Polya's Problem Solving Process

Step One: Understand the problem.

In this step, ask questions like what do I know? What is given? What is irrelevant? What am I asked to do or find? Have I seen problems like this before? Do I know all the necessary information to proceed?

Step Two: Make a Plan.

In this step, decide how to find what you need with what you know. Decide upon a problem solving strategy (heuristic) like guess-check-revise, make a table, use algebra, draw a picture, solve an easier problem, act it out, or look for a pattern.

Step Three: Carry out your Plan.

In this step, you do what you decided to do in step two. While you carry out your plan, be careful that you are not making any arithmetic errors and that you are performing procedures that make sense for the context of the problem. Also be careful that you note what units your answers are in (e.g. feet, mph, square meters, cubic inches, etc.).

Step Four: Reflect Back.

In this step, you ask yourself the question, "Does my answer make sense?" or "Is my answer reasonable?" This step includes checking your work carefully, but it also includes checking to see if all solutions are found, if what you found answers the original question, and if it makes sense. For example, a student who arrives at an answer of 9.5 for the "total number of school buses needed for a school field trip" needs to revise their answer since half of a school bus does not make sense.