MATH 583, Dr. Z. , **Problem Set #4**, Mon., April 21 , 2003.

Due: May. 5, 2003.

Theory:

1) Apply Viennot's version of Robinson-Schenstead to the permutations 957143862 and 297183465. Compare your answers with the standard way.

2) Take two pairs of Young tableaux of the same shape with 12 cells, with the same P, and apply the inverse of the Robinson-Schenstead to them. Show directly that the two resulting permutations are Knuth equivalent.

3) For the permutations of 1), verify Greene's theorem by exhibiting example of k-increasing and k-decreasing sequences for all appropriate k.

4) Give an example of *jeu de taquin* for a skew-tableaux P of shape λ/μ with $\lambda = 75442$ and $\mu = 322$.