

March 10, 2008

Enrichment Session - Today 2:30-4:30

Office hours: Tuesday 11-12 MSC

### Problem 4.49

Let  $A_1, A_2, \dots$  be a sequence of sets, each of which is countable. Prove that the union of all the sets in the sequence is a countable set.

### Midpoints between integer points

Given 5 integer points in the plane, show that the midpoint of the segment joining some pair of them is also an integer point (an **integer point** is one with integer coordinates).