

Name: \_\_\_\_\_

Period: \_\_\_\_\_

Date: \_\_\_\_\_

**Math Unit 1: Numerical Expressions and Factors****Lesson 1.6e- Adding and Subtracting Fractions****SWBAT:****Paraphrase:****Essential Question:** How can you use common multiples to add and subtract fractions?

Example 1

**Find**  $\frac{5}{8} + \frac{1}{6}$ .

Rewrite the fractions with a common denominator. Use the product of the denominators as the common denominator.

$$\frac{5}{8} + \frac{1}{6} = \frac{5 \cdot 6}{8 \cdot 6} + \frac{1 \cdot 8}{6 \cdot 8}$$

Rewrite the fractions using a common denominator of  $8 \cdot 6 = 48$ .

$$= \frac{30}{48} + \frac{8}{48}$$

Multiply.

$$= \frac{38}{48}$$

Add the numerators.

$$= \frac{\cancel{2} \cdot 19}{\cancel{2} \cdot 24}$$

Divide out the common factor 2.

$$= \frac{19}{24}$$

Simplify.

Your Turn

**Find**  $\frac{1}{3} + \frac{1}{4}$

Example 2

**Find**  $\frac{5}{8} + \frac{1}{6}$ .

Find the LCM of the denominators.

**Multiples of 8:** 8, 16, 24, 32, 40, 48, ...**Multiples of 6:** 6, 12, 18, 24, 30, 36, 42, 48, ...

The LCM of 8 and 6 is 24. So, the LCD is 24.

$$\frac{5}{8} + \frac{1}{6} = \frac{5 \cdot 3}{8 \cdot 3} + \frac{1 \cdot 4}{6 \cdot 4}$$

Rewrite the fractions using the LCD, 24.

$$= \frac{15}{24} + \frac{4}{24}$$

Multiply.

$$= \frac{19}{24}$$

Add the numerators.

Your Turn	Find $\frac{1}{6} + \frac{5}{9}$
Example 3	<p>Find <math>4\frac{3}{4} - 2\frac{3}{10}</math>.</p> <p>Write the difference using improper fractions.</p> $4\frac{3}{4} - 2\frac{3}{10} = \frac{19}{4} - \frac{23}{10}$ <p><b>Method 1:</b> Use the product of the denominators as the common denominator.</p> $\begin{aligned} \frac{19}{4} - \frac{23}{10} &= \frac{19 \cdot 10}{4 \cdot 10} - \frac{23 \cdot 4}{10 \cdot 4} && \text{Rewrite the fractions using a common denominator of } 4 \cdot 10 = 40. \\ &= \frac{190}{40} - \frac{92}{40} && \text{Multiply.} \\ &= \frac{98}{40} && \text{Subtract the numerators.} \\ &= \frac{49}{20}, \text{ or } 2\frac{9}{20} && \text{Simplify.} \end{aligned}$
	<p><b>Method 2:</b> Use the LCD. The LCM of 4 and 10 is 20.</p> $\begin{aligned} \frac{19}{4} - \frac{23}{10} &= \frac{19 \cdot 5}{4 \cdot 5} - \frac{23 \cdot 2}{10 \cdot 2} && \text{Rewrite the fractions using the LCD, 20.} \\ &= \frac{95}{20} - \frac{46}{20} && \text{Multiply.} \\ &= \frac{49}{20}, \text{ or } 2\frac{9}{20} && \text{Simplify.} \end{aligned}$
Your Turn	Find $5\frac{2}{3} - 2\frac{1}{4}$
Notes / Questions	