

## Strategies for Managing Quantitative Homework

### General Strategies:

- Learning mathematics takes time, patience and repetition. Don't expect to understand every new topic the first time you see it.
- Remember that everyone learns in different ways. Pay attention to what is working well for you and apply those strategies when you find material challenging.
- Math builds on itself: each concept is the foundation for the next. Work to understand each concept so you will be well prepared for the next one. Putting effort into homework now will make review for tests and exams easier later.
- Do your homework. Mathematics requires practice; it can rarely be learned through observation (Schiavone 5, 14, 24).
- Keep your syllabus handy. Read and follow any instructions, tips and suggestions your instructor may have given for success in the course.

### Homework Strategies:

- Review your notes before you do your homework. It builds confidence if you don't have to keep going back to your notes for every question. "It's always easier to review than to relearn" (Schiavone 2).
- Work through problems yourself. Seeing and understanding someone else's solution does not translate into knowing how to do it yourself. You cannot truly learn to drive by watching from the passenger seat, and you cannot truly learn to solve math problems by looking at completed work (Schiavone 25, 47).
- Write out full and complete solutions to each problem. Full solutions are needed on tests or exams, so the same procedures should be followed in your homework.
  - Writing out full solutions to assigned questions is similar to creating and following recipes or maps. Include words describing the process; do not jump from step to step without writing out what you are doing.
  - Some questions require more effort and problem solving than others. Recording the steps to a difficult problem will save you time when you come across a similar problem later (Schiavone 19).
  - Once you have the recipe or map, each time you use it the process will become more familiar and easier. Do this often so that the processes start to become automatic (Schiavone 5). If you do not write out the full solution, you will be missing parts of your map when you try to study (Schiavone 18-19).
- Create your own study guide. If there are many formulas and definitions to remember, put together a personal glossary with explanations in your own words. Your glossary will become a user-friendly guide to the main concepts of the course, reducing your need to constantly search through your notes. If they are in your own words, the definitions will be more memorable and show that you understand what you are learning.

- Work for more than the right answer in your math homework and assignments.
- Mathematics assignments and exams require you to take the processes you have learned, and apply them in new situations. Try to understand the procedures and skills you use for each question so that you can use them again in a different context. Being able to use and manipulate a procedure is more important than struggling through to a correct answer without knowing how you got there.
- Your ability to communicate your problem solving process is important for getting full and complete marks (Schiavone 58). Getting the answer without documenting how you got there is usually not sufficient.
- Exam questions ask you to apply skills you have acquired through coursework in new situations. Categorizing questions according to the question keywords (and their variations) will help you prepare for tests.
- Form a study group with classmates or consider participating in a Facilitated Study Group. Working with peers reduces the isolation of homework and studying, and encourages a more active problem solving process. Learn from your classmates and discuss the different strategies you use (Schiavone 21).

### **When you hit a snag:**

- Don't give up too soon. There is learning going on even if you don't get the answer immediately – math is about more than a correct answer.
  - Work the problem as fully as you can. If you give up too soon you miss out on prime opportunities to problem solve the way you will need to on tests and quizzes.
  - Review your notes and try the problem again. You may have missed a step or applied the wrong formula.
- Seek help. If after an honest attempt at the problem you are still stuck, seek out peers, a mentor from the Centre for Student Success or your professor. Take your work with you – for you to understand the answer, you need to see where you took a wrong turn. The person helping you also benefits from seeing your attempts (Schiavone 21).
- Fix problems as they arise. Rather than waiting until assignments or midterms are coming up, get help for each concept you don't understand. This will make the next concepts easier and help avoid last minute cramming (Schavone 44).
- Don't stop when you find or see the right answer! Go back over your original attempt and find where you went wrong. This is called 'tracing the error' (Schiavone 3) and will help you avoid the same mistake in the future.
  - Both in your homework and when creating study notes for yourself, make note of the places you tend to slip up and any help you received. Add in a reminder such as 'remember to cross multiply before trying to solve for x'.

### Reference

Schiavone, P. (1998). *How to study mathematics: Effective study strategies for college and university students*. Toronto: Prentice Hall.