Math 5B List of Prerequisite Topics
Summer Session B, 2011

This list is NOT exhaustive and might have additions as the course progresses. If you find yourself using prerequisite material that is not on this list, please send me an email and I will add it on for the others. As you begin the class, make sure you have a thorough knowledge of the following topics:

**Trigonometry and Algebra**
- Quadratic Formula
- Unit Circle (radians and degrees)
- Trig formulas (Pythagorean Identities, inverses, double angle formulas, even-odd identities. Other sum-difference identities might be required on homework.)
- Volume/area formulas

**Math 3A, Derivative Calculus** You should be very good at derivation.
- calculating limits
- definition of derivative
- interpreting the “derivative” in word problems as rate of change
- derivative rules (trig, chain rule, product, and quotient rules)
- related rates

**Math 3B, Integral Calculus** You should be very good at integration.
- antiderivatives, definition and Fundamental Theorem of Calculus
- geometric properties of integrals (area under the curve and volume calculation)
- integration by parts
- partial fractions
- u-substitution
- using trig identities to
- improper integrals
- arc length (possibly need to know)

**Math 3C and 5A, Differential Equations**
- linear algebra (vector spaces, vectors, direction fields, systems of differential equations)
- Did I say linear algebra?
- It should not surprise you that since we are now working with several variables, we need to be good with vector spaces and linear algebra.
- possibly more detail to come