HW 10

STAT 346, Spring 2010

I'll make each homework assignment worth 10 points, so that when I count your best 10 of 13 assignment scores, your overall homework score will be out of 100 points possible. For this assignment, three of the six problems to be turned in will be selected for grading. (Two of the graded problems will be worth 3 points apiece, and the other one will be worth 4 points.)

1) Consider a failure time random variable T having pdf

$$f_T(t) = \frac{2}{t^3} I_{(1,\infty)}(t).$$

Give the hazard function for $t > 1$.

2) Do Exercise 2 on p. 342 of the text. (Clearly indicate your answers for each part, since altogether six different things are requested.)

3) Do Exercise 3 on p. 343 of the text.

4) Consider Exercise 4 on p. 343 of the text and obtain $P(X + Y = 2)$.

5) Consider part (b) of Exercise 11 on p. 344 of the text and obtain $E(Y)$. (*Note*: I obtained the marginal pdf of Y in class.)

6) Consider Exercise 13 on p. 344 of the text and obtain $P(X^2 + Y^2 \leq 1)$.

7) Consider the pdf given in Exercise 13 on p. 357 of the text and obtain the pdf of $V = Y - X$.

8) Consider Exercise 4 on p. 343 of the text and obtain $P(X + Y \leq 2)$.

9) Consider parts (a) and (b) of Exercise 11 on p. 344 of the text and obtain the marginal pdf of X and $E(X)$.

10) Consider Exercise 13 on p. 344 of the text and obtain $P(X - Y \leq 1/2)$.

11) Consider the pdf given in Exercise 11 on p. 344 of the text and obtain the pdf of $V = X/Y$.

Turn in solutions for Problems 1, 2, and 8 through 11, but not 3 through 7.