

Review Sheet for Math 108 Exam I

A) Hour Exam I is scheduled for Tuesday, February 17, 8-9:20am, in Small 113. Come later if you want, but the exam still ends at 9:20. Taking the exam at any other time requires a university activity excuse or a medical note from a doctor or from the health center. See the course syllabus.

B) **Office hours** on Monday (2/16) will be 9-10:50am. There will be **no Math 108 class on Monday, February 16**. Instead there will be a **review session** from 4:30-5:30 pm in Small 113 on February 16.

C) You may use calculators on the exam for arithmetic, but I will expect you to do the kind of algebra on the first-day algebra review sheet by hand. In addition, you may not use calculators on problems that say ask you to use derivative rules to find $f'(x)$. You will not need to decimalize your answers – an answer like $16\sqrt{2}$ is OK. But if you do decide to decimalize, you must give five correct decimal places.

D) At least 90% of Exam I will be based on the following problems. To study for the exam, work these types of problems over and over.

- 1) Use the rules for derivatives to find the derivative of a list of functions.
- 2) Use secant slopes and limits to find $f'(x)$ for a given $f(x)$ (See handout.)
- 3) Find the equation of the tangent line to a given curve at a given point.
- 4) Use calculus methods to determine where a given function is increasing/decreasing, concave up/down, has relative max/min, has inflection points.
- 5) Given the graph of $f'(x)$ discuss geometric properties of the graph of $f(x)$ (see p 160, #25-35).
- 6) Algebra review problems (see first day handout).
- 7) Optimization problems (e.g., p180, #11,13,17,19).
- 8) Find equations of lines (e.g., p68, #11, 51).
- 9) Position, velocity, acceleration application (p134, #11).