

Math 408, Spring 2008
HW Assignment 10, due Friday, 4/11/2008

Name (print please):

Instructions

- **Use this sheet as cover sheet and staple it to the assignment.** Write your name **legibly** in the space above; if necessary, underline your last name. If your name is not clearly and unambiguously identifiable on the class roster, we cannot credit you for the homework.
- Do the problems in order, and make sure that each problem is clearly labelled.
- Show all work; an answer alone will not earn credit.
- **Due date:** The assignment is due **in class** on Friday. Late homework, or homework dropped off in mailboxes, will not be accepted. You can, however, turn in the homework early, in my office, 241 Illini Hall, any time before the due date.
- **Open House Hours:** The usual hours are Wednesdays and Thursdays at 5 pm in 141 Altgeld. However, this Thursday (4/11) I have to attend a PhD Thesis Defense at 4 pm, which will likely last well over an hour. I'll try to make it to the Open House as soon as I get off the PhD Exam.

Problems (from Hogg/Tanis, 7th edition)

1. 4.3-11
2. 4.3-12
3. 4.3-13
4. 4.3-14 (omit (h),(i))
5. 4.3-15
6. 4.3-16
7. 4.3-17
8. 4.5-12
9. 4.5-14
10. 4.5-19

***** Turn page for instructions and comments *****

Comments on the problems in HW 10

- **4.3-11:** The correct answer is $E(Y) = 0.7$. Disregard the answer in the back of the book.
- **4.3-12:** This refers to an example in the book (and also worked in class on 3/28), but the only thing you need from this example are the formulas for the joint and marginal densities given at the bottom of p. 222: $f(x, y) = 2$ for $0 \leq x \leq y \leq 1$; $f_X(x)(= f_1(x)) = 2(1 - x)$ for $0 \leq x \leq 1$; $f_Y(y)(= f_2(y)) = 2y$ for $0 \leq y \leq 1$. Using these formulas compute μ_X , μ_Y , σ_X , σ_Y , and $E(XY)$, and then plug these values into the appropriate formulas for $\text{Cov}(X, Y)$ and ρ .
- **4.3-14:** Hint for (d) and (f): Distinguish three different x -ranges, $0 \leq x \leq 2$, $2 \leq x \leq 4$, and $4 \leq x \leq 6$, and do the calculations separately for each of these ranges.
- **Problems from 4.5:** All of the assigned problems are problems involving the minimum or maximum of several independent random variables. These are easy with the "minimum (or maximum) trick" illustrated in Monday's (April 7) class.