Math 630-102
Homework #8
Due date: March 29, 2007

Group work on h/w assignments is not allowed. No credit is given for results without a solution or an explanation. Late homework is not accepted.

Section 3.3

Problem 6. Find the projection of *b* onto the column space of A … .Split b into p+q, with p in the column space and q perpendicular to that space. Which of the four subspaces contains q?

Problem 24. Find the best straight-line fit to the following measurements, and sketch your solution: y=-2 at t=-1, y=0 at t=0, y=-3 at t=1, y=-5 at t=2.

Section 4.2

Problem 2. If a 3x3 matrix has det A = -1, find det(A/2), det (-A), det(A^2), det(A^{-1})

Problem 4. By applying row operations to produce an upper triangular U, compute …. Exchange rows 3 and 4 of the second matrix and recomputed the pivots and determinant.

Problem 5. Count row exchanges to compute these determinants: det[…]=+1, det[…]=-1.

Problem 10. If Q is an orthogonal matrix, so that $Q^TQ=I$, prove that det Q equals +1 or -1. What kind of box is formed from the rows (or columns) of Q?