

Fraction Prism Power

Find volume with fractional edge lengths.

GRADE 6 • NY-6.G.2

NY-6.G.2 "Find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems."

NAME _____

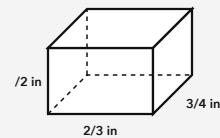
DATE _____

VOLUME OF A PRISM

For a right rectangular prism, multiply the length, width, and height to find volume: $V = l \times w \times h$. Multiply the fractions, simplify when you can, and label the answer in cubic units.

WORKED EXAMPLE

Find the volume of the prism shown.



$$1. V = l \times w \times h$$

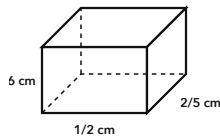
$$2. V = \frac{2}{3} \times \frac{3}{4} \times 1\frac{1}{2}$$

$$3. V = \frac{2}{3} \times \frac{3}{4} \times \frac{3}{2} = \frac{3}{4}$$

Answer: $\frac{3}{4}$ in³

PRACTICE 6 problems

- 1** Find the volume of the prism shown.



ANSWER _____

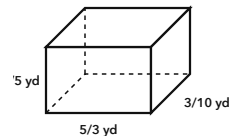
- 2** A right rectangular prism has a length of $\frac{3}{5}$ m, a width of $\frac{4}{5}$ m, and a height of $\frac{5}{4}$ m. Find its volume.

ANSWER _____

- 3** Find the volume of a right rectangular prism with edge lengths $\frac{7}{8}$ ft, $\frac{2}{7}$ ft, and $\frac{4}{9}$ ft.

ANSWER _____

- 4** Find the volume of the prism shown.



ANSWER _____

- 5** A right rectangular prism has edge lengths $\frac{5}{4}$ in, $\frac{4}{7}$ in, and $\frac{7}{5}$ in. Find its volume.

ANSWER _____

- 6** Find the volume of a right rectangular prism with a length of $\frac{9}{10}$ cm, a width of $\frac{10}{9}$ cm, and a height of $\frac{8}{11}$ cm.

ANSWER _____

APPLY IT Show your work

- 1** A 3-D printing club makes a small rectangular nameplate. The nameplate is $\frac{7}{10}$ in long, $\frac{5}{6}$ in wide, and $\frac{12}{7}$ in high. What is its volume?

WORK SPACE

ANSWER _____

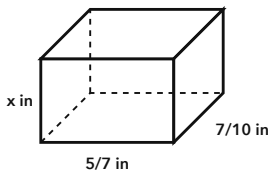
- 2** The inside of a rectangular pencil case is $\frac{7}{2}$ in long, $\frac{2}{5}$ in wide, and $\frac{3}{7}$ in high. What volume of supplies can fit inside?

WORK SPACE

ANSWER _____

CHALLENGE One step up

The prism shown has a volume of $\frac{35}{36} \text{ in}^3$. Find x . Explain how you used the two known edge lengths.



WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find the volume of the prism shown.	$1/6 \text{ cm}^3$
2	A right rectangular prism has a length of $3/5$ m, a width of $4/5$ m, and a height of $5/4$ m. Find its volume.	$3/5 \text{ m}^3$
3	Find the volume of a right rectangular prism with edge lengths $7/8$ ft, $2/7$ ft, and $4/9$ ft.	$1/9 \text{ ft}^3$
4	Find the volume of the prism shown.	$3/5 \text{ yd}^3$
5	A right rectangular prism has edge lengths $5/4$ in, $4/7$ in, and $7/5$ in. Find its volume.	1 in^3
6	Find the volume of a right rectangular prism with a length of $9/10$ cm, a width of $10/9$ cm, and a height of $8/11$ cm.	$8/11 \text{ cm}^3$

PART 2 • APPLY IT

1. 1 in^3 Multiply $7/10 \times 5/6 \times 12/7$. Cancel common factors to get 1 cubic inch.
2. $3/5 \text{ in}^3$ Multiply $7/2 \times 2/5 \times 3/7$. Cancel the 7s and the 2s, then multiply to get $3/5$ cubic inch.

CHALLENGE

$x = 35/18$ in, because $(5/7) \times (7/10) = 1/2$, so $x/2 = 35/36$.

Accept equivalent simplified or unsimplified fraction forms when they have the correct value and cubic units. For the challenge, accept a correct equation such as $(5/7)(7/10)x = 35/36$ with $x = 35/18$.