Math 1432

Bekki George
bekki@math.uh.edu
639 PGH

Office Hours:

Mondays 1-2pm,
Fridays noon-1pm
(also available by appointment)

Class webpage:

http://www.math.uh.edu/~bekki/Math1432.html

Popper07

7.7 – a few more notes

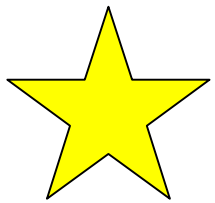
Proper Limit Notation:

Important examples:

$$\int_1^{\infty} \frac{dx}{x^p} \qquad p = 1$$

$$\int_1^{\infty} \frac{dx}{x^p} \qquad p > 1$$

$$\int_1^\infty \frac{dx}{x^p} \qquad 0 < p < 1$$



$$\int_1^\infty \frac{dx}{x^p}$$

Diverges for $p \leq 1$
Converges for $p > 1$

Test 2 Review:

- Exam covers sections 7.1-7.7
- Review sheet is posted on class webpage and is due for lab quiz grade this week (a completion grade).
- Must sign up on CASA under proctored exams. You should get a confirmation email (if you didn't, you may not have registered correctly). Don't be late!!!
- No calculators.
- No formulas given and you cannot bring any notes/formulas to the exam.
- You should be working on review in recitation this week.
- Practice test is bonus (5%).

What have we covered in chapter 7?

7.1 – Integration Review

You need to know ALL integration formulas from calculus 1 (see chart from day 01).

You need to know how to use u-substitution correctly.

LOOK OVER 7.1 EXERCISES – BE ABLE TO WORK ALL OF THESE.

I will take questions from 7.1 in class.

7.2 – Average Value

Fact: Given a continuous function f defined on an interval $[a,b]$, the average value of the function on this interval is given by:

$$f_{avg} = \frac{1}{b-a}\int_a^b f(x)dx. \qquad (7.2.1)$$

Be able to work out problems like review and any problem from text.

7.3 – Area

$$A = \int_a^b [f(x) - g(x)]\,dx$$

$$A = \int_c^d [h(y) - k(y)]\,dy$$

Be able to graph, set up and solve any area problems.

#3 from review sheet: Find the area of the region (c) between $f(x) = \sqrt{x}$ and $g(x) = \frac{x}{a}$

7.4 – Volume

Cross Sections

Of Revolution

Disc/Washer

Shell

R is the region bounded by the given graphs and the given axis. Sketch each graph then find the area of R, the volume when R is revolved about the x-axis and the volume when R is revolved about the y-axis

$y=5-x^2$ and $y=4x$

Give formula for volume of solid when cross sections perpendicular to the x-axis are semicircles.

7.5 – Arc Length, Centroids and Surface Area

(*you don't need to memorize surface area formula*)

Arc Length – know this formula

10. a. Give the formula for the arc length: $f(x)=\frac{2}{3}(x-1)^{3/2}, \quad x\in[1,2]$

Centroids – know formula and Pappus Thm

$y = 8, y = 4x, x = 1$

7.6 – Differential Equations and Exponential Growth/Decay

Be able to solve a separable differential equation.

11. Find the general solution for:

(e) $y' = e^{2x}(1+y^2)$

Exp Growth/Decay:

The half-life of radium-226 is 1620 years. How long will it take for the original amount to be reduced by 70%?

7.7 – Improper Integrals

Be able to identify an improper integral and write in proper limit notation.

Email questions for Wednesday's notes before Tuesday at 4pm

Wednesday we will review a bit more then start section 8.1!!