

Transitioning to University Math

Justin Gray
Dept of Mathematics
SFU

Tips for Success in First-Year Math

- How to study mathematics
- How to approach problem solving
- How to study for and take tests
- When and how to get help

Active Study vs. Passive Study

- Take responsibility for your learning
- Attend class
- Be an active participant in class
- Ask questions in class
- Ask questions outside of class
- Good study habits throughout the semester make it easier to study for tests

Studying Math is Different from Studying Other Subjects

- Math is learned by doing problems
- Keep up
- Identifying and learning the key concepts means you don't have to memorize much

University Math is Different from High School Math

- The pace of university math classes is faster
- Tests cover more material
- You need to budget more time to study outside of class
- Problems are more challenging

Problem Solving

- **Problem types:**
 1. Problems testing memorization
 2. Problems testing skills
 3. Problems requiring application of skills to familiar situations
 4. Problems requiring application of skills to unfamiliar situations
 5. Problems requiring that you extend the skills or theory you know before applying them to an unfamiliar situation
- **In university math classes, problems are not restricted to types 1, 2, and 3**
- **The practice you get doing homework and reviewing will make test problems easier to tackle**
- **Polya's stages of problem solving:**
 1. Understand the problem
 2. Devise a plan
 3. Carry out the plan
 4. Look back

Studying for a Math Test

- Everyday study is a big part of test preparation
- Do homework when it is assigned
- Practice solving problems is essential
- Ask questions as they arise
- Ask for hints when you are stuck, but ultimately you need to practice solving problems independently since this is what you will be tested on
- Review each section, review your notes, and check that you can still do the homework problems
- Use the worked examples in the text and notes – hide solutions and do them yourself
- Discuss material with others in your study group
- Work problems from review sections at the end of chapters and work old tests if you can find some
- When working on practice problems, write out complete solutions
- Start studying early
- Get enough sleep the night before the test

Taking a Math Test

- First look over the entire test
- Do problems in the order that suits you
- If you get stuck on a problem, come back to it later
- Demonstrate what you know by making your solutions easy to follow, justifying the steps where needed - practice at writing out complete solutions to homework problems will help you to get more credit for your solutions to test problems
- Do not give up on a multi-part question if you cannot do the first part
- Read the questions carefully and do all parts of each problem
- Verify your answers
- If you finish early, check your solutions

Getting Help

- Get help as soon as you need it
- Ask questions in class
- Visit your instructor's office hours
- Ask others in your study group
- Go to the drop-in help centre
- Do not be afraid to ask questions
- Learn how to ask good questions
- You control the help that you get