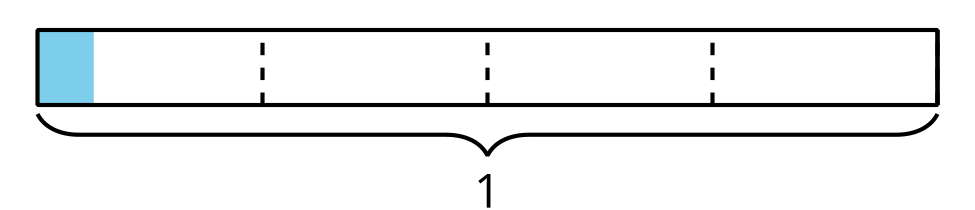
## Lesson 12: Represent Division of Unit Fractions by Whole Numbers

* Let’s make sense of diagrams that represent division of a unit fraction by a whole number.

### Warm-up: Estimation Exploration: How Much is Shaded?

How much is shaded?



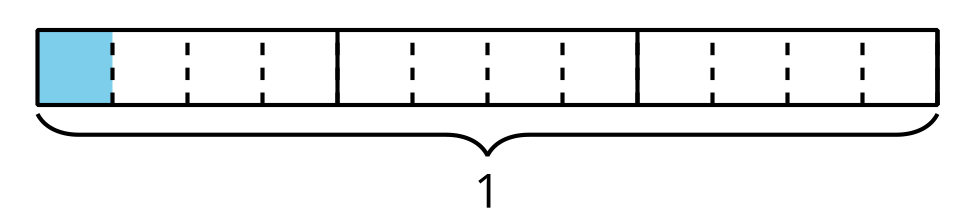
Record an estimate that is:

|  |  |  |
| --- | --- | --- |
| too low | about right | too high |
|  |  |  |

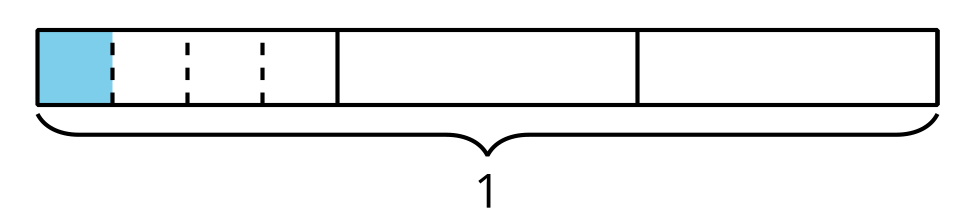
### 12.1: Diagrams, Equations, Situations

Priya and Mai used the diagrams below to find the value of .

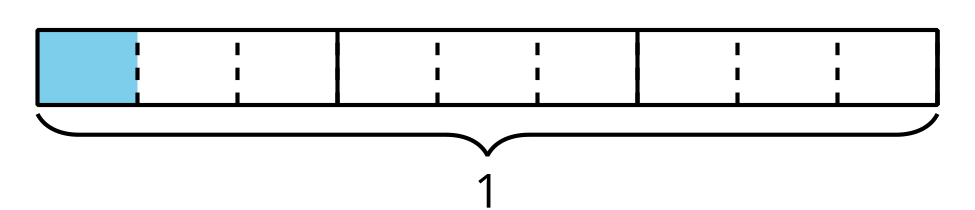
Priya’s diagram:



Mai’s diagram:



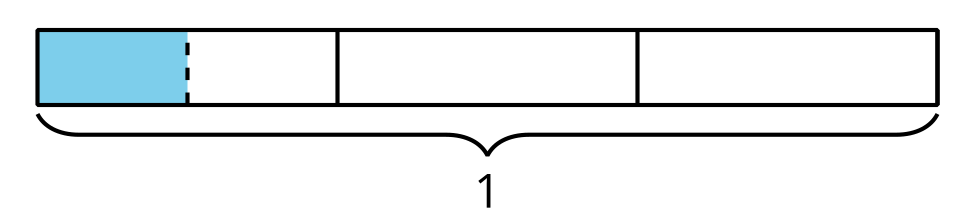
1. What is the same about the diagrams?
2. What is different?
3. Find the value that makes the equation true.
4. Han drew this diagram to represent . Explain how the diagram

* shows .
* 

1. Find the value that makes the equation true. Explain or show your reasoning.

### 12.2: Priya’s Work

1. Find the value of . Explain or show your reasoning.
2. This is Priya’s work for finding the value of :

* 
* because I divided into 2 equal parts and of is shaded in.
  1. What questions do you have for Priya?
  2. Priya’s equation is incorrect. How can Priya revise her explanation?

### 12.3: Look for Patterns

1. Find the value that makes each equation true. Use a diagram if it is helpful.
2. What patterns do you notice?
3. How would you find the value of  divided by any whole number? Explain or show your reasoning.



© CC BY 2021 Illustrative Mathematics®