Add and Subtract Mixed Numbers

Chapter 4 Lesson 5
Add or subtract. Write in simplest form.

1. \[ \frac{7}{10} \quad \quad 2. \quad -\frac{1}{7} \]

\[-\frac{1}{5} \quad \quad + \quad \frac{2}{3} \]

3. Evaluate \( \frac{1}{10} + s \) if \( s = \frac{3}{5} \).

4. Jared and his friend Andre ordered a pizza. Jared ate \( \frac{2}{5} \) of the pizza and Andre ate \( \frac{1}{3} \) of the pizza. How much more of the pizza did Jared eat?

5. TEST PRACTICE Ellen has \( \frac{3}{4} \) of a jar of jelly. After she makes some peanut butter and jelly sandwiches, \( \frac{2}{5} \) of the jar of jelly is left. What part of the jar of jelly did Ellen use?

A. \( \frac{15}{8} \)  \quad B. \( \frac{23}{20} \)  \quad C. \( \frac{7}{20} \)  \quad D. \( \frac{3}{10} \)
ANSWERS
1. \( \frac{1}{2} \)
2. \( \frac{11}{21} \)
3. \( \frac{7}{10} \)
4. Jared ate \( \frac{1}{15} \) more of the pizza.
5. C

Video
Objective

Students will add and subtract mixed numbers.
Example 1

1. Find $7\frac{4}{9} + 10\frac{2}{9}$. Write in simplest form.

1. Estimate $7 + 10 = 17$

2. Add the whole numbers and fractions separately.

   $\frac{4}{9} + \frac{2}{9}$

   $\underline{7\frac{4}{9} + 10\frac{2}{9}}$

   $17\frac{6}{9}$ or $17\frac{2}{3}$

   Simplify.

3. Check for Reasonableness $17\frac{2}{3} \approx 17$ ☑️
Example 2

2. Find $8 \frac{5}{6} - 2 \frac{1}{3}$. Write in simplest form.

1. Estimate  
   $9 - 2 = 7$

2. 
   
   \[
   \begin{align*}
   8 \frac{5}{6} & \rightarrow 8 \frac{5}{6} \\
   -2 \frac{1}{3} & \rightarrow -2 \frac{2}{6}
   \end{align*}
   \]

   Rename the fraction using the LCD. Then subtract.

   $6\frac{3}{6}$ or $6\frac{1}{2}$

   Simplify.

3. Check for Reasonableness  
   $6\frac{1}{2} \approx 7$ ✔
Practice Problems

1. Find $3\frac{1}{12} + 4\frac{7}{12}$. Write in simplest form.

2. Find $9\frac{7}{10} - 4\frac{3}{5}$. Write in simplest form.
Answers to Practice Problems

1. \[17 \frac{2}{3}\]

2. \[5 \frac{1}{10}\]
Example 3 – Method #1

3. Find \(2\frac{1}{3} - 1\frac{2}{3}\).

**Method 1** Rename Mixed Numbers

1. **Estimate**  
   \(2 - 1\frac{1}{2} = \frac{1}{2}\).

2. Since \(\frac{1}{3}\) is less than \(\frac{2}{3}\), rename \(2\frac{1}{3}\) before subtracting.

   - Convert \(1\frac{3}{3}\) to \(1\frac{1}{3}\) or \(1\frac{4}{3}\).

3. \[ \begin{align*}
   2\frac{1}{3} & \rightarrow 1\frac{4}{3} \\
   - 1\frac{2}{3} & \rightarrow -1\frac{2}{3} \\
   \underline{\text{Subtract}} & \underline{\text{the whole numbers and then the fractions.}}
   \end{align*} \]

   \[ \frac{2}{3} \]

4. **Check for Reasonableness**  
   \[ \frac{2}{3} \approx \frac{1}{2} \checkmark \]
Example 3 – Method #2

Method 2: Write as Improper Fractions

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\[ \begin{align*}
2 \frac{1}{3} & \quad \rightarrow \quad \frac{7}{3} \\
-1 \frac{2}{3} & \quad \rightarrow \quad -\frac{5}{3} \\
\hline
\frac{2}{3}
\end{align*} \]

- Write \(2 \frac{1}{3}\) as \(\frac{7}{3}\).
- Write \(-1 \frac{2}{3}\) as \(-\frac{5}{3}\).

So, \(2 \frac{1}{3} - 1 \frac{2}{3} = \frac{2}{3}\).

Using either method, the answer is \(\frac{2}{3}\).
4. An urban planner is designing a skateboard park. The length of the skateboard park is $120\frac{1}{2}$ feet. The length of the parking lot is $40\frac{1}{3}$ feet. What will be the length of the park and the parking lot combined?

1. $120\frac{1}{2} + 40\frac{1}{3} = 120\frac{3}{6} + 40\frac{2}{6}$
   
   Rename $\frac{1}{2}$ as $\frac{3}{6}$ and $\frac{1}{3}$ as $\frac{2}{6}$.

2. $= 160 + \frac{5}{6}$
   
   Add the whole numbers and fractions separately.

3. $= 160\frac{5}{6}$
   
   Simplify.

4. The total length is $160\frac{5}{6}$ feet.
Practice Problems

3. Find $8\frac{1}{5} - 3\frac{3}{5}$. Write in simplest form.

4. Marlee is making necklaces and bracelets for a class craft sale. She uses $25\frac{3}{4}$ feet of string for the necklaces and $15\frac{1}{12}$ feet of string for the bracelets. What is the total length of string that Marlee used?
Answers to Practice Problems

3. $\frac{3}{5}$

4. $40\frac{5}{6}$ ft
Write the mathematical procedures you would use to find the following difference.

\[9 \frac{1}{3} - 6 \frac{5}{8}\]
Homework

+ Pages 303-306
+ #1 - 19 all
+ and #32 - 38 evens