

## Review Sheet for Math 108 Exam II

A) Hour Exam II is scheduled for Tuesday, March 24, 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) There will be a review session on Monday (March 23) in class.

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 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 all of our rules for derivatives to find the derivative of a list of functions, including polynomial, root, exponential, and logarithmic.
- 2) Find the equation of lines – both tangent lines to a given curve at a given point and lines through two given points.
- 3) Use calculus methods to determine where a given function is increasing/decreasing, concave up/down, has relative max/min, has inflection points, e.g., p223 #55; p229 #47; p264 #39; and p268 #27.
- 4) Given the graph of  $f'(x)$  discuss geometric properties of the graph of  $f(x)$  (see p160, #25-35).
- 5) Use calculus methods to study business applications and inventory control, e.g., p197 #7 and p207, #11 and 13.
- 6) Population growth and decay, e.g., p285 #9,11,17, and 25.
- 7) Continuous interest and present value, e.g., p292 #13,19,21,23.
- 8) Demand elasticity, e.g., p302 #19 and 21.
- 9) Antiderivatives, e.g., p325 # 17,19,41,45.