Exam II Review

Tue Nov 18 11:11:44 PST 2008 Version 1

Please know the following for the exam Thursday, Nov 20.

1. Definitions
   a. Definition of integral of a bounded function on page 73.
   b. Definition of limit in terms of δ-ϵ on page 129.
   c. Definition of continuity in terms of limits on page 130.
   d. Definition of continuity in terms of δ-ϵ on page 131.
   e. Definition of derivative in terms of limits on page 160.
2. Know how to show the following results:
   a. That $1/x$, $\sqrt{x}$, x^2 and $1/\sqrt{x}$ are continuous at some specified point p.
   b. The limit laws in Theorem 3.1 on page 132.
   c. The continuity of composision in Theorem 3.5 on page 141.
   d. The calculus rules in Theorem 4.5 on page 164.
   e. The chain rule in Theorem 4.2 on page 175.
   f. If a function is differentiable then it is continuous.
   g. If f is continuous on $\mathbf{R}$ and $A(x) = \int_0^x f(t)dt$ then $A'(x) = f(x)$.
3. Know how to find integrals using integral formula.
   a. Those in Exercises 2.8 # 18–27 on page 105.
   b. Those in Exercises 2.19 # 1-16 on page 124.
   c. Average value and area of the radial set.
4. Know how to find limits using limit laws
   a. Those in Exercises 3.6 # 1–20 on page 138.
   b. Those in Exercises 3.8 # 11–20 on page 142.
   c. Memorize that $\lim_{x\to 0} \dfrac{\sin x}{x} = 1$.
5. Know how to find derivatives using calculus rules
   a. Those in Exercise 4.6 # 1–12, 16–23, 26–35 on page 167.
   b. Those in Exercise 4.12 # 1–15 on page 179.