Math 1210-001
Tuesday Apr 26
WEB L110

• Webwork or lab question clarifications?
• Finish Monday's notes on on mass/moments/centers of mass for 2-dimensional lamina.

• I'll be in our Wednesday classroom WEB L112 tomorrow Wednesday between 9:00 AM-11:00 AM if you want to work together on your Webwork and lab assignment. I'll also hold a review session this upcoming Saturday in MLIB 1170, 3:00-5:00 PM.   (And Dapeng will be there 4:00-5:30 PM on Sunday.) One possibility is that I'll work through my previous final exam from 2008, in addition to answering questions. That exam is on my web page from back then,
http://www.math.utah.edu/~korevaar/1210spring08/1210exams.html

 There are also a lot of review materials at the bottom of Kelly MacArthur's Math 1210 page from this semester:
http://www.math.utah.edu/~macarthu/spring16/math1210.html

Here's a schedule of review sessions/office hours - you're welcome at any of them:

Math1210
Spring, 2016
Final Reviews and/or Final Office Hours

All students are welcome to attend any and/or all of the following reviews and/or office hours.

Extra (Outside of regular class or lab) Final Reviews

Day	Date	Instructor/TA	Time	Location
Wednesday	04/27/16	Kelly MacArthur	8:30-10:30 am	JWB335
Thursday	04/28/16	Liz Fedak	12:00-2:00 pm	LCB219
Saturday	04/30/16	Nick Korevaar	3:00-5:00 pm	MLIB 1170
Sunday	05/01/16	Dapeng Mu	4-5:30 pm	MLIB 1170

Extended Office Hours

Day	Date	Instructor/TA	Time	Location
Wednesday	04/27/16	Kelly MacArthur	11:30am – 12:30 pm	JWB226
Wednesday	04/27/16	Sung Chan Choi	5:00-7:00 pm	LCB126
Friday	04/29/16	Pinches Dirnfeld	12:00-2:00 pm	JWB331
Friday	04/29/16	Weicong Su	3:00-5:00 pm	JWB121

Final exam review:

- Final exam will address concepts, computations, applications.
- The exam will be held in our MWF classroom WEB L112, Monday May 2 8:00 AM-10:00 AM. If you want extra time you may arrive as early as 7:00 AM to begin.
- You may bring a single index card as large 5 by 8 inches. (I'll have some in class today to distribute.) You can put whatever formulas or facts you want onto this card and use it during the exam.
- You may use a scientific calculuator (only).
- I'll provide the geometry formulas that were included in the midterm exams.
- The exam is comprehensive, with the material since the last midterm (4.5, 5.1-5.4, 5.6) weighted somewhat more heavily.

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Key concepts

  Limits
  Derivative

    average and instantaneous rate of change
    precise limit definition

$$f'(x) = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$$

    graphical interpretation as slope of tangent line to graph of f
    physics interpretations as rates of change (with units important)
  Definite integral
    precise limit definition

$$\int_a^b f(x)\, dx = \lim_{\max(\Delta x_i) \to 0} \sum_{i=1}^n f(\underline{x}_i)\Delta x_i$$

  FTC which relates these two fundamental concepts:

$$D_x \int_a^x f(t)\, dt = f(x)$$

$$\int_a^b f(x)\, dx = F(b) - F(a) \quad \text{if } F'=f \text{ on } [a, b].$$

Quick computations

  limits (know limit theorems, ways to deal with $\frac{0}{0}$, also limits involving infinity).

  differentiation (know differentiation rules!)
  antidifferentiation (rules!)
  definite integrals
  derivatives of integral expressions
  u-substitution in definite and indefinite integrals

Applications Not all of these fit on one exam! I will need to make choices. Make sure to learn the Chapter 5 material because up to 40% of the final exam questions could relate to these applications.

position, velocity, acceleration
implicit differentiation
related rates
max-min problems
graphing (INC,DEC,CU,CD, asymptotes, extrema)
differential equations
Newton's method
average values
signed area
areas of regions in the plane
volumes
        planar slabs (disks and washers)
        cylindrical shells
curve length
surface area of revolution
mass, moments, centers of mass