Section 1.1

Introduction to Problem Solving
*How to Solve It* by George Polya outlines a four step-process for solving problems.

1) Understand the Problem
2) Devise a Plan
3) Carry Out the Plan
4) Looking Back (check your work, look for another approach)
Common Strategies

- Making a Drawing
- Guessing and Checking
- Making a Table
- Using a Model
- Working Backward
- Using Algebra
Make a Drawing

4) There are 560 third- and fourth-grade students in King Elementary School. If there are 80 more third-graders than fourth-graders, how many third-graders are there in the school?
6) Sasha and Francisco were selling lemonade for 25 cents per half cup and 50 cents per full cup. At the end of the day they collected $15 and had used 37 cups. How many full cups and how many half cups did they sell?
Guess and Check

12) Carmela opened her piggy bank and found she had $15.30. If she had only nickels, dimes, quarters, and half-dollars and an equal number of coins of each kind, how many coins in all did she have?
14) What is the smallest number of different colors of tile needed to form a 4 x 4 square so that no tile touches another of the same color along an entire edge?
20) Keiko had 6 more red tiles than yellow tiles. She gave half of her red tiles to Amelia and half of her yellow tiles to Ramon. If Ramon has 7 yellow tiles, how many does Keiko have?
Use any strategy.

30) A farmer has to get a fox, a goose, and a bag of corn across a river in a boat that is only large enough for her and one of these three items. She does not want to leave the fox alone with the goose nor the goose alone with the corn. How can she get all these items across the river?