# 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.

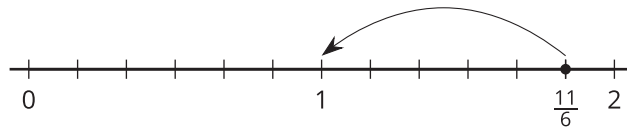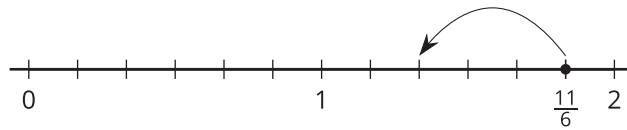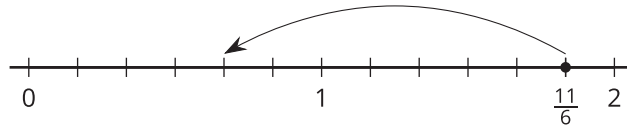- $\frac{1}{10} + \frac{2}{10} + \frac{3}{10} = 1$

- $1 + \frac{7}{10} = \frac{3}{10} + \frac{4}{10} + \frac{10}{10}$

- $\frac{5}{10} + 1 = \frac{6}{10}$

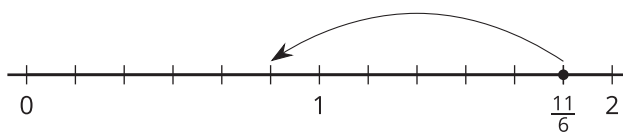- $\frac{2}{10} + \frac{10}{10} = 1 + \frac{1}{5}$

## 9.1: Jump to Subtract

1. To subtract different fractions from $\frac{11}{6}$, Noah draws "jumps" on number lines.



a. The first diagram shows how he finds $\frac{11}{6} - \frac{7}{6}$. What is the value of $\frac{11}{6} - \frac{7}{6}$ ?

b. Write an equation to show the difference represented by each of Noah's diagrams.

2. Here is another diagram Noah draws:



Which equations could the diagram represent? Explain your reasoning.

$$\frac{11}{6} - \frac{6}{6} = \frac{5}{6}$$

$$\frac{11}{6} - 1 = \frac{5}{6}$$

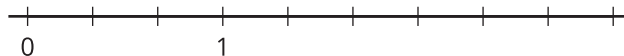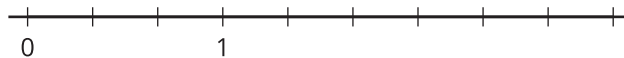$$1\frac{5}{6} - 1 = \frac{5}{6}$$

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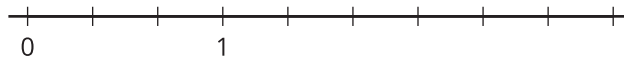3. Use a number line to represent each difference and to find its value.

a. $\frac{8}{3} - \frac{2}{3}$
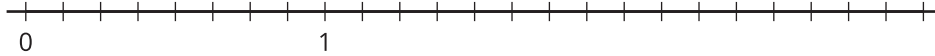


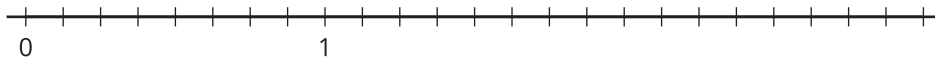b. $\frac{8}{3} - \frac{4}{3}$



c. $\frac{8}{3} - 1$

## 9.2: What's the Difference?

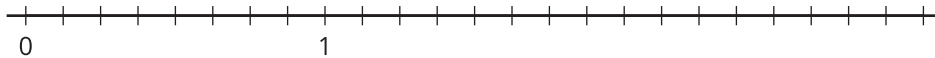Use a number line to represent each difference and to find its value.
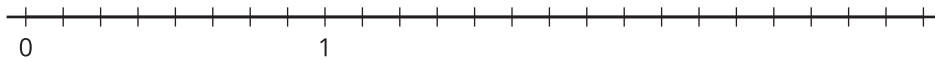
1. $\frac{13}{8} - \frac{2}{8}$

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0                    1
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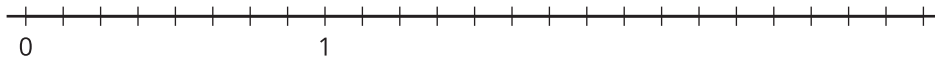
2. $\frac{13}{8} - \frac{6}{8}$

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0                    1
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3. $\frac{13}{8} - 1$

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0                    1
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4. $1\frac{5}{8} - \frac{7}{8}$
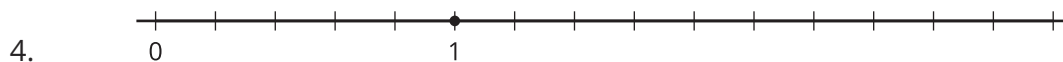
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0                    1
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5. $1\frac{5}{8} - 1$
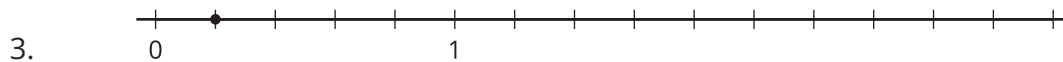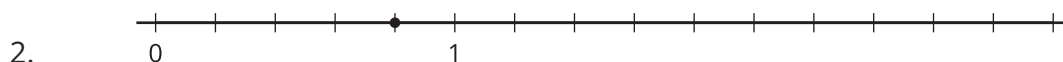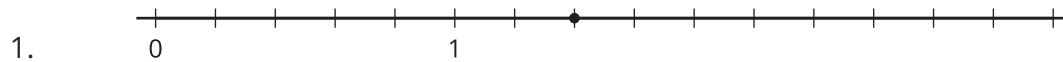
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0                    1
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6. $1\frac{5}{8} - 1\frac{4}{8}$

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0                    1
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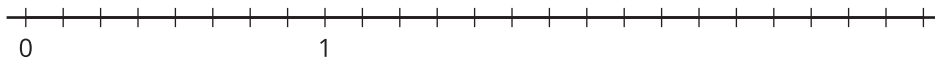
## 9.3: Make a Jump, Subtraction Edition

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.