Part I (due Friday, January 26 at the beginning of class)

Read the first part of Section 2.2: Matrix Multiplication and Linear Combinations, stopping when you get to 2.2.4 Matrix-matrix products . Again, some of this will be review, so focus on the things that are new. Note that if you want to know more about using Sage, a free and open-source mathematics software, you can read the Computation with Sage section in Chapter 1.

Reading Question(s)

1. Preview Activity 2.2.1

Note: you can ask questions about things we've done in class as part of your part (b) for Part I as well as about the reading.

Part II (prepare for Friday, January 26)

Activity 2.2.2

Part III: Homework (due Wednesday, January 31 at the beginning of class)

1. Answer the following questions, including at least one example of an appropriate matrix with your explanation.
   (a) Suppose a linear system having six equations and three unknowns is consistent. Can you guarantee that the solution is unique? Can you guarantee that there are infinitely many solutions?
   (b) Suppose that a linear system having three equations and six unknowns is consistent. Can you guarantee that the solution is unique? Can you guarantee that there are infinitely many solutions?
   (c) Suppose that a linear system is consistent and has a unique solution. What can you guarantee about the pivot positions in the augmented matrix?

Running list of vocabulary words that could be a quiz word

- linear equation
- system of linear equations
- linear combination of a set of vectors
- span of a set of vectors
- linearly independent

- linearly dependent
- reduced row echelon form
- pivot
- homogeneous system
- free variable
- row equivalent
- consistent system
- inconsistent system