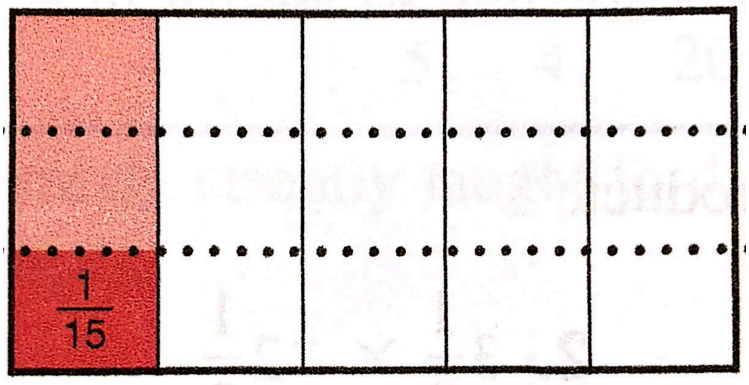
$+$, -, $\times$, $\div$ Fractions

While working in a group make sure you:

- Expect to make mistakes but be sure to reflect/learn from them!
- Are civil and are aware of your impact on others.
- Assume and engage with the strongest argument while assuming best intent.

1. What product is being captured by this model?



2. Find $\frac{2}{9} \div \frac{8}{9}$

3. Let a be a non-zero integer. Perform the division and practice putting the answer in lowest terms:

   (a) $\frac{7}{8} \div \frac{5}{2}$

   (b) $5\frac{1}{3} \div 1\frac{1}{8}$

   (c) $\frac{3}{10a^2} \div \frac{a+1}{a}$

4. Let a, b, c, and d be integers with b and d non-zero. Determine if the following statements are always true or not. Briefly justify your answer.

   (a) $\dfrac{a}{b} + \dfrac{c}{d} = \dfrac{a+c}{b+d}$

   (b) Division of rational numbers is commutative.

5. Let a be a positive integer. The following work is wrong. Detect the error and try to detect the reason for the error:

$$\frac{4}{a+1} + \frac{2}{a} = \frac{4}{a+1} + \frac{2+1}{a+1} = \frac{4}{a+1} + \frac{3}{a+1} = \frac{7}{a+1}$$

$$\frac{3}{a} + \frac{2}{a^2} = \frac{9}{a^2} + \frac{2}{a^2} = \frac{11}{a^2}$$