Study Guide for Final

Calculus I, MTH 231, Spring 2019
Instructor: Abhijit Champanerkar

- Final Exam will be held on **Thursday May 16th from 2:30-4:30 in 1S-102** .

- Final Exam is cumulative. Syllabus : Chapters 1, 2, 3, 4 & Sections 5.1 - 5.5, 5.7.

IMPORTANT TIPS: Study from Sample Problems for Exams 1,2 and 3, Webworks, and their solutions.

Chapter 3

1. Practice limits and continuity.

2. Review and practice piecewise defined functions.

Chapter 3

1. Practice derivatives of x^n, $\sqrt{x}$, $\dfrac{1}{x}$, $\dfrac{1}{\sqrt{x}}$, $\dfrac{1}{x^2}$, $\dfrac{1}{x^3}$, etc.

2. Review and practice Product, Quotient, Chain Rule for differentiation.

3. Review and practice Implicit differentiation.

4. Review and practice how to write **equations of tangents** to curves.

5. Review and practice related rates.

Chapter 4

1. Review and practice First, Second derivative Tests, Increasing, decreasing and Concavity Tests.

2. Review and practice curve sketching using transition points

3. Use handout:
   www.math.csi.cuny.edu/abhijit/231/resources/derivative-tests.pdf

4. Review and practice L'Hospital's Rule, Optimization, Linearization.

Chapter 5

1. Review Riemann Sums.

2. Practice the integrals of x^n, $\sqrt{x}$, $\dfrac{1}{x}$, $\dfrac{1}{\sqrt{x}}$, $\dfrac{1}{x^2}$, $\dfrac{1}{x^3}$, etc.

3. Review and practice FTC1, FTC2.

4. Review and practice Indefinite Integrals and Substitution Rule.