Preparation Guide for Quiz 04

May 08, 2011

- 1. Understand the meaning of a partition and the norm of a partition.
- 2. (Important) Be able to express a definite integral as the limit of Riemann sums.
- 3. (More important) Be able to express the limit of a Riemann sum as a definite integral and hence evaluate the limit by performing the integration.
- 4. (Even more important) The statement and applications of 'Fundamental Theorems of Calculus' Part 1 and 2. Memorize them!
- 5. Know how to take derivatives with respect to the upper and lower limits of integration? (page 304)
- 6. Understand the meaning of indefinite integrals.
- 7. Know how to solve Initial Value Problems y' = f(x), y'' = f(x) using definite or indefinite integrals.
- 8. Know how to use the chain rule in integration. Make up a few examples of integration in the form of $\int f(g(x))g'(x)dx$ and the counter part of definite integrals. Pay attention on substituting back x = a and x = b. A common mistake is putting u = a and u = bat the final stage. See also page 1,2 of the lecture note on Chap 5, section 6.
- 9. Know how to evaluate the derivative of an inverse function. Pay extra attention on the point of evaluation.