21-301 Combinatorics
Homework 11
Due: Wednesday, December 6

1. How many ways are there to k-color an $n \times n$ chessboard when n is odd. The group G is the usual 8 element group e, a, b, c, p, q, r, s.
2. How many ways are there to arrange 2 M's, 4 A's, 5 T's and 6 H's under the condition that any arrangement and its inverse are to be considered the same.
3. How many ways are there of k-coloring the squares of the cross below if the group acting is e_0, e_1, e_2, e_3 where e_j is rotation by $2\pi j/4$. Assume that instead of 13 squares there are $4n + 1$.