Math 102 Notes for Day 2

Sections 1.1-1.3

Problem Solving Strategies

> **Strategy:** **Be Systematic.** If you approach a situation in an organized, systematic way, frequently you will gain insight into the problem. Insight often comes from identifying patterns.

1. Make a <u>systematic</u> list of all the "2-letter code words" that can be made from the letters

   ƒ , h, y, p if each letter can be used only once.

> **Strategy:** **Convert a New Problem to an Older One.** An effective technique in solving a new problem is to try to connect it with a problem you have solved earlier. It is often possible to rewrite a condition so the problem becomes exactly like one you have seen before.

2. Read Quiz Yourself 1 (p. 4 and what we did on page 1 of your notes on the first day of class and compare it to example 8 in your textbook (p. 10). Your book states that example 8 is "essentially the same problem as the four architects shaking hands in Quiz Yourself 1. Analyze what is alike in the two problems that allow you to solve them the same way. Explain your thinking as you solve Example 8 on p. 10

3. Given $P = \{x\colon x$ is all the past presidents of the United States$\}$ it can be described to written in

_____

4. Fill in the blanks in the statements below with $\in$ or $\notin$ to make each statement true.

    a. James Buchanan _____ P

    b. Pratibha Patil _____ P

    c. George H.W. Bush _____ P

    d. Barack Obama _____ P

4. Find the $n(A)$ which is "the cardinal number of set A" if the following sets are each A.

    a. $\{2, 4, 6, 8, 10, 12, ..., 58\}$ _____

    b. $\{5, 9, 13, 17, ..., 101\}$ _____

    c. $\{x\colon x$ is a letter in the Moorhead$\}$ _____

    d. $\{x\colon x$ is a whole number$\}$ _____

    e. $\{\{1, 2\}, \{9\}, \{4, 7, 9, 10\}\}$ _____

5. Find an element of set B that is not element of set C.

  $B = \{y\colon y$ is a real number$\}$

  $C = \{y\colon y$ is rational number$\}$

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6. If a person says that he always lies, is that the truth or a lie???

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<u>Assignment Due Friday Jan 15th:</u>

    Read pp. 1-5

    Complete # 4, 10, 22 on p.15 &

    #43-56, 59-67, 73, 77, 81, 82, 87 on pp. 32-33