

Exam II Study Aid

Exam II : Sections 3.3-4.1
Monday, June 23rd

Our second in-class exam will cover all of the material we have discussed since our first exam. The format will be similar to that of our first exam. You will have the entire class period to complete the exam (you may leave once you are finished). Again, while you have the entire class, I strongly encourage you to try to not use the entire class. The exam will be written to take you 50-60 minutes so you should aim to finish in this time-frame (the Final Exam will be about twice the length of a normal exam and you will still only have 2 hours and 20 minutes to complete it, so you should start practicing good time management now!)

Below is a list of the main concepts or definitions you should definitely know and be comfortable with. (Note: this list is not a comprehensive list of all the topics we have learned in Sections 3.3 through 4.1, it is simply a list of some of the most important topics. Hence, as a warning, there may be topics on the exam which are not listed below – i.e. don't simply study this list and nothing else!)

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| 1. Product Rule | 10. Mean Value Theorem |
| 2. Quotient Rule | 11. Increasing Function Theorem |
| 3. Chain Rule | 12. Constant Function Theorem |
| 4. Derivatives of Trig. Functions | 13. The Racetrack Principle |
| 5. Derivatives of $\ln x$ and a^x | 14. Critical Points |
| 6. Derivative of Inverse Trig. Functions | 15. Local Extrema |
| 7. Implicit Differentiation | 16. Inflection Points |
| 8. Hyperbolic Functions and Their Derivatives | |
| 9. Local Linearization | |

Finally, here is a list of good practice problems that might help you in studying. All of the problems were picked to be odd numbered so that their solutions would be found in the back of the book. Also, be sure you understand how to correctly solve all of the problems from Written Homework #4!

- Section 3.3 – 3, 5, 9, 11, 19, 27, 29, 31, 33, 35, 39, 45, 51
- Section 3.4 – 1, 5, 11, 13, 21, 29, 31, 49, 55, 57, 63, 73, 77
- Section 3.5 – 3, 5, 11, 17, 23, 27, 39, 43, 49
- Section 3.6 – 3, 5, 15, 21, 23, 31, 33, 41, 47
- Section 3.7 – 1, 3, 7, 13, 15, 17, 23, 27, 29, 31
- Section 3.8 – 1, 3, 5, 7, 9, 11, 17
- Section 3.9 – 1, 3, 5, 11, 13, 17
- Section 3.10 – 3, 5, 7, 9, 11, 15
- Section 4.1 – 1, 5, 7, 9, 13, 17, 19, 21, 25, 27, 29, 39, 43