## Lesson 9: Differences of Fractions

* Let’s explore differences of fractions on a number line.

### Warm-up: True or False: Sums of Tenths

Decide if each statement is true or false. Be prepared to explain your reasoning.

* $\frac{1}{10}+\frac{2}{10}+\frac{3}{10}=1$
* $1+\frac{7}{10}=\frac{3}{10}+\frac{4}{10}+\frac{10}{10}$
* $\frac{5}{10}+1=\frac{6}{10}$
* $\frac{2}{10}+\frac{10}{10}=1+\frac{1}{5}$

### 9.1: Jump to Subtract

1. To subtract different fractions from $\frac{11}{6}$, Noah draws “jumps” on number lines.
* 
* 
* 
	1. The first diagram shows how he finds $\frac{11}{6}−\frac{7}{6}$. What is the value of $\frac{11}{6}−\frac{7}{6}$ ?
	2. Write an equation to show the difference represented by each of Noah’s diagrams.
1. Here is another diagram Noah draws:
* 
* Which equations could the diagram represent? Explain your reasoning.
* $\frac{11}{6}−\frac{6}{6}=\frac{5}{6}$
* $\frac{11}{6}−1=\frac{5}{6}$
* $1\frac{5}{6}−1=\frac{5}{6}$
1. Use a number line to represent each difference and to find its value.
	1. $\frac{8}{3}−\frac{2}{3}$
	* 
	1. $\frac{8}{3}−\frac{4}{3}$
	* 
	1. $\frac{8}{3}−1$
	* 

### 9.2: What’s the Difference?

Use a number line to represent each difference and to find its value.

1. $\frac{13}{8}−\frac{2}{8}$
* 
1. $\frac{13}{8}−\frac{6}{8}$
* 
1. $\frac{13}{8}−1$
* 
1. $1\frac{5}{8}−\frac{7}{8}$
* 
1. $1\frac{5}{8}−1$
* 
1. $1\frac{5}{8}−1\frac{4}{8}$
* 

### 9.3: Make a Jump, Subtraction Edition

Here are four number lines, each with a point on it. Label each point with a fraction it represents.

1. 
2. 
3. 
4. 

The point you labeled is your target.

* Pick a card from the set given to you. Locate and label the fraction on the number line.
* From that point, draw one or more jumps to reach the target. What do you need to subtract? Label each jump you draw.
* Write an equation to represent the difference of your two fractions.



© CC BY 2021 Illustrative Mathematics®