LESSON MAKER PRO

Volume Matchups

Find and compare volumes with fractional edge lengths.

GRADE 6 · 6.GM.B.28

6.GM.B.28 "Apply previous understanding of volume of right rectangular prisms to those with fractional edge lengths to solve real-world and mathematical problems. a..."

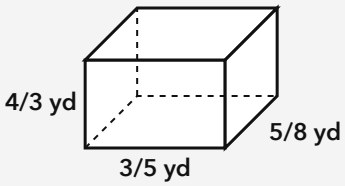
NAME _____ DATE _____

LAYERS MAKE VOLUME

A right rectangular prism can be filled with layers of equal-sized cubes. Multiply length by width to find the base area B, then multiply by height: V = lwh = Bh. Write volume in cubic units.

WORKED EXAMPLE

Find the volume of the prism shown.

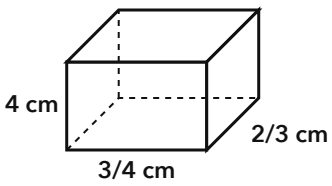


1. Find the base area: B = 3/5 × 5/8 = 3/8 yd^2.
2. Multiply by the height: V = 3/8 × 4/3 = 12/24 yd^3.
3. Simplify: V = 1/2 yd^3.

Answer: 1/2 yd^3

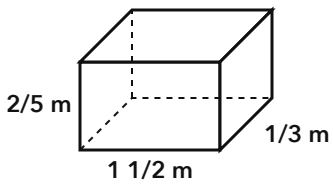
PRACTICE 6 problems

1 Find the volume of the prism shown.



ANSWER _____

2 Find the volume of the prism shown.

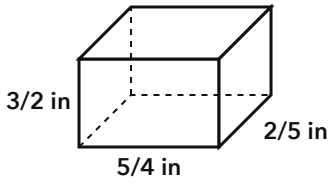


ANSWER _____

3 A prism has a base area of 7/8 ft^2 and a height of 4/7 ft. Find its volume.

ANSWER _____

4 Find the volume of the prism shown.



ANSWER _____

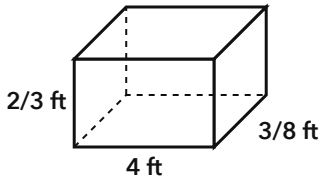
5 The table gives the dimensions of two prisms. Which prism has the greater volume, or are their volumes equal?

PRISM DIMENSIONS

Prism	Length	Width	Height
A	1/2 ft	4/5 ft	3 ft
B	3/4 ft	4/5 ft	2 ft

ANSWER _____

6 Find the base area and the volume of the prism shown.

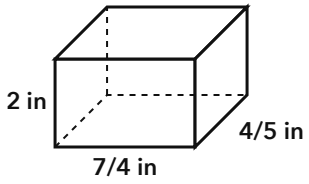


ANSWER _____

_____

APPLY IT Show your work

1 A clear case for a miniature game figure has the inside dimensions shown. What is its inside volume?



ANSWER _____

2 Two bins hold loose building bricks. The table gives each bin's inside dimensions. Which bin has more space, and how much more?

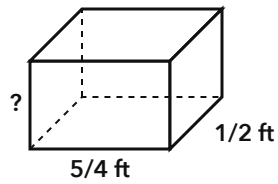
INSIDE DIMENSIONS

Bin	Length	Width	Height
A	1 1/2 ft	2/3 ft	3/4 ft
B	1 ft	3/4 ft	5/4 ft

ANSWER _____

CHALLENGE One step up

A prism measuring 3/2 ft by 1/2 ft by 1 ft has the same volume as the prism shown. Find the missing height. Show how you know.



WORK SPACE AND ANSWER

ANSWER KEY

Volume Matchups

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the volume of the prism shown.	**2 cm^3**
2	Find the volume of the prism shown.	**1/5 m^3**
3	A prism has a base area of 7/8 ft^2 and a height of 4/7 ft. Find its volume.	**1/2 ft^3**
4	Find the volume of the prism shown.	**3/4 in^3**
5	The table gives the dimensions of two prisms. Which prism has the greater volume, or are their volumes equal?	**Equal, each is 6/5 ft^3.**
6	Find the base area and the volume of the prism shown.	**Base area: 3/2 ft^2. Volume: 1 ft^3.**

PART 2 · APPLY IT

1. **14/5 in^3** Multiply the three inside dimensions: 7/4 × 4/5 × 2 = 14/5 in^3.
2. **Bin B, by 3/16 ft^3.** Bin A holds 3/4 ft^3, and Bin B holds 15/16 ft^3. The difference is 15/16 − 12/16 = 3/16 ft^3.

CHALLENGE

6/5 ft. The first prism's volume is 3/2 × 1/2 × 1 = 3/4 ft^3. The shown prism's base area is 5/4 × 1/2 = 5/8 ft^2, so its height is 3/4 ÷ 5/8 = 6/5 ft.

Accept equivalent fractions or mixed numbers with correct cubic units. In the challenge, accept any valid method that finds the shared volume and uses it to determine the missing height.