1 Introduction
This handout is intended to be a guide to the ins and outs of introductory courses in mathematics. It includes information on courses, grades, classes, instructors, exams, and studying. It is by no means comprehensive and you probably have questions that it does not answer. We have tried to answer questions that students ask most often. If you have other questions, ask your instructors: they will be glad to help you.

This is not a recipe for learning math without doing any work, nor is it a guide which guarantees you an "A." Some of these suggestions will prove useful to you; others may not help you at all. If you have suggestions, let somebody in the Math Department know; it will benefit the students who come after you.

2 Courses
Before you do anything else, make sure you're in the right course! This can mean one of two things. In the first place you may not be registered for the course you plan to take (or you may be registered for a course you don't want). Whatever changes you have to make, remember that instructors cannot sign add or drop slips for you. You must take them to Arlotta Havlik in White Hall 128. Note that this applies also to switching from one section to another within the same course. If you are confused, ask.Try to make changes as early as possible; sections are limited in size, and the one you want may close up if you wait too long.

You also might want to know whether you belong in a certain course or not. Talk to your instructor first. If you have questions about prerequisites (e.g., if you are a transfer student or took some calculus elsewhere), AP credit, the different course sequences, or courses in general, you can talk to Professor Steve Chase (White Hall 231, 5-3888, chase@math.cornell.edu), who is Associate Chairman of the Math Department.

If you are interested in adding a course, it is often useful to talk to the person who is teaching it. To find out who that is, consult the lists posted in various places on the first floor of White Hall; alternatively, ask a secretary in White Hall 129. You can also obtain a handout describing the various course sequences. To locate an instructor's office, consult the office directory outside the Math Library (North end, first floor of White Hall). Note: If you need to get a message or homework to an instructor or TA during the day, leave it with the secretaries in White Hall 129. This office is usually open weekdays from 8:00 AM to 3:00 PM. At other times you may deposit such items in a letter drop outside White Hall 125.

3 Grades
Grades in elementary mathematics courses are better grades. The Math Department has suggested grading standards for math courses. For example, the median grade for Math 111 is normally C+/B-. These standards may be useful if you wish to keep track of how you stand during a course. Note, however, that letter grades are usually not given on individual exams.

Grades have a way of making people unhappy. Instructors included. Nobody likes to receive a low grade, and most instructors would be happy not to give them. Some people feel that the whole idea of ranking or evaluating people is wrong, and should be scrapped.
If skipping lecture is unwise from the point of view of learning the material, skipping recitation (or skipping a small independent section) is unwise for a more pragmatic reason. Your instructor or TA may appear on the term paper, and you don't know who is doing the marking. Remember there are people who determine your grade.

Recitations will probably stress problem-solving techniques; the independent sections will involve problems solving within the lecture. In other words, you will spend time working examples and homework problems, and it is a good time for you to ask questions and see the nuts and bolts details that are often omitted from more theoretical treatments of the topic. People often have questions about the material covered in lecture or sections assigned in the textbook, and the time to straighten out those points is now. It also helps your instructor associate a person with the name in the rook list.

There are a number of things you can do to get more out of your class. For example, people often complain that they are too busy taking notes that they have no time to think about what is being said. If you have the time, you might find it helpful to organize a group of students in the same class. One person (with legible handwriting) is assigned to take notes, which are distributed to the group members later. The others are free to concentrate on what the instructor is saying.

It is also good to come to class prepared with questions. You will almost certainly encounter things which puzzle you when you are studying, make a note of them and bring them to class. If you miss a problem on the homework or on an exam, you fail to understand it at first sight, then ask your instructor. If you clear up problems as they arise, things will be easier for you when you are reviewing for exams. You will probably find in the end that the questions in recitation are less than the lecture (though most lectures are more difficult when people ask questions. However, if you are too shy to ask questions during class, you can always ask your instructor afterward. Don't think that your questions are "too stupid" to be worth asking. If you knew all the answers, you wouldn't be taking the course. Your classmates probably have the same questions that you do. Ask! Every sign of interest is welcome.

On rare occasions when illness or other emergencies force you to miss class, your instructor may make every opportunity to find out what was covered. You may be able to obtain the notes from another student, you should talk to the instructor about obtaining any handouts that were distributed. Instructors understand that events beyond your control may force you to be absent. You can expect sympathy and tolerance as long as things don't get out of hand.

If, after all this, you decide that you would rather not attend class regularly, be fair to your instructor. Do not appear the day before an exam and expect to receive special instruction.

When you are in class, be considerate of the instructor and your fellow students. Instructors get very annoyed when they have to compete with peoples' conversations and noise makes it hard to understand what a lecturer is saying. Keep your conversations short and as quiet as possible. If you have a question, ask the instructor, not the person sitting next to you.

Homework is usually assigned and collected weekly. Your instructor or TA will tell you when it is due. Most often, sample solutions are provided to the assignments; you should go over them and see what you missed and be certain that you understand it. If you can't figure it out yourself, ask your instructor, not online. Don't wait until the week of the exam--ask your questions while they are fresh in your mind.

A lot of people find it helpful to work with others on the homeworks. Aside from being a way to make new friends, it is an excellent way to learn. If you get stuck on a problem, chances are that one of your study-mates will know how to do it. So collaboration is encouraged with the understanding that you should write up the problems in your own words. When you get stuck, don't read someone else's solution; the answer in the back of the book may seem like a great shortcut, but there are no solutions to look at when you're taking a test. Someone else later, you will have to do things yourself.

Some instructors differ in their policies regarding late homeworks. You should find out at the beginning of the course what is expected of you. Make every attempt to get your assignments in on time; instructors or TAs notice when people constantly turn their homeworks in late.

Keeping up with the assignments prevents you from falling behind the instructors. Don't undermine the dangers of procrastination! Falling behind in one course can eventually undermine an entire term. Save yourself the misery of cramming and all-nighters and keep up with your work.

Your instructor will post office hours at the beginning of the course. Take advantage of them to ask questions that are too long for class time. Most instructors spend hours sitting in their offices, wondering why no one comes to see them, they are usually impressed when someone does. You will have questions, and bringing them to office hours not only gets them answered, but helps your instructor get to know you.

Occasionally, students have gripes about the way the course is being run. Maybe your instructor talks too quickly, perhaps your TA is always late to class. When possible, take your complaints about lecture to your TA and your complaints about recitation to your recitation. Try to be fair; try to suggest ways to correct the problem, and by all means don't waste the instructor's time! Constructive feedback is often much appreciated results. Feedback is often much appreciated.

Instructors are people too—they have days when they feel lousy, just like you do. They often get nervous when speaking to a class, just as you would. Most of them would love to know how they're coming across. Tell them. But don't forget to tell them what they're doing right—that way they'll keep doing it.

5 Exams

Most elementary mathematics courses have three prelims and a final. They are scheduled in advance to reduce conflicts, the dates and times appearing in the course catalog. Preliminary exams are normally scheduled at least a week before the test; you should find out when you are supposed to go and make certain you know how to get there. Your instructors will announce the times and places during class.

Exams are an integral part of the course. They are a way to assess the knowledge and skills you have acquired during the semester. Exams are an important part of the course, and they are designed to test your understanding of the material covered in class. Exams are an important tool for assessing the effectiveness of the course. They are an important part of the course, and they are designed to test your understanding of the material covered in class. Exams are an important tool for assessing the effectiveness of the course. They are an important part of the course, and they are designed to test your understanding of the material covered in class. Exams are an important tool for assessing the effectiveness of the course. They are an important part of the course, and they are designed to test your understanding of the material covered in class. Exams are an important tool for assessing the effectiveness of the course. They are an important part of the course, and they are designed to test your understanding of the material covered in class. Exams are an important tool for assessing the effectiveness of the course. They are an important part of the course, and they are designed to test your understanding of the material covered in class.

Unfortunately, it is hard to come up with a workable alternative. It is true that testing creates pressure and fosters an orientation toward grades, both of which are incompatible with the ideal of going to college to learn. However, testing does test a certain amount of fairness and objectivity in the evaluation process. As such, you are partially protected from the effects of prejudice or poor personal characteristic. In addition, exams do get you to keep up and learn the material.

What attitude, then, should you take toward exams? To begin with, while not treating them lightly, you should put them in the proper perspective. Blowing an exam is not the end of the world. You can still look at them in a positive, constructive way. When you get an exam back, begin by congratulating yourself on what you were able to do right. Look at the things you weren't able to do. Review the exam solutions and make a note of the things you missed. At the next opportunity, review them if you are confused. Talk with your instructor. In other words, use the exam both as a proof of the progress you're making and as an indication of the things that require more work. Don't be discouraged if you didn't do as well as you'd like to have done. If you've come your best and made a decent attempt to learn the material, that is all anyone can expect.

The first thing you need to know is to prepare for an exam in the material to be covered. Ask your instructor and TA in advance. Don't be sneaky. Try to get an understanding of the overall attitude of the exam. You can't hope to do well in the exam if you don't know what to expect. If you get stuck on a problem, chances are that one of your study-mates will know how to do it. So collaboration is encouraged with the understanding that you should write up the problems in your own words. When you get stuck, don't read someone else's solution; the answer in the back of the book may seem like a great shortcut, but there are no solutions to look at when you're taking a test. Someone else later, you will have to do things yourself.

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better to ask your instructor about it than to let your head against the wall for an hour.

Try to avoid self-imposed pressure. Pressure can cause you to forget what you've learned; it can lead to careless errors and omissions on exams. This is another reason for beginning your preparation well in advance. Pulling an all-nighter before the exam is not only inefficient from the point of view of learning the material, but also physically and mentally disadvantageous. Even if what you've studied is still there during the exam, and even if you manage to stay awake, you will probably end up reviewing everything the next time you need to use it.

If you have a time conflict that would prevent you from taking an exam at the scheduled time, you should inform your instructor well in advance and find out whether your instructor will take a make-up. If so, you should make a note of the time and the place. It is also helpful to remind your instructor of the make-up a day or two before you have to take it—people can be forgetful. Note: Since preterm times are listed in the catalog, you will not get a make-up without a very good excuse.

Only a very serious emergency should cause you to skip an exam without informing your instructor. If you do, you should try to inform your instructor as soon as possible. If you are unable to do it, get a friend to do it for you. You may have to make up the exam later, if so, arrange a place and time promptly. If you skip an exam without offering any excuse, or without contacting your instructor within a reasonable amount of time, do not expect any breaks.

After the exam, check the problems you missed and be sure you understand what went wrong. If you had trouble budgeting your time, make a note to pay attention to the next time. Check to see that your points were added up correctly—mathematicians can have problems with arithmetic! If you feel that you have not received as many points as you deserve, you may submit it for grading. Warning: If you submit your exam for a grade, make no additional marks on it; doing so is considered de facto evidence of cheating. Make any explanations or comments on a separate sheet of paper.

6 Studying

This section is not intended to be a comprehensive guide to study techniques; we will focus on problems and methods specific to math courses. Books and pamphlets on the subject may be obtained in libraries and bookstores; your instructor may be able to make suggestions. It is suggested that you work with friends on the homework, and collaboration is not a bad idea in general. Be sure, however, that you are really getting something done and not just socializing. Since different people learn in different ways, you should adjust your study techniques to fit your personality. If you feel better studying by yourself, that's fine too. Whatever works for you is probably the best thing.

Use your textbook wisely, not slavishly. No textbook will work well for everyone, and you should not be discouraged if there are parts which you have trouble understanding. When you are reading, make a reasonable effort to understand what the book is saying. When you get stuck, make a note of the problem and go on. Take your problems to your instructor. It is frustrating and useless to spend hours crawling through the book line by line, attempting to understand something the first time through. Don't create problems for yourself! Your instructor is there to answer questions. If you feel you're not getting something, do your best to understand the problem. You will make a lot of progress in math courses if you take the time to understand the material.

There are three ideas which summarize a lot of what we have said here:

1) Learning does require discipline and hard work, but...
2) ... there are lots of people who are eager to help you, and...
3) ... you can make decisions which will have a large effect on whether you learn or not.

If you keep these in mind, you should be in good shape. Good luck!