

Module 4:

MATHEMATICS AS PROBLEM SOLVING

At the end of the module, you should be able to:

1. Discuss Polya's framework for problem solving; and
2. Apply Polya's problem solving techniques.

SECTION 4.1: PROBLEM SOLVING PROCEDURE



George Polya (1948) outlined the strategy in solving word problems that are so common in mathematics courses. Until now, his procedure is the one being followed in solving problems.

Polya's Procedure

1. Understanding the problem.
2. Thinking of a strategy.
3. Following through with the strategy.
4. Reviewing the solution.

SECTION 4.2:

PROBLEM SOLVING TECHNIQUES



GUESS AND CHECK

"Guess and Check" may be used to solve mathematical problems by giving an answer (not necessarily correct) and then checking whether or not the given answer satisfies all the conditions in the problem.

MAKE AN ORGANIZED LIST

This is a problem-solving strategy in which data are organized in a table or a diagram and the options are considered in answering the problem.

ELIMINATING POSSIBILITIES

This is a strategy where the correct answer is obtained by a process of listing possibilities and removing those that do not satisfy the condition in the problem.

SOLVING AN EQUATION

This is a problem-solving strategy where an equation is formed from the conditions provided in the problem.