Mathematics

Discrete Math 4/17/2008

Approach to Problem Solving	Logic and Set Theory Sets	Numeration and Mathematical Systems	Non-Euclidean Geometry, Topology and Networks
1. Demonstrate the use of inductive and deductive reasoning.	2. Use Venn Diagrams and basic set concepts to solve problems. 3. Evaluate cardinality of sets. 4. Use truth tables and Euler diagrams to analyze arguments.	5. Convert between number bases. 6. Analyze and define modular and other finite mathematical systems.	7. Explore non-Euclidean geometric figures. 8. Analyze topological systems. 9. Simplify networks and use to solve problems.

Data Analysis and Probability Counting Methods	Proofs	Matrices and Their Applications
10. Use methods of counting: systematic listing, fundamental counting principle, permutations and combinations to solve problems. 11. Explore and use probability. 12. Graph frequency distributions. 13. Analyze and calculate measures of central tendency, measures of dispersion, and measures of position. 14. Use regression lines and correlation coefficient to analyze a statistical survey.	15. Recognize and use proof by cases, direct proof, and proof by contradiction.	16. Solve real world problems using Game Theory. 17. Review basic concepts of matrices and operations using matrices.