

**Part I (due Wednesday, January 24 at the beginning of class)**

Read [Section 2.1: Vectors and Linear Combinations](#). Again, some of this will be review, particularly if you've worked with vectors much before, so focus on the things that are new and pay particular attention to the things that are being emphasized, perhaps in contrast to other contexts in which you've used vectors in the past.

**Reading Question(s)**

1. Activity 2.1.2

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 (due Wednesday, January 24 by the beginning of class)**

No new Part II assignment on this daily work; just make sure you finish your WeBWorK assignment from Daily Work 5 by class time on Wednesday.

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

1. Consider the system of equations described by the following augmented matrix.

$$\begin{bmatrix} 1 & 2 & 3 & 1 \\ 4 & 5 & 6 & 4 \\ a & b & c & 9 \end{bmatrix}.$$

- (a) Find a choice for  $a$ ,  $b$ , and  $c$  that makes the linear system inconsistent. Explain why your choice has this property.
- (b) Find a choice for  $a$ ,  $b$ , and  $c$  that makes the linear system have a unique solution. Explain why your choice has this property.
- (c) Find a choice for  $a$ ,  $b$ , and  $c$  that makes the linear system have infinitely many solutions. Explain why your choice has this property.

**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