Assessment : Section A Checkpoint

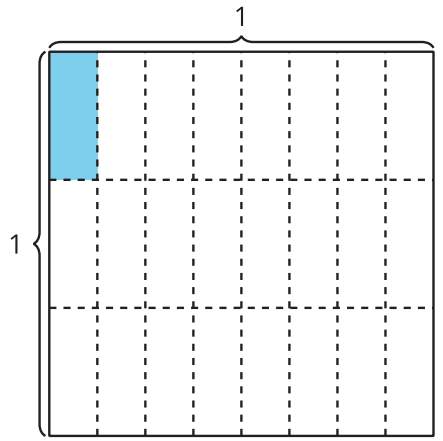
Problem 1

Goals Assessed

- Represent and describe multiplication of a fraction by a fraction using area concepts.

Statement

Write a multiplication expression that represents the area of the shaded region. Explain or show your reasoning.



Solution

$\frac{1}{3} \times \frac{1}{8}$ or $\frac{1}{8} \times \frac{1}{3}$. Sample response: $\frac{1}{3}$ of $\frac{1}{8}$ of the square is shaded so that's $\frac{1}{3} \times \frac{1}{8}$.

Problem 2

Goals Assessed

- Recognize that $\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$ and use this generalization to multiply fractions numerically.

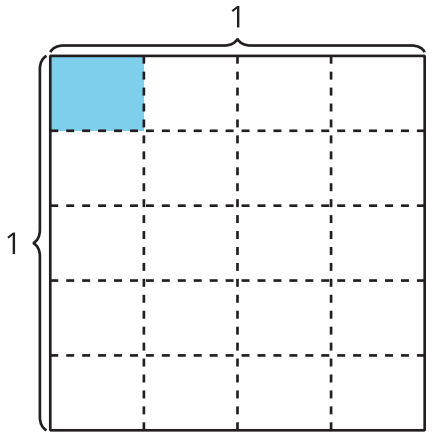
Statement

Find the value of each expression. Draw a diagram if needed.

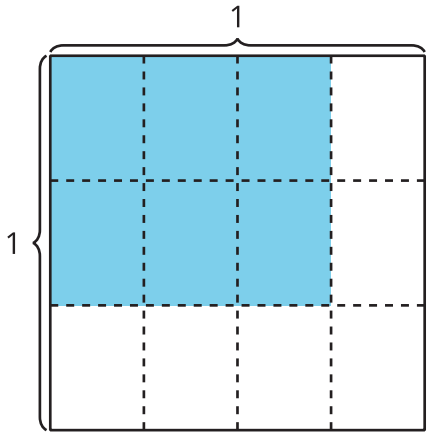
1. $\frac{1}{4} \times \frac{1}{5}$
2. $\frac{2}{3} \times \frac{3}{4}$
3. $\frac{5}{4} \times \frac{5}{6}$

Solution

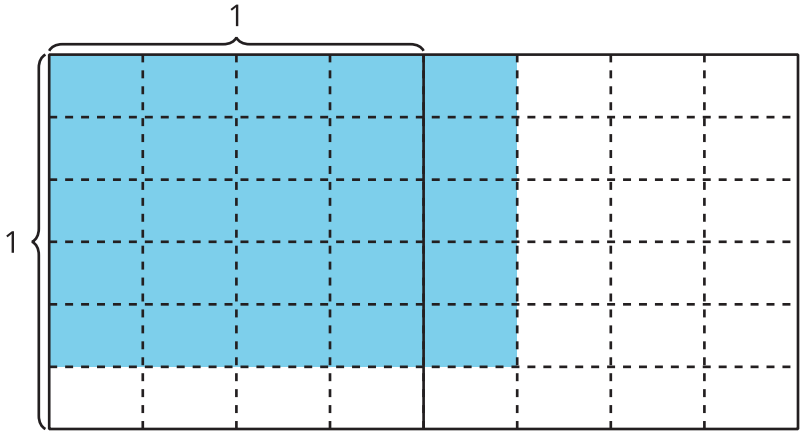
1. $\frac{1}{20}$



2. $\frac{6}{12}$ or $\frac{1}{2}$



3. $\frac{25}{24}$ or $1\frac{1}{24}$



Problem 3

Goals Assessed

- Recognize that $\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$ and use this generalization to multiply fractions numerically.

Statement

A rectangular garden is $2\frac{1}{2}$ meters wide and $4\frac{1}{2}$ meters long. What is the area of the garden? Explain or show your reasoning.

Solution

$11\frac{1}{4}$ square meters or equivalent.
Sample reasoning: $2 \times 2\frac{1}{2}$ is 5 so $4 \times 2\frac{1}{2} = 10$. Then $\frac{1}{2} \times 2 = 1$ and $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$ so that's $10 + 1 + \frac{1}{4}$ or $11\frac{1}{4}$ square meters.