Math 219, Linear Algebra — Fall 2015
Course website: http://people.aub.edu.lb/~kmakdisi/
Problem set 1, due Tuesday, February 10 at the beginning of class

Office hours: Will be every Monday from 10–3, with the understanding that I will occasionally be away from the office for up to 15 minutes.

Due to Monday, February 9 being a holiday, I encourage you to stop by on Friday, February 6 for any help you need — I'll again occasionally be away for up to 15 minutes, possibly a bit longer.

Exercises from Corwin-Szczarba:

Section 1.1, exercises 1acf, 3, 4. (Note that the corresponding parts of exericses 3 and 4 are converses to each other.)

Section 2.2, exercises 1, 3ab, 4cgh.

Section 2.3, exercises 2, 4, 3 (in that order), 5, 6, 8c.

Additional Exercises (also required):

Exercise A1.1:

For each of the following lists of vectors $\vec{v}_1, \vec{v}_2, \vec{v}_3$, determine whether $\exists r, s \in \mathbf{R}$ such that $\vec{v}_1 = r\vec{v}_2 + s\vec{v}_3$.

a) $\begin{pmatrix} 1 \\ 2 \end{pmatrix}, \begin{pmatrix} 1 \\ 1 \end{pmatrix}, \begin{pmatrix} 2 \\ 3 \end{pmatrix}$.

b) $\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 \\ 1 \end{pmatrix}, \begin{pmatrix} 2 \\ 3 \end{pmatrix}$.

c) $\begin{pmatrix} 1 \\ 2 \end{pmatrix}, \begin{pmatrix} 1 \\ 1 \end{pmatrix}, \begin{pmatrix} 2 \\ 2 \end{pmatrix}$.

d) $\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 \\ 1 \end{pmatrix}, \begin{pmatrix} 2 \\ 2 \end{pmatrix}$.

e) $\begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}, \begin{pmatrix} 1 \\ 1 \\ 0 \end{pmatrix}, \begin{pmatrix} 2 \\ 3 \\ 1 \end{pmatrix}$.

f) $\begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}, \begin{pmatrix} 1 \\ 1 \\ 0 \end{pmatrix}, \begin{pmatrix} 2 \\ 3 \\ 3 \end{pmatrix}$.

Look at, but do not hand in, the following exercises:

Section 1.1, exercises 2, 5, 6, 8, 9.

Section 1.2, exercises 1, 2, 3, 4.

Section 2.1, exercises 1ablmn, 4, 5.

Section 2.2, exercises 5, 7, 8, 12.