▶Does the Answer Make Sense?

Problem Solving:
▶**Which Graph Is Best?**

▶Does the Answer Make Sense?

How do we know if we made a mistake?

When working with fractions, it is easy to work too quickly and make mistakes. A common error when we add or subtract fractions is not finding common denominators.
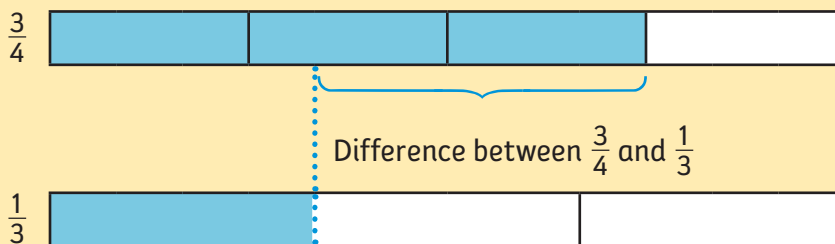
Improve Your Skills

Is this problem correct?

$$\frac{3}{4} - \frac{1}{3} = \frac{2}{1} \quad \textbf{ERROR}$$

There are two ways to keep from making this kind of mistake.

> Remember the story of the king and the peasants. When we add or subtract fractions, we want to find an exact difference or an exact sum.

1. **Use Fraction Bars**

$\frac{3}{4}$

Difference between $\frac{3}{4}$ and $\frac{1}{3}$

$\frac{1}{3}$

We see that there are no fair shares for the two fractions. That means if we try to subtract $\frac{3}{4} - \frac{1}{3}$ we would get a difference that is not exact. The difference would not be fourths or thirds.
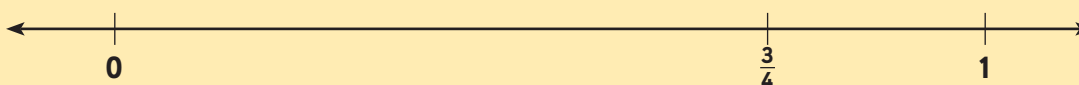
2. **Use Number Sense**
Look at the answer to the problem. The fraction is $\frac{2}{1}$, or 2. We know that we can't subtract with two fractions that are less than 1 and get an answer that is greater than 1.

Improve Your Skills

Is this problem correct?

$\frac{3}{4} + \frac{3}{4} = \frac{6}{8}$ **ERROR**

Here is a way to think about this problem that will keep us from making this kind of mistake. Using a number line can help.

The fraction $\frac{3}{4}$ is more than halfway between 0 and 1. We can't add $\frac{3}{4} + \frac{3}{4}$ and get a fraction that is less than 1. The answer $\frac{6}{8}$ does not make sense if we think about benchmarks and number lines.

If we think about fraction bars and number lines, we can avoid making a mistake. If we use good number sense, we can avoid mistakes, too.

Apply Skills
Turn to *Interactive Text*, page 39.

Reinforce Understanding
Use the *mBook Study Guide* to review lesson concepts.

▶Problem Solving: Which Graph Is Best?

How do we choose the best graph for our data?

We looked at different ways to show data on a graph. It is important that we learn to choose the best kind of graph to fit our data.

Example 1

Choose the best graph for the data.

Problem:

Students were asked to pick their favorite place to vacation.

Vacation Spots	Number of Students
Mountains	15
Theme Park	14
Beach	9
Big City	11
Mexico	3

Now we need to choose a kind of graph for our data.

- We wouldn't use a line graph because we are not trying to show a trend.
- We wouldn't use a pictograph because it doesn't show exact data.

Let's use a bar graph. Remember, bar graphs are good for showing relationships among data.

Favorite Vacations
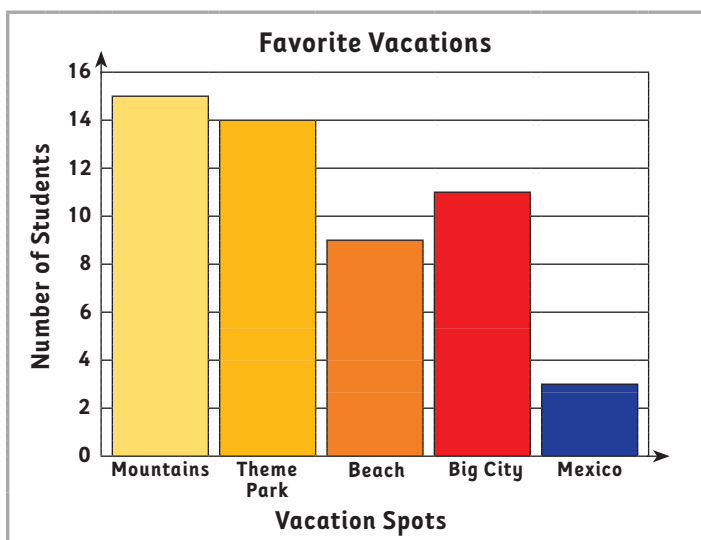
Problem-Solving Activity
Turn to *Interactive Text*, page 40.

mBook Reinforce Understanding
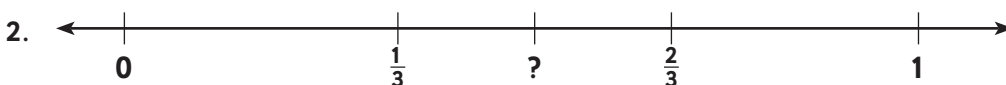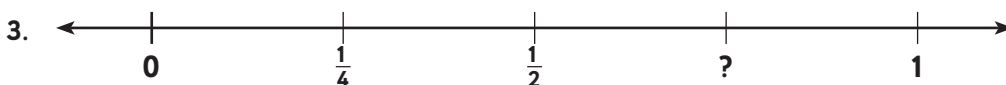Use the *mBook Study Guide* to review lesson concepts.

Lesson 14

Homework

Activity 1

Tell what fraction fits in the blank.

1.
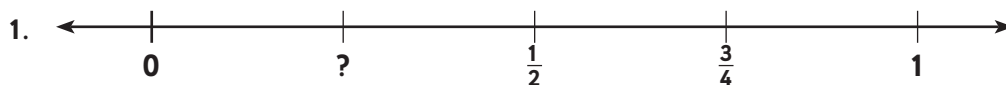
Which fraction fits in the blank: $\frac{2}{4}$, $\frac{1}{4}$, or $\frac{2}{3}$?

2.

Which fraction fits in the blank: $\frac{1}{4}$, $\frac{3}{4}$, or $\frac{1}{2}$?

3.

Which fraction fits in the blank: $\frac{3}{4}$, $\frac{2}{4}$, or $\frac{1}{3}$?

Activity 2

Add the fractions. Use the least common multiple to find the common denominator.

1. $\frac{1}{2} + \frac{1}{4} + \frac{5}{8}$

2. $\frac{5}{9} + \frac{1}{6} + \frac{2}{3}$

3. $\frac{1}{6} + \frac{3}{4} + \frac{1}{8}$

4. $\frac{4}{10} + \frac{1}{2} + \frac{1}{5}$

Activity 3

Add and subtract the fractions.

1. $\frac{7}{9} - \frac{2}{9}$

2. $\frac{4}{5} + \frac{1}{3}$

3. $\frac{4}{9} - \frac{1}{6}$

4. $\frac{3}{7} + \frac{2}{7}$

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

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

Activity 4 • Distributed Practice

Solve.

1. $\begin{array}{r} 1{,}600 \\ -700 \\ \hline \end{array}$

2. $\begin{array}{r} 8{,}512 \\ +2{,}158 \\ \hline \end{array}$

3. $\begin{array}{r} 70 \\ \times 90 \\ \hline \end{array}$

4. $\begin{array}{r} 436 \\ \times8 \\ \hline \end{array}$

5. $9\overline{)791}$