



SKILL 8: PROBLEM SOLVING: Adding and Subtracting Fractions and Mixed Numbers

You can solve problems with fractions and mixed numbers the same way you solve problems with whole numbers. Sometimes you may have to use more than one operation, or you may have to interpret what the fraction means to solve a problem.

Example

Ada had rehearsals for a dance recital on Friday and on Saturday.

On Friday she practiced for $1\frac{1}{3}$ hours and on Saturday she practiced for $1\frac{1}{5}$ hours. On which day did she practice longer? How much longer?

Read Ada spent $1\frac{1}{3}$ hours practicing on Friday and $1\frac{1}{5}$ hours practicing on Saturday.

Plan Compare the mixed numbers and then subtract to find the difference.

Solve Since $\frac{1}{3} > \frac{1}{5}$, $1\frac{1}{3} > 1\frac{1}{5}$. So, she spent more time practicing on Friday than on Saturday.

$$\begin{array}{r} \text{Subtract:} \\ 1\frac{1}{3} \quad \rightarrow \quad 1\frac{5}{15} \\ - 1\frac{1}{5} \quad \rightarrow \quad - 1\frac{3}{15} \\ \hline \qquad \qquad \qquad \qquad \qquad \frac{2}{15} \end{array}$$

She practiced $\frac{2}{15}$ hour more on Friday than on Saturday.

Look Back See that your answer makes sense. Estimate the difference. Both fractions round to zero, so the difference is about $1 - 1 = 0$. Since 0 is close to $\frac{2}{15}$, the answer makes sense.

Guided Practice

Jamison walked $1\frac{1}{4}$ miles from his home to the park. He walked around a $\frac{1}{2}$ -mile track three times before walking home. How far did he walk altogether?

1. What operation should you use to solve? _____
2. Write the number sentence you can use to find the total distance.

3. How far did he walk altogether? _____

SKILL 8: Practice

Solve each problem.

1. Toni has an art class for $1\frac{1}{3}$ hours every Thursday. She was late to class this Thursday and was in class for $\frac{5}{6}$ of an hour. How late was she to art class? _____
2. At Paul's Pet Palace, $\frac{3}{16}$ of the animals are dogs and $\frac{5}{24}$ of the animals are cats. What fraction of the animals are neither dogs nor cats? _____
3. At a school music festival, Julia played saxophone for $2\frac{2}{3}$ hours, Caroline sang for $1\frac{3}{4}$ hours, Lamont played saxophone for $1\frac{1}{4}$ hours, and Taylor sang for $2\frac{3}{8}$ hours. Who had more time, the saxophone players or the singers? How much more? _____
4. Steve bought $2\frac{3}{4}$ pounds of broccoli, $1\frac{1}{2}$ pounds of spinach, and $\frac{7}{8}$ pound of carrots. He also bought $2\frac{1}{2}$ pounds of apples and $2\frac{3}{8}$ pounds of oranges. Did he buy more fruit or more vegetables? How much more? _____
5. To get to school, Harley traveled $\frac{5}{6}$ mile along Arlington Avenue, then another $\frac{3}{8}$ mile along Forest Street. How long is his trip? _____
6. During a trip, Steve drove $\frac{1}{4}$ of the time, Chris drove $\frac{1}{6}$ of the time, and Doris drove the rest of the time. What fraction of the time did Doris drive? _____
7. Paolo noticed that Channel 8 devoted $\frac{1}{6}$ hour to a news story and Channel 12 devoted $\frac{1}{8}$ hour to the same story. Which channel devoted more time? How much more time? _____

TEST PREP

8. A recipe calls for $2\frac{1}{3}$ cups of milk plus enough water to make $3\frac{1}{4}$ cups of liquid. How much water is used in the recipe?

A $\frac{1}{3}$ c

C $5\frac{2}{7}$ c

B $\frac{11}{12}$ c

D $5\frac{7}{12}$ c

Skill 8

9. Find $3\frac{5}{8} + 1\frac{4}{5}$ in simplest form.

Skill 4

F $4\frac{9}{13}$

H $4\frac{17}{40}$

G $5\frac{9}{40}$

J $5\frac{17}{40}$