Subtract Across Zeros

Objective Subtract from numbers with one or more zeros.

▶ Learn by Example

You have learned to subtract 3- and 4-digit numbers. In this lesson, you will learn how to subtract across zeros. Sometimes you have to regroup more than once before you begin to subtract from numbers with zeros.

A taxi company owns and operates 4,302 taxis. There are 1,155 taxis on duty today. How many taxis are not on duty today?

$$4,302 - 1,155 = \bigcirc$$

Example

1 2 < 5, so you need to regroup. There are no tens to regroup. Regroup 3 hundreds as 2 hundreds and 10 tens.

$$\begin{array}{r} 4,\overset{2}{\cancel{3}}\overset{10}{0}2 \\ -1,155 \end{array}$$

2 Regroup 10 tens as 9 tens and 10 ones.

$$\begin{array}{r} 4,\overset{2}{\cancel{3}}\overset{9}{\cancel{\overset{10}{0}}}\overset{12}{\cancel{2}} \\ -1,155 \end{array}$$

3 Subtract ones, tens, hundreds, and thousands.

$$\begin{array}{r} 4,\overset{2}{\cancel{3}}\overset{9}{\cancel{\overset{10}{0}}}\overset{12}{\cancel{2}} \\ -1,155 \\ \hline 3,147 \end{array}$$

Solution: 3,147 taxis are not on duty today.

Another Example

To subtract from 10,000, you must regroup.

$$\begin{array}{r} \overset{9}{\cancel{\underset{10}{10}}}\,\overset{9}{\cancel{\underset{10}{0}}}\,\overset{9}{\cancel{\underset{10}{0}}}\,\overset{10}{\cancel{0}} \\ \cancel{10,000} \\ -\ 5,732 \\ \hline 4,268 \end{array}$$

1 Regroup a ten thousand into 10 thousands.

2 Regroup 10 thousands.

3 Regroup 10 hundreds.

4 Regroup 10 tens.

▶ Guided Practice

Find the difference.

Ask Yourself
- Did I subtract correctly?
- Is my answer reasonable?

1. $840 - 49$ **2.** $4,000 - 3,258$ **3.** $3,405 - 1,267$

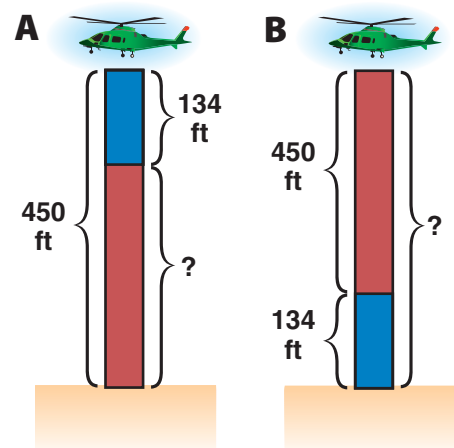## Guided Problem Solving

Use the questions to solve this problem.

4. A helicopter is flying at a height of 450 feet. If its height decreases by 134 feet, at what height will it be flying?

A   B

134 ft

450 ft

450 ft

?

134 ft

?

a. Understand Which picture could you use to help you solve the problem?

b. Plan Use the picture to decide. Should you add or subtract?

c. Solve Solve the problem and write the answer.

d. Look Back Look at the picture you chose. Does your answer make sense?

123 Math Talk How is regrouping to find $450 - 134$ different from regrouping to find $400 - 134$?