

Assignment schedule for Math 214, Fall 2013

The list will be extended, and due dates will be added, as the course proceeds. The comments (in small blue type) are from Prof. Schult — the “I” there is he. My (Lantz’s) comments are in small red type.

Unit 1, due Mon 9 Sep. Don’t forget the Executive Summary on a separate sheet:

1. What idea did you believe was the most important in each part’s assignment?
2. Why do you believe that is the most important idea?
3. What troubles did you have with the assignment, if any?

Part 1a: Vectors and Matrices

- page 8 (section 1.1): # 5 [Use words (complete sentences) to answer the second part.], 16 [Reading #15 first will help.], 30.
- page 19 (section 1.2): # 19, 28.
- page 29 (section 1.3): # 4, 5, 14 [Some versions of text have a typo: Use (b, d) , not (b, c) .].

Part 1b: Systems of Linear Equations

- page 40 (section 2.1): # 5, 7 [Definition: A matrix is *singular* if there are not enough pivots during elimination. This also means that its columns are dependent.], 12 [In some versions of the text, answers in the back for #12 are really for #11.], 19 [The question uses the name E^{-1} for a second matrix. Just treat that as another name like F . It will turn out to be the inverse of E — whatever that means — but we don’t need that notation here.], 33.
- page 51 (section 2.2): # 4, 5, 7, 8, 11, 12, 14, 20 [When creating the third equation make sure it is not parallel to another. Choose the third equation such that the third row of A is not a linear combination of the first two rows. Note that this makes sure no two planes are parallel.], 25.

Unit 2, due Fri 13 Sep.

Part 2a: Systems of Linear Equations

- page 63 (section 2.3): # 3, 5 [The symbol a_{33} means the (3,3)-th entry in the original matrix, and the “third pivot” is the corresponding entry in the matrix after at least one elementary row operation has been done, when we are ready to use a third pivot.], 9, 10, 12, 19 [Which rows are exchanged when P and Q left-multiply a matrix? Thinking about this question may help with finding a row exchange matrix M .], 26.

Part 2b: Rules for Matrix Operations

- page 75 (section 2.4): # 6, 9, 16, 18, 23 [If your answer is not “simple” enough in part a) you may have trouble with b). Use only zeros and ones for a). Then interpret it as a row operation. It is copying zeros. Now try b) using that idea. You will need 3 rows.], 32 34.

Part 2c: Matrix Inverses

- page 89 (section 2.5): # 2, 7 [Definitions: *Invertible* means that a matrix has an inverse. That is, it is not singular. It might be easier to do parts b) and c) before doing part a).], 8.