SUCCESS IN MATH

*Success in courses that involve problem-solving tests is a process that involves **active** participation in class, **active** daily study skills, **active** review, **active** test taking procedures, and **active** self-evaluation. Here are some tips to help you become active in your problem-solving courses…*

ACTIVE CLASS PARTICIPATION:

- **Attend class every day and take complete notes.** Instructors often formulate test questions based on material and examples covered in class.
- **While listening to the lecture, think about the issues being discussed.** Try to answer the questions posed in class.
- **Most importantly, ASK QUESTIONS.**

ACTIVE DAILY STUDY SKILLS:

- **Math is learned by DOING PROBLEMS. Do the homework.** The problems will help you learn the formulas and techniques you need to know. Keeping up with the homework is essential. Falling a day behind puts you at a disadvantage. Falling a week behind puts you in deep trouble. Your instructor may not collect homework. You need to be responsible for getting it done.
- **Set aside regular times in your schedule for homework.** The general rule of thumb is to spend at least 2 hours of study time per class hour. But depending on the student, class, section, etc., that may not be enough. Work carefully and thoughtfully. Aim for understanding, not speed. If you get the wrong answer, or even if you get the right answer but are puzzled about something, don't let it drop. The more challenging the material, the more time you should spend on it.
- **Form a study group.** Meet once or twice a week. Go over problems that you've had trouble with. Either someone in the group will help you, or you will discover that you are all stuck on the same problems. Then it is time to get help from the tutor room or the professor.
- **When you are stuck, there are many resources at your disposal.** Ask questions in class, visit the professor during office hours, visit the math tutor room, ask your study group or a classmate, or request a private tutor if these other sources do not provide all the help you need. Remember that these sources should act as coaches not crutches. They should give suggestions or hints, not do the work for you. Keep in mind that during the test these coaches will not be there, you will ultimately have to solve the problems on your own.
- **Make flash cards.** Make flash cards for definitions, formulas, identities, and theorems immediately after they are discussed in class. Memorize them right away and test yourself.

- **ACTIVE REVIEW:**
- **Start studying early.** It is impossible to cram 3 or 4 weeks of learning into a couple of days of studying. The suggestions for daily study skills are the first step in test preparation. Then go over class notes and reading. Identify the major concepts. Highlight the topics/problems your instructor emphasized and note why these points are important. Look for fundamental problem types. Typically a course has recognizable groups/types of problems. Make sure you can tell them apart and know how to approach them.
- **Check that you can still do the homework problems.** Work through selected old quiz and homework problems. Redo the problems, do not just read what you had previously written. Do new problems from the textbook. Practice working problems out of sequence to simulate the test-taking experience. Work with a time limit and try to solve as many problems as you will have on a typical test.
- **Finally, get lots of sleep the night before the test!**

ACTIVE TEST-TAKING:

- **Write down a few key concepts that you want to refer to during the test.** This does not mean to write every formula, definition, relationship, etc. Most likely you will not have time to write all of this down and complete the test on time.
- **Skim questions and develop a plan for your work.** Start with the problems that you are confident that you can answer. For more difficult problems, reread the problem and be certain that you understand what it is asking. Mark key words, identify the givens and unknowns, or sketch a picture. If you get seriously stuck, try to write out an equation to express the relationships between the givens and unknowns. It can also be helpful to look back at other test questions that may give you insight into solving the problem at hand. Try to solve a simpler problem or break the problem into a series of smaller problems.
- **Be aware of the time.** Allow more time for higher point value problems and reserve time at the end for reviewing your work and fixing emergencies.

ACTIVE SELF-EVALUATION:

- **Once you receive your test results, carefully review your work.** Math classes build on previous material. You will need to understand the information on this test to proceed on to the new material. In addition, use this evaluation as a guide to study for the final exam.
- **Examine why errors occurred.** Use any comment written by the instructor to guide you in this process.

  Was your error a result of carelessness?
  Did you misread the question?
  Did you consistently miss the same type of question?
  Was your error due to not recalling the correct formula?
  Did you run out of time?
  Did you practice problems of the kind you missed?

Sources: http://www.learning.utexas.edu/handouts.html
Courtesy Sanger Learning & Career Center, The University of Texas at Austin
Department of Mathematics and Computer Science at Saint Louis University