Statistics 630 - Assignment 5

(due Wednesday, October 15, 2014, 11:59 pm)

Instructions:

- The textbook exercises are in the book by Evans and Rosenthal. This assignment covers material on expectations from Chapters 3 discussed in Lectures 13–18.
- Whether you write out the solutions by hand or in a text document, be sure that they are *neat, legible and in order* (even if you choose to solve them in a different order).
- **Type** your name, email address, course number, section number and assignment number at the top of the first page (or cover page).
- Either scan or print your solutions to a **PDF** file under 15MB in size. It must be in a *single* file, not separate files for separate pages. Name the file using your name (for example, I could use twehrly630hw01.pdf) to avoid confusion with other students and/or assignments. *Do not* take a photo of each page and then paste them into a document – this will make your file too big and the results will generally not be very readable anyway.
- Login to your WebAssign account to upload your file. You must do this by **11:59 pm U.S. Central time**, *according to the WebAssign server*, on the due date. We highly recommend that you start the upload at least 15 minutes earlier. You can make multiple submissions, but *only the last submission will be graded*.

Answer the following problems from Chapter 3:

3.1.1ab, 3.1.2abcdf, 3.1.6, 3.1.7

3.2.1ab, 3.2.2abdf, 3.2.5, 3.2.12abcd, 3.2.18, 3.2.22

3.3.2bcd (see 3.1.2), 3.3.3, 3.3.7, 3.3.14, 3.3.21, 3.3.24

3.4.5, 3.4.8cd, 3.4.12, 3.4.16, 3.4.20, 3.4.22

Additional Problem: Let X, Y, and Z be uncorrelated random variables with variances σ_X^2, σ_Y^2, and σ_Z^2, respectively. Let $U = X + Z$ and $V = Y - Z$. Find $\mathrm{Cov}(U, V)$ and ρ_{UV}.