Steps to Mathematics Learning (Bloom’s Taxonomy)

1. Take material from the course and apply it to solve problems. (Application)
   
   (a) Lectures
   - Before class review ideas from the previous section and read over the section to be covered.
   - Learn to apply concepts by practicing problems during class (while taking notes or during time set aside for this).
   - If class time is set aside, ask questions when you have trouble, or ask the teacher before or after class.
   - After lecture cement each technique by trying other example or homework problems with the same concept.
   
   (b) Book
   - Work through examples in the text until you understand the steps.
   - Work homework problems using methods introduced in the text.
   - Try to complete all homework problems after you understand the techniques to produce repetition that will improve your ability to do entire problems correctly and cut down on silly mistakes.
   - If you can’t solve the problems yourself and read the solution in the solution manual, wait a day and try the problem again.

2. Identify which tools need to be used for a problem. (Analysis)
   
   - After getting a grasp for a particular technique or tool, write down which types of problems use that tool.
   - Find identifying features, such as key words or phrases, used in each type of problem to be able to choose the proper tool.
   - Ask yourself, how did I know how to do that problem?
   - For each chapter and before each test, make a chart of the different types of problems, a way to identify the type of problem, and the tool(s) used to solve the problem

3. Solving problems using multiple tools (Synthesis)
   
   - Some test and exam problems require the use of multiple techniques from different sections of the course or use complicated techniques that are built upon a number of techniques learned earlier in the course.
   - Practice breaking down homework or review problems into multiple parts and listing the techniques used for each part.
   - Review and practice difficult techniques that are used in many types of problems.
   - A good source for these types of problems is the review section of each chapter.
4. Solving conceptual problems. (Evaluation)

- Some problems do not ask you to use tools you have learned in the course but want you to apply concepts in a new way. These problems require an understanding of the ideas underlying the techniques and tools used to solve problems.
- Write down the concept or idea behind each tool or technique.
- Connect the concept to other concepts used in the course, i.e. which other concepts are needed to understand Concept A and which other concepts are dependent on Concept A.
- Try to understand why the idea is true and what the concept means.
- If concept is difficult to understand, ask professor, tutor, help room teacher, or other student to explain the concept, then look for opportunities to explain the concept to another student.
- Create a concept map for the chapter or course and update it when new concepts are learned.
- As you work a problem using techniques connected to the concept, make sure the method of solving makes sense: Are there other more efficient or better methods?
- Create your own conceptual problem using the concept.
- Identify and practice any conceptual problems on review sheets, old tests, or in the book.