Exercises for Lecture Nineteen: Determinant Formulas and Cofactors

Due Tuesday, October 29, 2013

For problems 1 and 2 from Strang's text, you do not need to use the BIG FORMULA. I recommend using co-factors.

1. Consider the matrix A. Find $\det A$ three ways:

$$A = \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 1 \\ 2 & 0 & 1 \end{pmatrix} \tag{1}$$

   (a) Using a co-factor expansion along the first row.

   (b) Using a co-factor expansion along the second row.

   (c) Using a co-factor expansion along the third column.

2. Chapter 5.2, problem 1

3. Chapter 5.2, problem 2

4. If $\det A = 0$, is A invertible?

5. If A is an $n \times n$ matrix and $\det A \neq 0$, what is $C(A)$? What is $N(A)$?