

STAT 467/667 Homework 1

SPRING 2015

Due in class on Friday January 30.

NOTE: Problems refer to the 4th Edition. If the problem has a different number in the 5th Edition, this is given in parentheses.

1. Chapter 3, No. 3.2.13 (No. 3.2.15 in 5th Ed.)
2. Chapter 3, No. 3.2.23 (No. 3.2.25 in 5th Ed.)
3. Chapter 3, No. 3.3.14 (**Stat 667 only**) - (In 5th Ed., instead of finding $F_Y(y)$, find the median of the income distribution. That is, find the value m such that $F_Y(m) = 0.5$.)
4. Chapter 3, No. 3.4.4 (**Stat 467 only**)
5. Chapter 3, No. 3.4.9
6. Chapter 3, No. 3.5.14
7. Chapter 3, No. 3.5.30 (No. 3.5.31 in 5th Ed.)
8. Chapter 3, No. 3.6.7
9. Suppose that X and Y have a discrete joint distribution for which the joint PDF is as follows:

$$f(x, y) = \begin{cases} \frac{1}{30}(x + y) & \text{for } x = 0, 1, 2 \text{ and } y = 0, 1, 2, 3 \\ 0 & \text{otherwise.} \end{cases}$$

- (a) Determine the marginal PDFs of X and Y .
- (b) Are X and Y independent? Explain your answer.