
Problem Solving Activity

1. Read the following problem:

Two containers each contain the same amount of juice. If 15 ounces of the first container are poured into the second container, then the second container has twice as much juice as the first container. How many ounces of juice did the first container have originally?

2. Did you understand the problem? Try to represent the problem in simple understandable form: make a short record, a picture, a diagram:

3. Jot down all the ideas of the solution that you get in your group. Discuss your ideas with each other.

4. What is your answer? Does it make sense in the context of the original problem?

5. Homework: Write down the full solution that should include every step described in instructions below:

Problem Solving Using Algebraic Methods

- Understanding the Problem.**
 - Carefully read the problem.
 - Translate it to your own language.
 - Organize your data: make a diagram, a chart, a picture.
- Setting up an equation**
 - Choose a variable (or variables); write down what unknown quantity your variable stands for.
 - Express other unknown quantities in your problem through the chosen variable(s).
 - Reread the problem and write an equation (or equations) that represent relationships among the numbers in the problem.
- Solving an equation**
 - Solve the equation (s).
 - Reread the question of the problem and find the unknowns asked for.
- Check your result**
 - Check your result in the context of the original problem.
 - Give your answer in the context of the original problem.

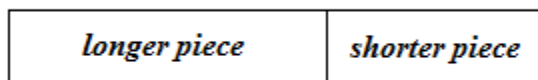
Sample of the Complete Solution

Problem: A 25-foot board is cut into two pieces so that the longer piece is one foot more than twice the length of the shorter piece. Find the length of each piece.

Solution

- Understanding the Problem: Diagram**

25 ft



longer piece = twice the shorter piece + 1 ft

- Setting up an equation:**
 - Descriptions of a variable:** x is the length of the shorter piece
 - Expressions for the other unknown quantities:** So the length of the longer piece is $2x + 1$
 - Equation:**

25 ft



$$(2x + 1) + x = 25$$

- Solving an equation**
 - Solution:** $2x + 1 + x = 25$
 $3x + 1 = 25$; $3x = 24$; $x = 8$
 - Other unknowns:** The shorter piece is **8 ft**. So the longer piece is $8 \times 2 + 1 = 17$ ft
- Check your result**
 - Check (Makes sense?):** 8ft and 17ft make 25 ft. 17ft is one foot more than twice 8ft. **Yes**
 - Answer:** **The shorter piece is 8 ft and the longer piece is 17 ft.**