Problem-Solving

I. Problem Statement

In your own words, state the problem clearly enough so that someone unfamiliar with the problem who picked up your paper could understand what it is you are asked to do.

II. Process

Describe in detail what you did in attempting to solve this problem. Some questions you might want to consider are:

- How did you get started?
- What approaches did you try (please see the Problem-Solving Strategy Inventory)?
- Where did you get stuck?
- Did you talk to anyone about the problem? Did that hinder you?
- What drawings did you use (Please include all the drawings)?

Include things that didn’t work out or seemed like a wasted of time. Do this part of the write up even if you didn’t solve the problem.

III. Solution

State your solution(s) as clearly as you can. Include any charts, graphs, lists, etc. that you used to help you. If you only obtained a partial solution, give that. If you were able to generalize the problem, include your more general results.

What solution(s) did you get? What makes you think you got it right? Do you think there could be other correct solutions? Why or why not? Explain how you know that your solution is the best one possible.

Your explanation should be written in a way that will be convincing to someone else even someone who initially disagrees with your solution.

IV. Extensions

Invert some extensions to this problem. That is, write down some questions that might be related to this problem. They can be easier, harder, or about the same level of difficulty as the original problem. You are not expected to solve these additional problems.
V. Learning

This is a chance for you to reflect on the problem. What did you learn about mathematics in this problem? What did you learn about yourself? How did this problem relate to other problems or work you have done? Was this problem too easy, too hard, or about right? Explain why.

From ToolBox, British Columbia Ministry of Education

PROBLEM-SOLVING STRATEGY INVENTORY

Think about your use of strategies when solving the problem and check the following that apply.

1. _____ I didn’t think about using strategies at all.
2. _____ The idea of using strategies came to my mind, but I didn’t think about it much more.
3. _____ I looked at a strategy list, but didn’t try a strategy.
4. _____ I looked at a strategy list and picked a strategy, which I tried.
5. _____ I didn’t look at a list, but just thought of a strategy to try.
6. _____ I used at least one strategy and it helped me find a solution.
7. I tried the following strategies:
   _____ guess and check
   _____ make a table
   _____ look for pattern
   _____ make an organized list
   _____ other
   _____ solve a simpler problem
   _____ work backward
   _____ draw a picture
   _____ write an equation

* The total length of the write-up should be about two pages typed (double spaced with the font size 12) or four pages hand-written.