



SASS

MATH 121 – Exam Study Strategies

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EXAM FORMAT

- 10 multiple choice and ~8 long/short answer calculations
- Not all questions are worth the same amount of marks but will be ~10 marks each
- Multiple choice worth 2 marks each
- Short/long answers may include: related rates, optimizations, families of functions, calculating derivatives, making and interpreting formulas, graphs and transformations, graphing functions, linear approximation, tutorial based question (based on previous years' exams)

$$\frac{\sin(\text{gerine})}{\cos(\text{gerine})} = \tan(\text{gerine})$$

HOW TO STUDY

- Make sure you **understand the concepts from 1st semester** because the material from 2nd semester builds on them
- Practice as many questions as possible. Use questions from class, homework, Exam Bank, etc.
- Focus on the basics (e.g. derivatives, integrals) and memorize key formulae – use the list on onQ – so that you can apply them to any question given
- Look back at questions from class. Identify recurring question types and be able to describe general steps for each type
- Practice showing all your work, focusing on showing process rather than always getting the correct final answer (you may receive part marks for part answers)
- Go through previous exams under exam conditions (no notes, answers, time restrictions, etc.). Review your answers and find your strengths and weaknesses. Focus further practice on the latter

STUDY & EXAM STRATEGIES

Quantitative Problem Solving

- Engage: know what you're trying to solve
- Define: the stated problem
- Explore: find links between this problem and previous ones
- Plan: what variables do you have, what do you need, what can you use to get what you need
- Do it: complete calculations, follow your plan
- Look back: see if your plan worked, double-check your work, and note down topics that are tricky to seek further help

EXAM-WRITING TIPS

- Plan out your time when writing the exam
- Do the questions you know first to build confidence, and budget your time so that you finish with time to review at the end
- Focus on showing you understand processes and are thinking logically, even if you know your final answer is incorrect
- Reserve time at the end of the exam to look over your work
- Breathe – there's usually plenty of time in the exam to pause and take stock!

Multiple Choice Questions: 3 Pass Method

- Pass 1: Answer all the questions you know. Code with a "?" the ones you're not sure about. Code with an "X" the ones you don't have any idea about. Move on to questions you feel more comfortable with!
- Pass 2: Return to the questions marked with a "?"
- Pass 3: Check how much time is left and return to the questions marked with an "X". Try to make educated guesses

COMMON MISTAKES

- Going through past exams and feeling confident as answers are given, but not understanding *how* you get to an answer
- Time management in the exam: when you begin, plan where you'll be by 25%, 50%, 75% of the way through the time.
- Memorizing solutions to individual problems. Instead, look for common themes and applying what you already know to new problems
- Basic mistakes in computations/equations and so it's important to check over your work. It isn't penalized as long as you show your work and the grader can follow what you're doing

RESOURCES

- Professor and TA office hours
- ASUS Peer Tutoring
- Math Help Centre: Jeffrey 201, Mon-Fri 10:30-4:30
- SASS one-on-one learning strategies appointments
- SASS: exam schedules, study drop-ins, workshops, online resources

RESOURCES FOR STUDYING

- **Practice problems** are important as they give you a sense of what the exam will be like, check if you're ready yet, and point you to areas you need to study more
- **Review test** questions and solutions
- **Tutorial examples** and practice questions (for main campus)
- Don't just look at the weekly WebWork but try and go through homework questions and longer problem sets
- **Past exams** may be available on Exam Bank and OnQ. Check to see if the prof is the same as in old exams

Why shouldn't you let advanced math intimidate you?



It's really as easy as pi!

PLANS FOR NEXT YEAR

- What did you learn so far this semester and how can you use that knowledge to look forward to next year?
- Ability to solve **quantitative problems** (understanding problems, critical thinking)
- Need to know basics as following years' courses will be more application-based
- Ability to read questions and understand what is being asked – this often means applying knowledge learned in one context to a new context. If you can do that easily, you're ready for this exam and for next year!

SHOWED WORK



GOT THE RIGHT ANSWER.