Linear Algebra
Exercises for Lecture Three: Multiplication and Inverses

Due Tuesday, September 24, 2013

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

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

and

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

Do it four ways:

   (a) The standard way

   (b) The column way

   (c) The row way

   (d) The column×row way

2. Chapter 2.4, problem 1

3. Chapter 2.4, problem 23(a)

4. Chapter 2.5, problem 2

5. Chapter 2.5, problem 7

6. Chapter 2.5, problem 8

7. Chapter 2.5, problem 27

8. Let A and B be square invertible matrices. True or false:

$$(AB)^{-1} = A^{-1}B^{-1} . \tag{3}$$

Explain. If the statement is false, correct it.