Digest 12

(A compilation of emailed homework questions, answered around Tuesday.)

Question. (From a student): What are the final exam procedures?

Answer. The procedures are going to be different than before.

The final exam occurs in THH 202, Wednesday, December 5, 2PM-4PM.

Scientific calculators are allowed. Graphing calculators are NOT allowed.

You can bring a single piece of 8.5 inch by 11 inch paper with anything written on both sides of it. (Sometimes people call such a paper a "cheat sheet.")

As usual your cell phones must be off and out of sight.

As before, bathroom usage is prohibited, so please plan accordingly.

Question. [Repeated and updated from last time] (From a student): What is on the final?

Answer. Lagrange Multipliers are on the final exam.

ON THE EXAM:

- Sections 4.1-4.4: Maxima, minima, and optimization problems for functions of one variable. Derivative tests for one variable, increasing/decreasing test, etc. Graph sketching for functions of one variable.
- Chapter 5: Riemann sums, definitions and interpretations of the definite integral. Average values.
- Chapter 6: Computation of integrals. Integration by using the antiderivative directly, integration by substitution, integration by parts. Some applications from Sections 6.4 and 6.5 could be on the final, but you don't need to memorize the formulas from 6.4, these are just nice motivating examples for computing integrals in the first place. You do not have to memorize the present/future value formulas.
- Sections 8.1-8.4: Contour plots. How to draw and interpret them. Partial derivatives, both estimated from a table/contour plot and computed from a function's formula. Approximating the values of a function using derivatives (i.e. linear approximation). (We did a lot of direct computation of partial derivatives in class and on quizzes, and approximating derivatives should have been covered on the online homeworks.)
- Sections 8.5-8.6: Critical points for functions of two variables. Maxima/minima for functions $f(x, y)$ of two variables, and classification of critical points via the Hessian/Second Derivative Test. Lagrange Multipliers.

- Double Integrals: Computing some double integrals directly. Changing the order of integration. Finding the limits of integration from a picture or from a description of the domain. Setting up the integral for integrating in x first, or integrating in y first. Average values (for functions of two variables).

STUFF I RECOMMEND TO REVIEW THAT WAS NOT MENTIONED ABOVE:

- Chain Rule, Quotient Rule, Product Rule. (This stuff is still relevant for computing partial derivatives, so it's good to review.)
- Linear approximation for functions of one variable. (The two variable version is a generalization of this formula, so it might help to remember the easier one-variable formula to then remember the two-variable version.)

NOT ON THE FINAL EXAM:

- Limits. (Though I guess it's possible to get a question about limits in disguise, e.g.: what happens to some function when x gets really big?)
- Vectors and Gradients. (Some 118 sections did not cover this, so it won't be on the final. However, it could still help you to read and interpret contour plots, to have a simpler formula for linear approximation in two variables, and for solving Lagrange Multiplier problems, assuming that is on the final. In each of these cases, note that you can avoid talking about the gradient, but avoiding the gradient makes things less natural to understand what is going on, in my opinion.)
- Three-dimensional drawing. This might help you to do other problems or visualize what is going on, but you will not be directly graded on your ability to make a three-dimensional drawing. However, you could be expected to draw a contour plot, as on our second midterm.
- Triple Integrals. (Probably no 118 section covered this.)

Question. (From a student): I cannot enter the comma in wileyplus for a pair of points (x, y). Also I feel like I entered the points correctly but it is giving me a wrong answer.

Answer. To use a comma in wileyplus, click the tab that is on the top but third from the left. The tab itself looks like some boxes with commas. After you do that, click the box furthest to the right (below the top row).

Also, if the question says to enter points in increasing order of x-values, make sure you do that.

Question. (From a student): What are the Scheme 1, Scheme 2, etc. listed in the blackboard grade center? Can I know my approximate standing in the class from these numbers?

Answer. Scheme 1 and Scheme 2 are described in the syllabus. The column labelled Raw Score is the maximum of Scheme 1 and Scheme 2. At the moment, since we haven't taken the final yet, the displayed percentage for each Scheme assumes you have a 0 grade on the final. If you want an approximate estimate of your standing in the class compared to other

people in your section, you should be able to view statistics of Scheme 1, Scheme 2 and Raw Score in the grade center.

The median grade in this course will be around a B-, but it could be higher if you all do better than the other 118 students on the final.

Question. (From a student): When will we know our curved grades?

Answer. As of 4PM on 12/6/2018, your course grades have been submitted (outside of blackboard). So, the course grades should be available through my.usc or OASIS something like that. The letter grades are finalized. The curving has already taken place.

Update: 9PM. I thought the grades would be in OASIS but I guess they haven't been updated yet. So I just put them manually into blackboard, where they should now be visible.