Programming Steps

Problem-Solving Phase

1. Analysis and specification.

   (Define problem and what solution must do.)

2. General solution (algorithm).

   (Develop logical sequence of steps to solve problem.)

3. Verify.

   (follow steps - by hand.)

Implementation Phase

1. Specific solution (program).

   (Translate algorithm to code.)

2. Test.

   (Check computed results manually.)

Maintenance Phase

1. Use the program.

2. Maintain.

   (Modify to meet changed requirements or to correct errors.)

(From Dale, Nell and Weems, Chip, *Introduction to Pascal and Structured Design*, 4th edition, D. C. Heath and Company, Lexington, Massachusetts, 1994).

Five Phases of Programming

1. State the problem clearly.
2. Describe the input and output information.
3. Work the problem by hand (or with a calculator) for a specific set of data.
4. Develop a solution that is general in nature.
5. Test the solution with a variety of data sets.

(From, Etter, D. M., Structured FORTRAN 77 for Engineers and Scientists, 2nd ed. The Benjamin/Cummings Publishing Company, Inc. Menlo Park, CA, 1987.)