LESSON MAKER PRO

Fraction Area Lab

Find rectangle areas and picture fraction products.

GRADE 5 · 5.NF.B.12.c

5.NF.B.12.c "Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas."

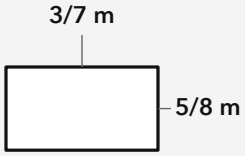
NAME _____ DATE _____

THE BIG IDEA

To find a rectangle's area, multiply its side lengths. When the sides are fractions, multiply the numerators and multiply the denominators. You can picture the product as part of a unit square divided into equal rows and columns.

WORKED EXAMPLE

What is the area of the rectangle shown?

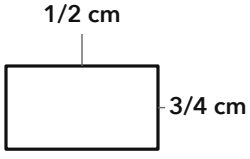


1. Multiply the side lengths: 3/7 x 5/8.
2. Multiply the numerators: 3 x 5 = 15.
3. Multiply the denominators: 7 x 8 = 56.

Answer: 15/56 square meter

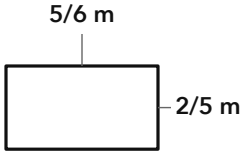
PRACTICE 6 problems

1 What is the area of the rectangle shown?



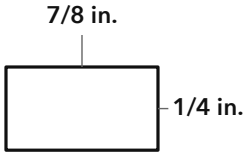
ANSWER _____

2 What is the area of the rectangle shown?



ANSWER _____

3 What is the area of the rectangle shown?



ANSWER _____

4 A unit square is divided into 4 equal columns and 9 equal rows. A rectangle covers 3 columns and 2 rows. How many small parts does it cover, and what fraction of the unit square is its area?

ANSWER _____

_____

5 Find the area of a rectangle with sides of 4/9 cm and 3/10 cm.

ANSWER _____

6 Find the area of a rectangle with sides of 7/10 ft and 2/3 ft.

ANSWER _____

APPLY IT Show your work

1 A student makes a rectangular trading card display that is 3/4 ft long and 2/3 ft wide. What is its area?

WORK SPACE

ANSWER _____

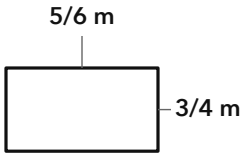
2 A poster for a school concert is 3/4 m long and 2/5 m wide. What is its area?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A friend says the area of the rectangle shown is 8/10 square meter because they added the numerators and added the denominators. In two sentences, use a unit-square grid to explain why that is wrong and give the correct area.



WORK SPACE AND ANSWER

ANSWER KEY

Fraction Area Lab

GRADE 5 · 5.NF.B.12.c

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	What is the area of the rectangle shown?	**3/8 square centimeter**
2	What is the area of the rectangle shown?	**1/3 square meter**
3	What is the area of the rectangle shown?	**7/32 square inch**
4	A unit square is divided into 4 equal columns and 9 equal rows. A rectangle covers 3 columns and 2 rows. How many small parts does it cover, and what fraction of the unit square is its area?	**6 small parts; 6/36 = 1/6 of the unit square**
5	Find the area of a rectangle with sides of 4/9 cm and 3/10 cm.	**2/15 square centimeter**
6	Find the area of a rectangle with sides of 7/10 ft and 2/3 ft.	**7/15 square foot**

PART 2 · APPLY IT

1. **1/2 square foot** Multiply 3/4 x 2/3 = 6/12. Simplify to 1/2 square foot.
2. **3/10 square meter** Multiply 3/4 x 2/5 = 6/20. Simplify to 3/10 square meter.

CHALLENGE

A unit square split into 6 columns and 4 rows has 24 equal parts, and this rectangle covers 5 x 3 = 15 of them. Its area is 15/24 = 5/8 square meter, not 8/10 square meter.

Accept equivalent fractions before simplification, such as 6/18 for problem 2. Area answers should use square units.