. What is the volume of the triangular prism?

\_\_\_\_\_

7. What fraction of the cube's volume is taken up by the triangular prism?

\_\_\_\_\_

**Check**

8. Draw a front view of the cube and triangular prism. See if the area of the base of the triangular prism is half the area of the face of the cube.

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