

Linear Algebra

Exercises for Lecture Two: Elimination with Matrices

Due Friday, September 201, 2013 (?)

1. A warm-up problem. Do this in class, but don't hand it in. Determine the product EA , where

$$E = \begin{pmatrix} 1 & 0 & 0 \\ -3 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \quad (1)$$

and

$$A = \begin{pmatrix} 1 & 1 & 2 \\ 3 & 2 & 1 \\ 1 & -1 & 1 \end{pmatrix} \quad (2)$$

Explain in words what E does to A .

2. Another warm-up problem. Don't hand this one in, either. Consider the matrix P :

$$E = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 0 \end{pmatrix} \quad (3)$$

Evaluate PA , where A is given in Eq. (2). Say in words what P does to A .

3. Chapter 2.2, problem 5
4. Chapter 2.2, problem 13
5. Chapter 2.3, problem 3
6. Chapter 2.3, problem 7
7. Chapter 2.3, problem 25