



# Ventura College

## Department of Mathematics

### How to Succeed at Math—No, You Don't Have to Be a Genius

A lot of students tell math teachers that “Math is my worst subject!” It doesn't have to be that way. There are skills that you can learn that can make math easier.

First, some things that you need to hear and **believe** if this is your first college math class. The pace of a class at Ventura College is twice that of an equivalent high school class. Why? Because of two things:

- (1) the class will be completed in one semester instead of a year, and
- (2) your teacher is **required** to complete the course outline in that amount of time. Asking your instructor to cover one topic more slowly means that another topic must be covered more quickly.

Success is possible, but you need to know the secrets of learning math. The most important thing to know about math is that learning math requires the same skills as learning to play an instrument or a sport. Math is a series of skills that need practice to perfect. Math “whizzes” got that way by spending a lot of their time doing problems. Even “good” students practice a lot. Here are some examples from VC's science faculty:

*Ms. Freixas*, “Before each exam, I would redo my homework at least three times while trying to get faster each time.”

*Ms. Kobayashi*, “Before each (calculus) exam, I would do 1000 problems.”

*Mr. Quint*, “Don't worry, this isn't a new problem. 2500 years ago a math teacher told Alexander the Great there is no royal road to mathematics. Everyone has to do their homework.”

**But I've never been good at math.** Many students think that if they don't have the *math gene* they can't do well, but it doesn't require a special gene. What is needed is a lot of practice time. What your instructor means by this is a **minimum** of two hours outside of class for every hour in class if you find your math class fairly easy. It will require **more** than that if you are having any trouble. It also means doing all your homework. Yes, that means every single problem your teacher has assigned even if homework is not graded and “doesn't count.” If you think that you don't have time to do your homework, ask yourself if you have the time to take the class over. If you have too many classes with too much homework for you to complete, you have taken on more classes than you can handle. Reducing your load will improve your likelihood of success. It's not how many classes you take that counts, it's how many classes you successfully complete!

A Ventura College student recently had a conversation with his teacher that went like this:

*Student*, “This test was really easy!”

*Teacher*, “Oh?”

*Student*, “Yeah, I did all my homework this time.”

When you do your homework, it is a good idea to check your answers with the answers in the back of your book if they are available. However, it is **not** a good idea to do every problem with the solutions guide's help or with the the help of the answers in the back if they are step-by-step instead of just the final result. Why? When the test comes, and it will, you won't have answers or hints available. If that is the only way you have practiced, you won't do well.

**I need a lot of help with math.** This is not a problem because there is a lot of help available. First, most teachers allow question time in class, but a lot of students don't use this opportunity to find out what they don't know. They think everyone else understands everything, and that they will appear dumb by asking. But how do you feel when someone else asks a question? Aren't you glad that they asked what you were thinking? Take advantage of the question time! Still too shy? If your teacher has office hours, find out when they are and ask your questions there. Trust me, he or she is sitting there waiting for you to come.

**What else can help?** Math textbooks are different than textbooks in other courses. They are read differently. You can't skim a math book, because every word matters. Read the examples carefully because they can help you do the problems when you are first practicing. Taking good notes (especially of the teacher's examples) is also very important.

Attendance makes a difference. It will take you about three days to get caught up for every day you miss class. If you must be absent, call the teacher or a classmate for the homework. You will still have some catching up to do, but it won't be as hard.

Some books have tutorial software, and your teachers try to make sure that it's included with your book. Many of these programs are available online. If you don't have a computer, the Learning Resources Center computer lab (at the Beach) has those programs available for you to use for free.

Study groups made up of students in the your class really help. These groups improve the performance of each student in the group regardless of what level they are at when they begin. Why? If you ask the group a question, you get an answer, and if you explain an answer, that improves your understanding. If several of your study buddies can give an answer, maybe one will be right for you, and if you can explain something in several ways, you have really learned it!

Tutoring is available for free here at Ventura College. You can go to the Math Center (located in SCI-223) or the LRC or both. Most of the tutoring is group tutoring so if you already have a group, take them along. You may need to make an appointment. Call 648-8926 for information.

Tutoring, study groups, and tutorial software can't take the place of practicing problems on paper. You use them in addition to your practice time, not instead of it. Here's a rule: If a tutor or study buddy is trying to help you, make sure that the pencil or pen is in **your** hand. If the other person is doing the writing on your homework, **you** aren't practicing enough.

Studying for a test: If you have done enough practicing by the time the teacher announces the test, you should be able to solve problems in the material to be tested without looking at the book or your notes. (If you can't do a lot of them this way, it means that you needed more practice time while doing homework. From that point on, increase your practice time by two.) Create your own practice tests. The tutorial software or your study buddies can help you. Try to set things up so that you recreate the conditions that will be in the classroom when the real test comes. Set the kitchen timer so that you know that you don't have unlimited time! If you get a lower score than you aimed for, talk to your teacher.

**Math is not a spectator sport.** The difference between A students and C students is not innate math ability, it's the willingness to practice, practice, practice!