

Please provide complete and well-written solutions to the following exercises.

Due April 2, in the discussion section.

(This Review Assignment will be collected but not be graded.)

Preliminary Review Assignment

Exercise 1. Read the appendix, pages 605–651 in the book Linear Algebra, by Friedberg, Insel and Spence. If you are unable to do this, instead read the following document by Michael Hutchings: <http://math.berkeley.edu/~hutching/teach/proofs.pdf>

Exercise 2. Take the following quizzes on logic, set theory, and functions. (If you are shaky on this material, it will be reviewed in the discussion section in the first two weeks of class.):

<http://scherk.pbworks.com/w/page/14864234/Quiz%3A%20Logic>

<http://scherk.pbworks.com/w/page/14864241/Quiz%3A%20Sets>

<http://scherk.pbworks.com/w/page/14864227/Quiz%3A%20Functions>

Exercise 3. Prove the following assertion by induction:

For any natural number n , $1^2 + 2^2 + \cdots + n^2 = \frac{1}{6}n(n+1)(2n+1)$.

(This is the only written exercise in this assignment.)

Exercise 4. As needed, watch some videos here to refresh your memory about linear algebra: <http://ocw.mit.edu/courses/mathematics/18-06-linear-algebra-spring-2010/video-lectures/>

Exercise 5. Take the following quizzes to review linear algebra topics, until you convince yourself that you remember each topic. (These quizzes should mostly review 33A material.):

<http://scherk.pbworks.com/w/page/14864232/Quiz%3A%20Linear%20systems>

<http://scherk.pbworks.com/w/page/14864226/Quiz%3A%20Elementary%20matrices>

<http://scherk.pbworks.com/w/page/14864225/Quiz%3A%20Determinants>

<http://scherk.pbworks.com/w/page/14864235/Quiz%3A%20Matrices>

Linear transformations were covered in 33A, but some of the terminology in this quiz might be new. So, if you are feeling daring, try this quiz on linear transformations:

<http://scherk.pbworks.com/w/page/14864233/Quiz%3A%20Linear%20transformations>

If you are feeling daring, try this quiz on vector spaces. We will discuss vector spaces in the first week of class, and they were probably not dealt with in 33A:

<http://scherk.pbworks.com/w/page/14864246/Quiz%3A%20Vector%20spaces>