In sections 1.1 and 1.2, you learned to recognize a pattern which helped you to get to a solution. In this section, problems are puzzle-like, logical, and mathematical. These are good practice to help you reason your way to a solution.

George Polya (1888-1985) proposed a four-step method for problem solving:

**Step 1: Understand the problem**

You cannot solve a problem if you do not understand it.

Read it several times and know what it is asking for.

**Step 2: Devise a plan**

There are many ways to attack and solve problems.

Start with one particular way and if it does not work, then find another way.

**Step 3: Carry out the plan**

If you get “stuck” or run into a “dead-end” then be persistent until you have reach a solution. You can even stop and come back to your problem.

**Step 4: Look back and check**

Did you answer the question?

Did your answer make sense?

Is it logical and reasonable?

Here are some problem solving hints to get you started:

Make a table or chart

Look for a pattern

Draw and label a sketch

Solve a similar problem but an easier one

Make an educated guess (inductive reasoning)

Write an equation and solve it

Use a formula

Work backward

Guess and check

Use trial and error

Use common sense

**EXAMPLE:**

How many squares (of any size)

are in the figure? \_\_\_\_\_\_\_\_\_

**EXAMPLE:**

Divide the circle into 11 pieces using only 4 straight lines.

Hint: pieces do not have to be equal

Practice circles……