MATH 1634, Review for Hour Exam 3

- The exam will be on the materials covered in Sections 3.9 (Related Rates), 3.10 (Differential) and 4.1–4.5.

- The necessary formulae regarding Related Rates are the ones that appear in the examples covered in class, in homework questions, or something very basic (such as the circumference of a circle or the volume of a box). **Make sure you know all those formulae. No excuse that you didn’t know the necessary formulae to solve a problem in related rates.**

1. Find the differentials $dx, dy, du \ldots$ in $y = f(x), u = g(x)$, etc. §3.10; Refer to Quiz 7 #2,#3.

2. Related rates §3.9: The questions will be asked (a),(b),..., (f) as done in class. Refer to Quiz 6, and the copy of OLD (Fall 2016) Hour Exam 2 #5.

3. Finding the critical points §4.1

4. Mean Value Theorem §4.2

5. Computing limits using l’Hospital’s Rule. Always check the condition to apply L’Hospital’s Rule. §4.4

6. Find the local maxima or minima of $f(x)$ using Second Derivative Test. Show your work CLEARLY as we did in class. Give your answer in Cartesian coordinates. §4.3

7. Sketching curves. §4.3, 4.5. See #1–#6 (a)–(e), and #7–#12 (a)–(f) in the Worksheet.

**Remind you of our class policy for the missing exam:**

- *Remember the policy in case you fall sick: You must write me an email BEFORE the exam – no excuse! If you fail to do so, there will be penalty.*

- *If you are late for the exam, I interpret that you do so at your own risk. There won’t be any way to make up your lost time.*