MATH 1550 - Calculus I - Section 1
Summer 2013

Exam 2 Review

Our exam covers Chapters 4 and 5. Any sections not listed below will not be included. Practice working with this material until you know it like the back of your hand. Work together, make up problems for each other to do, and explain ideas and solutions to one another. Be careful about distinguishing between scenarios that require differentiation and those that require integration (and those that require both!). There are lots of recurring themes throughout Chapter 4 on applications of the derivative, but make sure you understand the differences—how is finding points of inflection different from classifying critical points, and how is that different from optimizing a function on a closed interval? Learn the statements of both parts of the Fundamental Theorem of Calculus, which are given below. Both will appear on the exam.

Section 4.1: 29, 35, 43, 49, 51, 53, 61, 69, 71

Section 4.3: 9, 11, 15, 17, 39, 41

Section 4.4: 7, 13, 17, 25, 29, 31, 33, 45

Section 4.7: 13, 15, 17, 19, 33, 40, 49

Section 4.9: 1, 7, 9, 13, 17, 31, 33, 39, 59

Section 5.2: 33, 41, 47, 48

Fundamental Theorem of Calculus, Part I: Let $f(x)$ be a continuous function on $[a, b]$ and let $A(x) = \int_a^x f(t)\, dt$. Then $A'(x) = \dfrac{d}{dx} \int_a^x f(t)\, dt = f(x)$.

Fundamental Theorem of Calculus, Part II: Let $f(x)$ be a continuous function on $[a, b]$ and let $F(x)$ be any antiderivative of $f(x)$ on $[a, b]$. Then $\int_a^b f(x)\, dx = F(b) - F(a)$.

Section 5.3: 7, 11, 13, 17, 19, 23, 29, 31, 39, 57

Section 5.4: 5, 15, 21, 27, 33, 37, 59, 61, 69

Section 5.5: 3, 7, 9, 21, 23, 25, 29, 55, 59, 67, 69