Statistics 630 - Assignment 3

(due Wednesday, September 24, 2014, 11:59 pm)

Instructions:

- The textbook exercises are in the book by Evans and Rosenthal. This assignment covers material from Chapters 2 discussed in Lectures 07–09.
- 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 2:

2.4.2abc, 2.4.4abc, 2.4.6be, 2.4.19, 2.4.22 (Hint: express the integral as the sum of two integrals over the ranges $x < 0$ and $x \geq 0$.)

2.5.3acdfg

2.5.5 (The function pnorm in R can be used.)
2.5.5 (d) Obtain the 35^{th} and 84^{th} percentiles of the distribution of Y (Use the function qnorm in R.)

2.5.7abfgh
2.5.7 (i) Obtain the 40^{th} and 72^{nd} percentiles of the distribution of X.

2.5.8 Change the definition of F_Y to

$$F_Y(y) = \begin{cases} 0 & \text{for } y < 0 \\ y^3 & \text{for } 0 \leq y < 1/2 \\ 1 - (1-y)^3 & \text{for } 1/2 \leq y \leq 1 \\ 1 & \text{for } y > 1. \end{cases}$$

2.5.21

2.5.21 (b) Derive the quantile function for the Weibull(α) distribution.

2.5.24

2.6.1, 2.6.5, 2.6.9, 2.6.12, 2.6.18 (assume $\beta > 0$)