LESSON MAKER PRO

Measure It Up

Find area and volume with rational numbers.

GRADE 6 · TEKS 6.8.D

6.8.D "determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers."

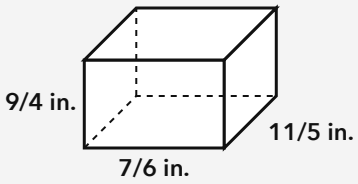
NAME _____ DATE _____

AREA AND VOLUME RULES

Use the shape's base and height to find area. Rectangle area is l × w, parallelogram area is b × h, triangle area is 1/2 × b × h, trapezoid area is 1/2 × (b_1 + b_2) × h, and prism volume is l × w × h.

WORKED EXAMPLE

Find the volume of the rectangular prism: length 7/6 in., width 11/5 in., height 9/4 in.

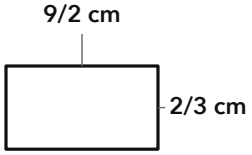


1. V = l × w × h
2. V = (7/6) × (11/5) × (9/4)
3. V = 231/40 in^3

Answer: 231/40 in^3

PRACTICE 4 problems

1 Find the area of the rectangle with length 9/2 cm and width 2/3 cm.

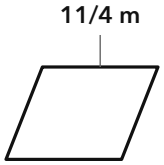


ANSWER _____

2 A trapezoid has bases 3/4 yd and 7/4 yd. Its height is 8/3 yd. Find its area.

ANSWER _____

3 Find the area of the parallelogram with base 11/4 m and perpendicular height 6/5 m.



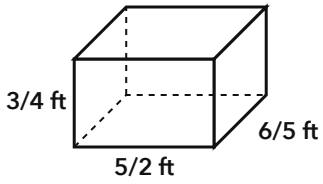
ANSWER _____

4 A triangle has a base of 5/6 ft and a height of 9/5 ft. Find its area.

ANSWER _____

APPLY IT Show your work

1 The game club fills a rectangular storage box with supplies. Its length is 5/2 ft, width is 6/5 ft and height is 3/4 ft. What is its volume?



ANSWER _____

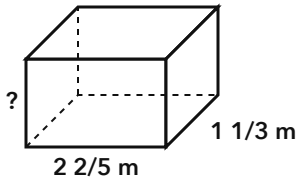
2 A student designs a triangular streaming backdrop with a base of 2 2/3 ft and a height of 1 1/2 ft. How much fabric covers the backdrop?

WORK SPACE

ANSWER _____

CHALLENGE One step up

The rectangular prism has length 2 2/5 m, width 1 1/3 m and volume 9 3/5 m^3. Find its height and explain how you know.



WORK SPACE AND ANSWER

ANSWER KEY

Measure It Up

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the area of the rectangle with length 9/2 cm and width 2/3 cm.	**3 cm^2**
2	A trapezoid has bases 3/4 yd and 7/4 yd. Its height is 8/3 yd. Find its area.	**10/3 yd^2**
3	Find the area of the parallelogram with base 11/4 m and perpendicular height 6/5 m.	**33/10 m^2**
4	A triangle has a base of 5/6 ft and a height of 9/5 ft. Find its area.	**3/4 ft^2**

PART 2 · APPLY IT

1. **9/4 ft^3** Multiply the three dimensions: (5/2) × (6/5) × (3/4) = 9/4.
2. **2 ft^2** Use 1/2 × base × height: 1/2 × (8/3) × (3/2) = 2.

CHALLENGE

3 m. The base area is (12/5) × (4/3) = 16/5 m^2, and (48/5) ÷ (16/5) = 3.

Accept equivalent fractions or mixed numbers. Require square units for area and cubic units for volume.