

Grade 5 - Area of Rectangles with Fractional Sides - Quiz

Common Core 5.NF.B.4b · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

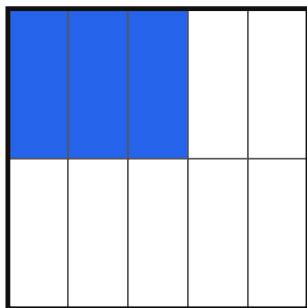
Answer these 10 multiple-choice questions about the area of rectangles with fractional sides. Each question has one correct answer. Count tiles or multiply the side lengths, then read the explanation after each answer.

Grade 5 · Common Core State Standards: **5.NF.B.4b**

Questions

Question 1

A unit square is cut into tiles. What is the area of the shaded rectangle?



The unit square has 5 columns and 2 rows.

- A. $\frac{3}{10}$ square unit
- B. $\frac{3}{5}$ square unit
- C. $\frac{3}{10}$ square unit
- D. $\frac{1}{10}$ square unit

Question 2

A unit square is cut into 6 columns and 5 rows. What is the area of one tile?

- A. $\frac{1}{30}$ square unit

- B. $\frac{1}{11}$ square unit
- C. $\frac{1}{6}$ square unit
- D. $\frac{1}{5}$ square unit

Question 3

Find the area of a rectangle that is $\frac{2}{5}$ foot by $\frac{3}{7}$ foot.

- A. $\frac{5}{12}$ square foot
- B. $\frac{6}{35}$ square foot
- C. $\frac{6}{12}$ square foot
- D. $\frac{6}{7}$ square foot

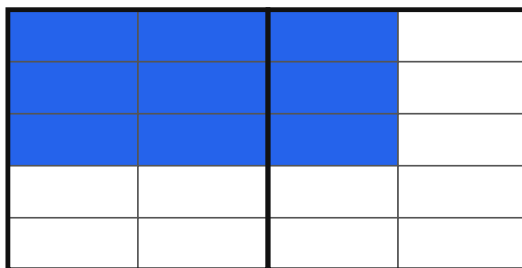
Question 4

Find the area of a rectangle that is $\frac{3}{8}$ yard by $\frac{4}{9}$ yard.

- A. $\frac{7}{17}$ square yard
- B. $\frac{1}{6}$ square yard
- C. $\frac{1}{3}$ square yard
- D. $\frac{12}{17}$ square yard

Question 5

Two unit squares are cut into tiles. The shaded rectangle is $1\frac{1}{2}$ feet by $\frac{3}{5}$ foot. What is its area?



Two unit squares, each cut into 2 columns and 5 rows.

- A. $\frac{3}{10}$ square foot
- B. $\frac{1}{7}$ square foot
- C. $1\frac{1}{10}$ square feet
- D. $\frac{9}{10}$ square foot

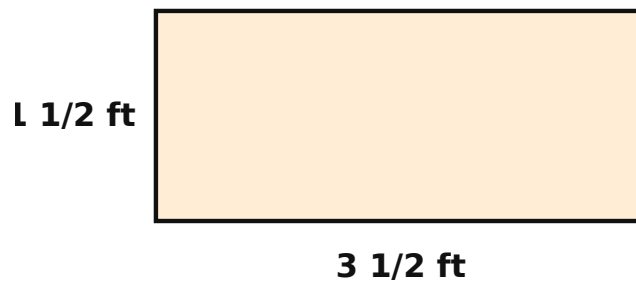
Question 6

A square patio tile has sides of length $\frac{4}{5}$ foot. What is its area?

- A. $\frac{16}{25}$ square foot
- B. $\frac{8}{5}$ square feet
- C. $\frac{16}{5}$ square feet
- D. $\frac{4}{25}$ square foot

Question 7

What is the area of this rectangle?



A rectangle.

- A. $3\frac{1}{4}$ square feet
- B. $5\frac{1}{4}$ square feet
- C. 5 square feet
- D. $4\frac{1}{2}$ square feet

Question 8

Maya's patch of grass is $\frac{5}{6}$ yard by $\frac{3}{10}$ yard. What is its area?

- A. $\frac{1}{4}$ square yard
- B. $\frac{8}{16}$ square yard
- C. $\frac{3}{10}$ square yard
- D. $\frac{1}{6}$ square yard

Question 9

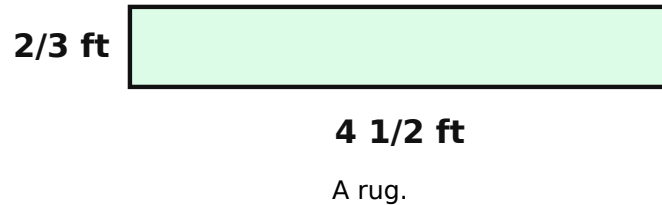
Which expression gives the area of a rectangle with sides $\frac{3}{5}$ unit and $\frac{7}{8}$ unit?

- A. $\frac{3}{5} + \frac{7}{8}$

- B. $2 \times \left(\frac{3}{5} + \frac{7}{8} \right)$
 C. $\frac{3}{5} \times \frac{7}{8}$
 D. $\frac{3}{5} \div \frac{7}{8}$

Question 10

Liam's rug is $4\frac{1}{2}$ feet by $\frac{2}{3}$ foot. What is its area?



A rug.

- A. $5\frac{1}{6}$ square feet
 B. $4\frac{1}{3}$ square feet
 C. 6 square feet
 D. 3 square feet

Answers

1. **C** - The unit square has $5 \times 2 = 10$ tiles, and 3 are shaded: $3/10$. Counting only the columns gives $3/5$.
2. **A** - There are $6 \times 5 = 30$ equal tiles, so each tile is $1/30$ of the unit square.
3. **B** - Multiply the numerators and the denominators: $2 \times 3 = 6$ and $5 \times 7 = 35$. Adding fractions gives the wrong operation.
4. **B** - $3 \times 4 = 12$ and $8 \times 9 = 72$, so the area is $12/72 = 1/6$ square yard.
5. **D** - The shaded rectangle has $3 \times 3 = 9$ tiles, and each tile is $1/10$ square foot. So the area is $9/10$.
6. **A** - Area = side times side = $4/5 \times 4/5 = 16/25$. Doubling the side gives $8/5$, which is not the area.
7. **B** - $7/2 \times 3/2 = 21/4 = 5 \frac{1}{4}$. Multiplying wholes and fractions separately gives $3 \frac{1}{4}$, which misses two of the four partial areas.
8. **A** - $5 \times 3 = 15$ and $6 \times 10 = 60$, so the area is $15/60 = 1/4$ square yard.
9. **C** - Area is length times width. The sum or twice the sum is perimeter work.
10. **D** - $9/2 \times 2/3 = 18/6 = 3$. Adding the sides gives $5 \frac{1}{6}$, which is not area.

Remember

- A unit square has area 1 square unit.
- Cutting a unit square into equal tiles gives tiles with a unit fraction area.
- Area = length times width, even when the sides are fractions.
- Counting tiles and multiplying the side lengths give the same area.
- Always write square units, such as square feet, in the answer.