Hints on How To Study Mathematics

• Recognize that studying math is different from studying other subjects.

• Three elements contribute to success or failure in math: ability, effort and strategy. If you aren’t making the grade you want, you may need to adjust your effort and strategies.

• Choose a positive attitude.

• Think with pencil and scratch paper.

• Be neat and accurate.

• Take time to do your work, and do it on time.

• Concentrate on the fundamentals and learn the vocabulary.

• Discuss ideas and concepts, not just problems.

• Plan ahead, be organized.

• When you don’t understand, ask questions. Don’t give up.

• Try to find relationships between similar problems. Focus on key steps and procedures.

• Study until the appropriate procedures and strategies almost become automatic. Don’t just stop when you’ve completed the assigned homework.

• Think through the problems rather than trying to rely solely on memorized procedures.

• As you take notes in class, write down any material written on the chalkboard (especially examples, as they are worked); record any new terms, symbols, definitions, and techniques; and record all the material the instructor “highlights”. Later, read over your notes and add clarifying notations.

• Study between two and three hours for each hour spent in class.

• Sit towards the front of the classroom.

• Always check your work: re-read the question; check your calculations; do the problem over a different way.

• When you see a word you don’t understand, look it up.
• On a test, don’t just start with the first problem and work straight through. Start with the problems you know you can do. Then do the problems that you are less confident about. Allot the remaining time between checking your completed work and attempting the remaining problems.

• Study in a quiet, well-lit place away from distractions.

• READ THE BOOK. Don’t just look at the examples, work through them. As you read, write down questions.

• Don’t try to “cram” the night before an exam. Study every day.

• When you have difficulty, consult with your classmates, a tutor, or the teacher.

• When you get confused in class, don’t just stop taking notes and daydream - ask a question, request clarification.

• Look over homework or exam problems you got wrong. Try to learn from your mistakes.

• Ask questions in and out of class.

• When you miss a class, get the notes from another student, ask the instructor about any announcements, and make up all missed assignments (whether the teacher will accept them for credit or not).

• Before you begin doing your homework, look over the text and your notes.

• If you’re stuck on an problem, take a break and come back to it later.

• Get a math study buddy - somebody to study with, someone to call when you’re stuck on a problem.

• Make your homework notebook a homework diary. Write notes to yourself about your strategies, your thoughts, what worked and what didn’t, how problems relate, what to watch out for, etc.

• Find out what resources are available to you besides the text, your classmates and the teacher. You may have access to study guides, solutions manuals, computer tutorials, videos, audio tapes, or study groups. Use all the resources you can.

• Be on time for class.

• Keep your math notebook neat and organized.

• Bring your text and notebook to every class.
• Review your notes often.

• Never get behind

• Before you try to do a problem, read the directions.

• Make note cards for every new definition or term used; each new procedure or algorithm; common types of errors; particularly difficult problems; and general, representative problems.

• Every 45 minutes, take a 5 minute break from studying.

• It is not enough to be familiar with the material, you must KNOW it.

• When preparing for an exam:
  - Drill with note cards; practice working problems with your book and notes closed; review notes and text; and reflect on similarities, differences and possible variations on problems.
  - Get a good night's sleep; eat properly; and relax for a few hours before the test.
  - Just before the exam, refresh your memory on one or two key procedures or concepts, but do not try to cram.

• If you start to panic on a test, try to rid yourself of distractions and concentrate on the problems. Clear your mind. Relax. Consciously stop the cycle of negative self-statements. Take a few slow, deep breaths. Look for a problem you are reasonably sure you can do and start again there.

• Always show all your work. The more you have on paper, the easier it will be to figure out what you're doing wrong and what you're doing right.

• Be an active listener.

• If you cannot solve the assigned problem, look around for an appropriate related problem.

• Try to perform all 4 phases of problem solving: understanding the problem, devising a plan, carrying out the plan, and looking back.

• Use the following strategies for problem solving: make a table, draw a diagram, find a pattern, and/or write a simpler problem.