Final Examination - Math 141, Frank Thorne (thornef@mailbox.sc.edu)

Thursday, December 13, 2012

There will be sixteen questions. Everything from homeworks 2-13 is fair game, but as you can see below some topics will get more attention than others.

(1) There will be two **theoretical** questions, chosen at random from the following: HW4 (c), HW6 (i), (j), HW8 (a), (b), HW10 (a), (b), (l), HW11 (e). They will not both be chosen from the same midterm exam.

(2) There will be at least one question asking you to interpret a graph, chosen at random from the following: Ch. 2.7, 11, 12, 17; Ch. 2.8, 5-8, 41-43; Ch. 4.9, 49-52; 5.3, 4; Chapter 5 Review, 7.

(3) Two questions will ask you to compute derivatives, where you will not be required to reason directly from the definition. These will be chosen randomly from the problems in Chapter 3.1-3.6 and the Chapter Review from Homeworks 4-7. Some of these problems don't directly ask you to compute a derivative, and in that case I will choose a different problem.

(4) Two questions will ask you to compute integrals. These will be chosen randomly from the problems in Chapters 4.9-5.5 on Homeworks 9-11 which ask you to compute integrals. Some of these problems don't directly ask you to compute an integral, and in that case I will choose a different problem.

(5) One question will ask you to graph a function using information about the derivatives. This will be chosen randomly from the Chapter 4.5 problems, or (f)-(j), appearing on Homework 8.

(6) An optimization question will appear. This will be chosen at random from Homework 9 (excluding (f)).

(7) A question from Chapters 3.7-3.9 on Homeworks 6-7, chosen at random.

(8) An area or volume question, from Chapters 6.1-6.2 on Homeworks 12 and 13, chosen at random.

In addition, questions will be picked from five of the categories (chosen randomly) below:

1. A question from Homework 2, chosen at random.

2. A question from Homework 3, chosen at random.

3. A question from Homework 4, not falling into one of the categories above, chosen at random.

4. A question from Homework 5, not falling into one of the categories above, or (a)-(d) on Homework 6, chosen at random.

5. A further question from Chapters 3.7-3.9, chosen at random from the two sections not covered by the first question.

6. A second graphing question will be chosen from the list above. If the first was chosen from Chapter 2, the second will be chosen from Chapters 4-5, and vice versa.

7. A question from (b)-(e) or Chapter 4.1 on Homework 7, chosen at random.

8. A question from Chapter 4.3, excluding 63-65, on Homework 8, chosen at random.

9. A question from (b)-(k) or 5.3, 7-8, on Homework 10, or (b)-(d) on Homework 11, or questions from 5.5 on Homework 12, not asking you to directly compute an integral, chosen at random.

10. A further applied-type problem, selected at random from: Ch. 2.7, 13, 14, 44-47; Ch. 3.3, 35; Ch. 4.3, 63-65.