Math Study Skills

Most material from:

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Have you experienced any of these?

- My teacher goes so fast I can’t keep up in class.
- When my teacher works a problem on the board, it makes sense; but when I try the homework, I don’t know where to start.
- I do all of the homework, but I still don’t do well on the tests.
- The tests don’t even look like anything I’ve ever seen before!
How do you do your homework?

• I look at the problems. If I don’t see how to do them right away, I skip them.
• I work a problem and check the answer in the back of the book. If it’s wrong, I get frustrated and can’t do any more problems.
• I look at how the teacher worked similar problems in class and try to do the same steps.

How do you study for a test?

• I spend a week before the test reviewing a different topic each night.
• I set aside a block of time, like 5 hours, to study just before the test.
• I just look through my notes and homework the night before the test.
• I don’t study because I’ve done my homework every night.
Studying for Math & Science is Different

• Requires a good understanding of the fundamentals
• Builds on knowledge of previous concepts and skills
• Requires practice even when the fundamental concepts are understood

Learning Styles

• Find out how you learn
  – writing, talking, walking around, doing diagrams.
• People have different learning styles
  – what works for one of you will not always work for another
• Learning Styles Inventory
  http://www2.ncsu.edu/unity/lockers/users/f/felder/public/ILSdir/ilsweb.html
Spending Time Studying

• College Rule of Thumb: 2 hours of studying for every hour in class
• In actuality: You should take as much time as you need to understand and work the problems
• Avoid going over and over work you already know
  – focus on what you don't know

Preparing for Class - “Preview”

• “Preview” to get a general idea of what the lecture will cover
  – not to fully understand the material
• Should not be a very time-consuming process
Preparing for Class - “Preview”

• Look at the section that will be covered in class
• Read the headings, subheadings, boxed information, and examples
• Identify any unfamiliar words, phrases, or symbols
• Notice any steps that you don’t understand
• Find potential questions to ask in class

During Class

• Write down the instructor’s explanatory remarks about a problem
  – Note how one gets from one step of the problem to another
  – Note any particular conditions of the problem
  – Note why the approach to the problem is taken
• Note any concepts, rules, techniques, problems that the instructor emphasizes.
Doing Homework

- Write out complete solutions, including writing down any formulas needed
- If your answer is not right, rework the entire problem
- Learn how to check your answer
- If you can't do an problem in 10 - 15 minutes, go on to another one.
  - get help on the problems you found difficult

Studying Everyday

- Do homework when it is assigned
- Remember that working problems is the best practice for tests
- Get questions you have answered as soon as possible
  - don't wait until you are preparing for the test
Getting Help

- Remember that help is available through your instructor, friends, and tutors
- Ask specific questions:
  - Example: I don’t understand why
  - Example: This is how I tried to do #5. Can you show me what I’m doing wrong?
- As soon as you get help with a problem, try to work a similar problem on your own.

Getting Help from Tutors

- Do not become dependent on a tutor
- Do not let your tutor actually work a problem for you
- Ask your tutor to watch you work a problem and give you hints as you need them
Studying for a Test

• Begin studying several days before a test
• Don’t try to do all of your studying in one block of time. Break it up over several days.
• Get plenty of rest the night before the test
• Form a study group

Studying for a Test

• Review each section in the book and in your notes
  – highlight definitions, formulas, and theorems
  – reread explanations of concepts that are fuzzy to you
• Rework example problems in the book and in your notes
  – write down problem
  – cover up solution and work problem
  – compare your solution with the given solution
Taking a Test

• Look over the entire test to get a sense of how long it is
• Start with the problems you know you can do (the “easy” ones)
  – don't assume test problems are in easy > hard order
• Work as quickly as you can (while maintaining legibility)
• Show as many steps as possible

Taking a Test

• Don't erase -- just put an X through the work you don't want graded
• Don’t give up on a multiple-part question, even if you can’t get the first part.
• Attempt the other parts
• If you absolutely need results from the first part, at least explain how you would solve the problem.
Taking a Test

• Before turning in your test, make sure that you have answered all parts to a question
• Check your answers against the question to see if they make sense
• If you have time, check all of your work by reworking everything

Assignment for Thursday, 9/9

• Take the Learning Styles Inventory on the web
• Develop a plan for studying that will work for you
  – times, locations, methods, etc.
  – include all of the courses that you are taking this semester, except GES 100
  – keep a copy of the plan, we will re-visit later