Mathematics 22a Homework Problems 2

The following problems are due on **Monday, October 5**.

1. B & S p. 48, problem 1.9.

2. B & S p. 48, problem 1.7.

3. B & S p. 48, problem 1.11.

4. Show that if a lin. transform. $f : V \to W$ is onto, and S is a set of vectors in V spanning V, then $f(S)$ spans W.

5. (i) Show that if N is a 2x2 matrix with determinant and trace equal to zero, then $N^2 = 0$. (ii) Show that if N is a 2x2 matrix with determinant zero and trace equal to one, then $P^2 = P$. (iii) Show that the image and the kernel of an lt are subspaces.