

FST Midterm Topics

I. Logic

- (a) Induction
- (b) Deduction
- (c) Counter examples
- (d) Truth Tables

- $\vee$, $\wedge$, $\neg$
↓ ↓ ↓
or and not

P	q	$P \wedge \neg q$
T	T	F
T	F	T
F	T	F
F	F	F

(e) Patterns

II. Sets

- a. Symbols - $\in$, $\subseteq$, $\subset$
- b. Venn Diagrams
- c. Roster Notation
- d. Subset vs Proper subset.

III. Probability + Counting

- A. FCP
- B. Permutations
- C. Combinations
- D. Probability Rules
 - Addition, Multiplication, Conditional.

- Trees
- Expected Value

IV. Linear Programming

- Define variables
- Write Constraints Inequalities
- Write Objective Equation
- Graph + Find Corner points
- Solve
- Analyze.

V. Polynomials

a. Add/Subtract

b. Multiply

- Distribution

- Binomial Expansion or Pascal's.

c. Divide

- Long and Synthetic

d. Compositions

e. Factoring + Solving

- U -substitution.