► ACTIVITY 1.5

Developing Concepts

SETUP
Work with a partner.

MATERIALS
• paper
• pencil

Exploring Problem Solving

► **QUESTION** **How can problem solving strategies help you find solutions to problems?**

When solving a problem, you need to understand two things: what you are asked to find and what information you need to solve the problem. Then you can use algebra or a problem solving strategy.

► **EXPLORING THE CONCEPT**

1 State what you are asked to find in the following problem.

In science class you have five 100-point tests and one final 200-point test that counts as two tests. You need an average of at least 90 points to get an A. Your scores for the five 100-point tests are 88, 92, 87, 98, and 81. What is the lowest score you can get on the final test to get an A?

2 List the information you need to solve the problem.

3 Use the strategy Guess, Check, and Revise to solve the problem.

Test Average: $\dfrac{88 + 92 + 87 + 98 + 81 + ?}{7}$

Sample First Guess: $\dfrac{88 + 92 + 87 + 98 + 81 + 149}{7} = 85$ Too low

Sample Second Guess: $\dfrac{88 + 92 + 87 + 98 + 81 + 191}{7} = 91$ Too high

Your Guess: $\dfrac{88 + 92 + 87 + 98 + 81 + ?}{7} = \underline{\,?\,}$

The lowest score you can get on the final test to get an A is _?_.

► **DRAWING CONCLUSIONS**

Solve the real-life problem. Explain your strategy.

1. A plumber charges a basic service fee plus a labor charge for each hour of service. A 2-hour job costs $120 and a 4-hour job costs $180. Find the plumber's basic service fee.

2. Jerry has received the following math test scores: 80, 75, 79, 86. His final exam is worth 200 points and counts as two tests. What is the lowest score he can get to keep an average of at least 80 points?

3. A Native American art museum charges $8 per visit to nonmembers. Members pay a $40 membership fee and get in for a reduced rate of $5. How many times must a person visit the museum for membership to be less expensive than paying for each visit as a nonmember?

STUDENT HELP

↳ **Skills Review**
For help with problem solving strategies, see pp. 795–796.