

HW 7
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) Do Exercise 7 on p. 204 of the text.
- 2) Do Exercise 3 on p. 233 of the text.
- 3) Do Exercise 1 on p. 204 of the text, *except* instead of giving the probability of exactly 4 spades, give the probability of at least 4 spades.
- 4) Do Exercise 15 on p. 219 of the text. (*Hint:* In order for the next earthquake to occur *after* 2 weeks, what must be true about the number of earthquakes during the next 2 weeks? (We can obtain the desired probability by focusing on the probability of what is called an *equivalent event*.)
- 5) Do Problem 12 on p. 239 of the text.
- 6) Do Problem 16 on p. 239 of the text. (Assume that the 5 chips are drawn from the bowl without replacement.)
- 7) Consider a random variable X having cdf

$$F_X(x) = \begin{cases} 1 - 16/x^2, & x > 4, \\ 0, & x \leq 4. \end{cases}$$

- (a) Give the value of $P(X > 8)$.
 - (b) Give the pdf of X .
- 8) Consider a random variable X having pdf

$$f_X(x) = \frac{4}{15}x^3 I_{(1,2)}(x).$$

- (a) Give the cdf of X .
 - (b) Give the value of $P(X > 3/2)$.
 - (c) Give the pdf of $Y = X^2$.
- 9) Do Exercise 12 on p. 252 of the text.
- 10) Do Problem 1 on p. 274 of the text.

Turn in solutions for Problems 3 through 8, but not 1, 2, 9, and 10.