

THE UNIVERSITY OF SYDNEY  
MATH2069/2969 DISCRETE MATHEMATICS AND GRAPH THEORY

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Semester 1	<b>Discrete Maths Second Quiz Announcement</b>	2006
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**Time:** 2.15 – 2.50 p.m. Tuesday 11 April 2006

**Place:** Carslaw 175 Lecture Theatre (normal room for lecture)

**Information:**

- (1) Wait (quietly) outside the lecture theatre until called inside.
- (2) No books, materials or calculators are permitted.
- (3) Short answers and a small amount of working will be required.
- (4) The quiz reviews the material from pages 2.12 to 2.52, pages 3.1 to 3.40, and pages 4.1 to 4.42 of the lecture notes, and material on determinants and binary search in the tutorial sheets. In particular you should review the following words and concepts:

exponential growth, polynomial growth, logarithmic growth, Bubblesort with  $O(N^2)$  running time, divide and conquer algorithms, Mergesort with  $O(N \log N)$  running time, Binarysearch with  $O(\log N)$  running time, Graham Scan with  $O(N)$  running time, orientation of a triangle in the plane, determinant of a  $3 \times 3$  matrix, test for orientation using determinant, sorting points in the plane by polar angle, division and remainders, greatest common divisors, Euclidean Algorithm, greatest common divisors as integer linear combinations, arithmetic and inverses in  $\mathbb{Z}_n$