# Volume with Fractional Edge Lengths

When finding the volume of a rectangular prism with fractional edge lengths, you have to find the number of cubes with fractional edge lengths that can fill the prism. What is the volume of the rectangular prism shown below at the right?

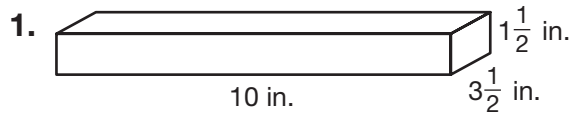Consider a $\frac{1}{2}$-inch cube. 8 half-inch cubes can fill a 1-inch cube.

Next, figure out how many $\frac{1}{2}$-inch cubes will fill the prism.
The prism can be filled with $5 \times 7 \times 3 = 105$ half-inch cubes.

Divide 105 by 8 because 8 half-inch cubes make up a
1-inch cube. $105 \div 8 = 13\frac{1}{8}$

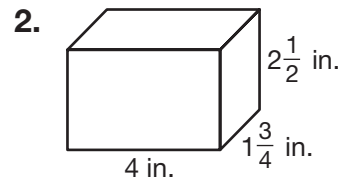The volume of this rectangular prism is $13\frac{1}{8}$ in³.

$1\frac{1}{2}$ in.
$3\frac{1}{2}$ in.
$2\frac{1}{2}$ in.
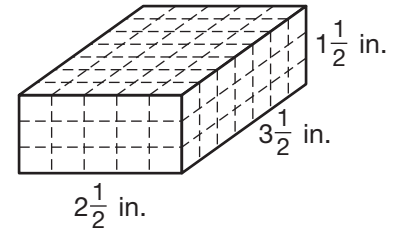
For **1** through **4**, find the volume of each rectangular prism.

1.

$1\frac{1}{2}$ in.
10 in.
$3\frac{1}{2}$ in.

Fraction cubes have _____ in. lengths.

$V =$ _____

2.

$2\frac{1}{2}$ in.
$1\frac{3}{4}$ in.
4 in.

Fraction cubes have _____ in. lengths.

$V =$ _____

3.

3.7 cm
4.5 cm
2.2 cm

$V =$ _____

4.

1.5 m
7.1 m
7.1 m
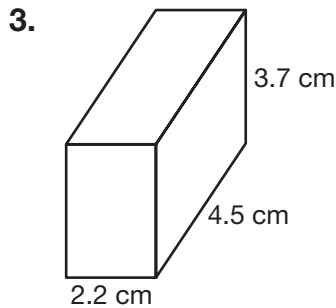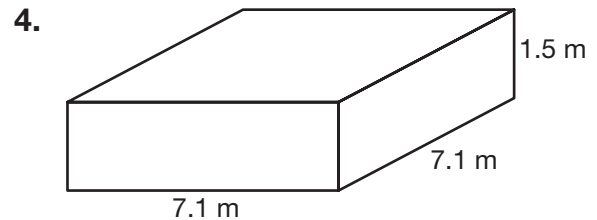
$V =$ _____

5. **Writing to Explain** How many $\frac{1}{2}$-inch cubes could fit inside the rectangular prism shown in Exercise 1? Explain how you know.

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