Model Theory, Spring 2001
Problem Set 1: due Jan. 23

Marker: 5.5 problems 1-7; we will discuss which ones should be turned in. I think 2 and 3 were done last semester.

1. (Ramsey) Let G be a group which can be written as a union of n cosets $X = \{H_i a_i : i < n\}$ but not the union of any proper subset of X. Then the intersection of the H_i has index at most n! in G and in particular each H_i has finite index.

2. (Erdos-Rado) Let G be a group which can be written as a union of λ cosets, $X = \{H_i a_i : i < \lambda\}$ but not the union of any proper subset of X. Show the index of H_0 in G is at most 2^λ.