Assessment : Section C Checkpoint

Problem 1

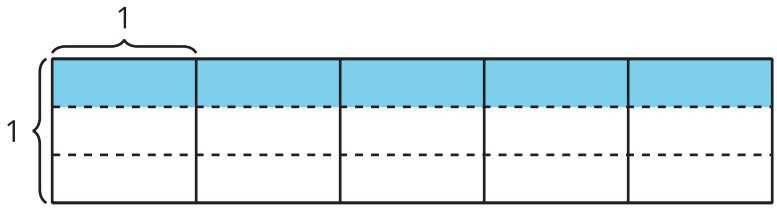
Goals Assessed

- Find the area of a rectangle when one side length is a whole number and the other side length is a fraction or mixed number.
- Write, interpret and evaluate numerical expressions that represent multiplication of a whole number by a fraction or mixed number.

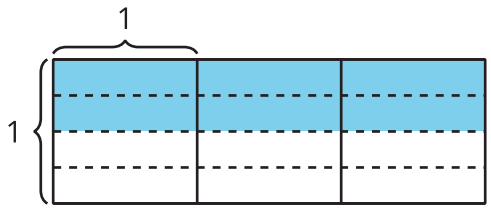
Statement

For each diagram, write an expression for the area of the shaded region. Then, find the area.

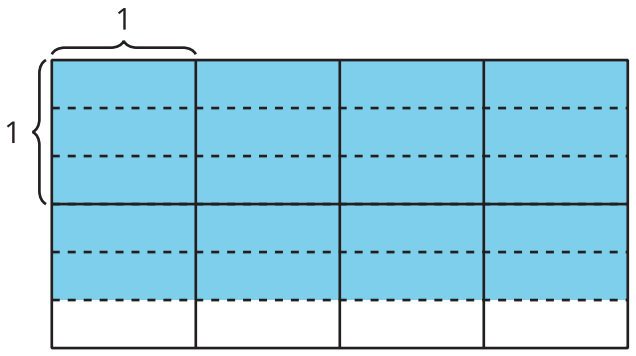
1.



2.



3.



Solution

1. $\frac{1}{3} \times 5$, $5 \times \frac{1}{3}$, or equivalent. The area is $\frac{5}{3}$ square units.
2. $\frac{2}{4} \times 3$, $\frac{1}{2} \times 3$, or equivalent. Each shaded row is $\frac{1}{4}$ of the 3 squares and there are two of them so that is $\frac{2}{4}$ of the 3 squares or $\frac{2}{4} \times 3$. The area is $\frac{6}{4}$ square units.
3. $\frac{5}{3} \times 4$ or equivalent. Each shaded row is $\frac{1}{3}$ of 4 squares and there are 5 of these shaded so that's $\frac{5}{3} \times 4$. The area is $\frac{20}{3}$ square units.

Problem 2

Goals Assessed

- Represent and solve problems involving the multiplication of a whole number by a fraction or mixed number.

Statement

A bottle holds 2 liters of water. Clare drank $\frac{3}{5}$ of the bottle of water. How many liters of water is that? Explain or show your reasoning.

Solution

$\frac{6}{5}$ liters. There are 2 liters of water and she had $\frac{3}{5}$ of the water so that's $\frac{3}{5} \times 2$ or $\frac{6}{5}$ liters.

Problem 3

Goals Assessed

- Write, interpret and evaluate numerical expressions that represent multiplication of a whole number by a fraction or mixed number.

Statement

Find the value of each expression.

1. $\frac{1}{5} \times 10$
2. $5\frac{2}{3} \times 4$
3. $\frac{13}{4} \times 5$

Solution

1. $\frac{10}{5}$ or 2 or equivalent

2. $\frac{68}{3}$ or equivalent

3. $\frac{65}{4}$ or equivalent