Exam III Study Aid

Exam III : Sections 4.2-4.7 (excluding 4.5)
Monday, June 30th (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 to complete the exam (you may leave once you are finished). Once again, I strongly urge you to not use the entire class period to complete the exam. The exam is written to take 50-60 minutes, if you find you cannot finish in this amount of time I seriously suggest going back and reviewing the material. The final exam will be written to take about 120 minutes and you will have a maximum of 140 minutes to complete it – you do not have the luxury of $2\times$ or $2.5\times$ the expected length of the exam to complete it (as many people have been taking for the in-class exams)!

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!)

1. Global Extrema (on closed/open/mixed intervals)
2. Mathematical Modeling (Section 4.3)
3. Families of Functions
4. Related Rates
5. l'Hôpital's Rule
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.