

Exam III Study Aid

Exam III : Sections 4.2-4.7 (excluding 4.5)
Monday, November 18th (In Class)

Our third in-class exam will cover all of the material we have discussed since our second exam. The format will be similar to that of our other in-class exams. You will have the entire class period (50 minutes) to complete the exam (you may leave once you are finished).

Please note that this exam will both a modeling/optimization (Sec. 4.3) and a related rates (Sec. 4.6) problem. I have found that students generally spend too much time struggling with these problems and then run out of time to complete the remainder of the exam. Keep in mind that if you find yourself spending too much time on one of the above problems, skip it, complete the rest of the exam, and then go back and complete the problem in your remaining time.

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 4.2 through 4.7, 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. Global Extrema
(on closed/open/mixed intervals) | 4. Related Rates |
| 2. Mathematical Modeling
(Section 4.3) | 5. l'Hôpital's Rule |
| 3. Families of Functions | 6. Dominating Functions |

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.

- Section 4.2 – 1, 5, 7, 15, 17, 27, 35
- Section 4.3 – 3, 5, 9, 19, 21
- Section 4.4 – 5, 11, 13, 21, 33, 39, 41, 59, 63
- Section 4.6 – 1, 7, 9, 11, 13, 17, 19, 27, 45
- Section 4.7 – 1, 3, 5, 7, 9, 13, 15, 17, 21, 25, 27, 29

In addition to these problems, the online Homework from Sections 4.3 and 4.6 as well as Written Homework #5 would be good to review.