

MAT 266
Introduction to Higher Math
Course Outline

I. Methods of Proof

- a. direct
- b. contrapositive
- c. contradiction
- d. exhaustion
- e. induction

II. Sets

- a. Equality, union, intersection, complement, DeMorgan's Laws, infima and suprema, boundedness, connectedness, measure.
- b. Well-ordering principle, completeness axiom.

III. Functions

One-to-one, onto, inverses, continuity.

V. Sequences

Monotone, bounded, convergent and Cauchy sequences, sequences of functions.

VI. Differentiation

Definition, nondifferentiability at a point, theoretical applications.

VII. Integration

Definition, theoretical applications