Math 192r, Problem Set #13
(due 11/8/01)

1. (a) How many lattice paths from $(0,0)$ to $(m,n)$ remain the same when you rotate them by 180 degrees about $(\frac{m}{2}, \frac{n}{2})$? Prove your answer.

2. (a) How many lattice paths from $(0,0)$ to $(n,n)$ remain the same when you flip them across the diagonal joining $(n,0)$ and $(0,n)$? Prove your answer.

(b) What is the sum of the $q$-weights of these lattice paths? Conjecture an answer.

(c) Why is there no part (b) for question 1?