

How to Succeed in a College Math Class

Do any of these statements describe you?

- I don't really know how to study for a math class.
- I spend a lot of time working and studying my math, but I never feel like I understand it.
- I don't have enough time to do all of the homework assigned or study like I should.

I don't really know how to study for a math class.

- Math is not a spectator sport. If you wanted to learn how to play the guitar, and you came to class 3 times a week and watched your teacher play the guitar the whole time, would that make you a good guitar player? Does the coach of the basketball team prepare his team by taking them to *watch* at lot of basketball games? To learn math, you have to DO math.
- College math classes require more than just memorizing formulas. There may be some formulas to memorize, but it will be more important that you learn how to USE the formulas. Formulas and solution techniques apply to many problems which only differ by the numbers in the problems.

I spend a lot of time working and studying my math, but I never feel like I understand it.

- You must remember that math is cumulative. You can't study math as separate, unrelated sections. You should try to figure out how new sections are related to sections already studied.
- If you spend a lot of time trying to find the *answers* to the problems by using Chegg, Wolfram Alpha, or clicking on the Help Me Solve this Button on MyMathLab, you will know the answer to the problem, but you will not understand how to work it. Typically students who get A's on all their homework assignments but fail their tests have not practiced working homework problems on their own – without any help.

I don't have enough time to do all of the homework assigned or study like I should.

- Most students really need to work to pass a math class, and often they need to work harder at math classes than they do with their other classes. If you don't have time to spend 6-8 hours a week *outside* of class studying and practicing problems, then it will be very hard to pass the class. The Student Success Center can help you with your time management. Most of the time, students who think they don't have enough time to do homework DO have enough time. They just need to be better managers of their time.
- Try to become a master of small increments of time. If you have an hour between classes, try to spend 30 minutes reviewing notes or working the first few homework problems. You don't have to wait until you have an uninterrupted 3 hours in your schedule before tackling your homework.
- Watching the teacher solve problems in class makes the material seem easier than it actually is. Stephen Curry makes shooting free throws look easy, but unless you practice it yourself, you won't develop the skills you need.

General Tips for Succeeding in Mathematics

Go to class. Students who skip class are much more likely to fail.

Get to class on time. Often the teacher will begin class with a summary of where you left off last time. This is also a time the teacher might remind students of upcoming assignments.

LISTEN during class. Try to anticipate what the teacher will say next.

Speak up. Never think that you are asking a stupid question. If you are confused, you have a right to ask for clarification.

Listen when others ask questions. When other students ask questions make sure you listen to both the question and the answer.

Take notes. Don't try to write down everything the teacher writes on the board. The definitions and formulas are in the book. Just try to write down the examples and their solutions.

Review notes after class. If you don't understand all the steps done in class, go over them later. And if you still can't figure out how the problem works ...

Visit your professor during office hours. This lets your teacher know that you are trying to be successful. We WANT students to come by and ask questions and you are NOT bothering us. We have office hours FOR our students.

Do homework after each class. Before the next class, find some time to look over the homework from that day's lecture and try to work the problems. When runners train for a marathon, they don't just take a long run one day a week. They run consistently, usually every day.

Do homework without notes or book. Once you've read over the notes and practiced some of the problems, try working some problems without looking at your notes or flipping back to the examples in your book. This simulates the test environment and helps you see how well you understand the material on your own.

Look over graded homework and test papers. Make sure you understand why you missed any points, and how to do the problems correctly. Since math is cumulative, you are likely to need these concepts in the future.

Have a positive attitude. Even if you aren't a math major, you can still be successful in a math class. Don't just do the minimum possible to get by. Try to understand what you are doing, even if it means practicing extra problems. It will pay off on the tests.

Ask for help. Students often do not take advantage of the resources available to them (for free!) You can form study groups with other students, visit your professor during office hours, make an appointment with the student success center, or visit the drop-in math tutoring lab in the SST basement. Don't wait until you are totally lost. Ask for help ANYTIME there is something you don't understand.

Homework Tips

Getting started – Do you ever take a look at the first problem and think “I have no idea how to start?”

- Make sure that you understand all of the words in the directions to the problem.
- Look for similar problems done in the examples in the text or done in class. Usually the first few problems in the text are similar to the examples. Even if your teacher didn't assign some of the easier problems, you may need to work through them to be ready to work some of the more difficult ones.
- Write down what you know about the problem (given information as well as formulas that might be needed)
- Write down what you are being asked to find.
- Draw a picture or diagram, if relevant.
- See if you can do any intermediate steps.
- Once you have an answer, see if it “makes sense”.
- Look for identifying characteristics that will help you recognize this kind of problem in the future.

If you are stuck – Go see your teacher or visit the tutoring lab for instant help. If it is after hours, see if you can find the solution in the solutions manual or online. Don't just copy the answer that you find. Make sure you understand what is going on.

Be neat and organize your work – Not only will this help the instructor as he/she is grading the assignment, but later when you are studying for the test, you will be able to follow your own steps.

Show all work – Do not just give the answer. Most instructors will not give full credit on a problem where only the answer is written. The point of grading homework is to give feedback to the students on their thought processes and problem solving skills.

Check your work – Always go back over your work and make sure that you've not made any simple arithmetic/sign errors.

How to Prepare for Tests

Keep up with the material. If you stay caught up on homework daily, you won't fall behind in understanding the material.

Rework homework problems/quizzes. Don't just look over old homework. That is like watching a video of yourself playing guitar to prepare for your concert. That is not as helpful as actually practicing playing the songs.

Learn to recognize the problem type. Sometimes when you look at homework problems from the book, if you know that section 2.4 is on "the quadratic formula" or "the chain rule" you already have in your mind how to work the problem. But when you see the problem out of context, you aren't sure what kind of problem it is. Make sure you know some identifying characteristics of the problems so you will know what kind of problem it is.

Read the directions. Make sure you are familiar with the directions in the textbook. Sometimes students will say they aren't sure what to do on a test problem because they don't understand the directions. Learn before the test what the directions mean.

Take a practice exam. Literally write down some potential test questions and "practice" taking the test. Do not look at your books or notes during this time, and also time yourself so that you can do the practice test in the time you will be allotted for the real test. Think of it like someone who is preparing for a part in a play. After a certain point in rehearsals, actors are expected to go "off script". You don't think the first time they practice without the script is the night of the performance, do you? So you should practice working problems without the book before the test.

Get a good night's sleep and eat something! You need to be in good physical condition so that your brain will function properly.

When you get to the test:

- Get to class on time. It is stressful to rush in at the last minute.
- If you are used to studying with headphones, ask your teacher (before hand) if you can wear them during the test.
- Relax! If you have prepared for the test by practicing, then you WILL do well.
- Start by looking for problems you know how to do.
- Anything you don't know how to do, skip it and come back to it. Do not allow yourself to worry about what you don't know how to do right away.
- Never spend more time than is allotted per problem. If the test has 15 problems and your class is an hour long, then you should not spend more than 4 minutes on any one problem until you have worked all the problems that you know how to do. Do not spend 15 minutes on a 5 point problem.
- Once you have worked all the problems you know how to do, revisit those you skipped.
- Don't leave any question blank. If you have no idea how to work the problem, at least write down definitions or formulas associated with the problem or draw a picture. Sometimes just getting started will jog your memory.
- Never turn in your test early without making sure you have checked all your work.
- If time, reread the directions on each problem and make sure you answered the question that was asked and that your answer makes sense. For example, if you are asked to find the volume of a solid, your answer cannot be a negative number.
- Make sure you have shown your work on every problem.