

Math 1HH3

1.0 Eigenvalues and Eigenvectors	Basic familiarity with eigenvalues and eigenvectors, basis and dimension; Topics 1.0 and 2.0 in 1H03	Properties, geometric and algebraic multiplicity, diagonalization, orthogonal diagonalization
2.0 General Linear Transformations	Basic knowledge of functions, composition, inverse, range, matrices, change of basis, eigenvalues and eigenvectors	Properties, composition, kernel and range, composition, inverse, matrices of linear transformations, similarity
3.0 Complex Numbers	Basic trigonometry	Basic operations, modulus, conjugate, polar form, DeMoivre's formula, nth roots
4.0 Naive Set Theory		Knowledge of elementary set operations, subsets, complements, set algebra
5.0 Logic		Truth tables, logical equivalences, predicates and quantifiers
6.0 Counting		Tree diagrams, permutations, combinations, binomial theorem, permutations with repetition, combinations with repetition, permutations of sets with indistinguishable objects
7.0 Probability		Basic axioms of probability, conditional probability, independence, law of total probability, Bayes' rule, discrete random variables, expected value, variance, binomial distribution.