

## **REVIEW FOR FINAL EXAMINATION OF CALCULUS I:**

- the final will take about 2 hours to complete. It is comprehensive, including the topic of L'Hopital's Rule. This final will focus on the basics.
- 95% of the final exam will concern topics on previous tests. The problems will be similar but probably not identical.
- You can count on there being one question that asks you to calculate the derivative from the definition. This will mean you need to memorize and/or understand the definition of the limit and also demonstrate a proficiency in calculating limits through the algebraic steps we discussed at length in the beginning quarter of this course.
- There will be a question of the form "find the linearization of a function". So you should memorize and/or understand what the linearization of a function is. Also, there will be a question of the form "find the tangent line to the curve  $y = f(x)$ ". So you should memorize and/or understand what the tangent line of a function is.
- Things NOT on the final,
  - a) Problem 2 of Test 1 (but I may ask Problem 1a again)
  - b) Problem 6 of Test 1
  - c) Problem 8 and 9 of Test 1
  - d) Problem 2 of Test 2
  - e) Problem 8 of Test 2
  - f) Bonus from Test 3
  - g) Problem 5 of Test 4
  - h) No optimization or related rates problems. There is not enough time.
  - i) Cylindrical shells
  - j) Pyramid-type volume problem (I'll focus on solids of revolution on final)
- Rough estimation of format for final:
  - a) 5pts, L'Hopital's Rule
  - b) 5pts, Definition of derivative, limit calculation.
  - c) 5pts, find linearization and tangent line to  $y=f(x)$  at a point.
  - d) 10pts graphing with calculus
  - e) 10pts finding area bounded by curves.
  - f) 10pts finding volume of solid of revolution.
  - g) 30pts differentiation.
  - h) 30pts integration.
- I plan to post a few more old tests soon, but this is just because one of you asked for them. I believe the tests and homeworks from this semester have more than enough diversity to cover the ideas. We will have two review days after break, see you there.