

STAT/MA 416 Fall 09 Section 002

Homework 6

Due: October 16, 2009, 9:30am

Please show all your work, don't just write down the final number.

- Reading: Chapter 6.1 + Negative binomial handout
 - Exercises: 6.1.3, 6.1.4, 6.1.6, 6.1.13, 6.1.15, 6.1.19, 6.1.20, 6.1.26, 6.1.27, 6.1.30 (the problem should read $P(X = 1) > P(X = 0)$), 6.1.32, 6.1.36
 - Ross
- 4.46 Suppose that it takes at least 9 votes from a 12-member jury to convict a defendant. Suppose that the probability that a juror votes a guilty person innocent is 0.2, whereas the probability that the juror votes an innocent person guilty is 0.1. If each juror acts independently and if 65 percent of the defendants are guilty, find the probability that the jury renders a correct decision. What percentage of defendants is convicted?
- 4.74 An interviewer is given a list of potential people she can interview. If the interviewer needs to interview 5 people and if each person (independently) agrees to be interviewed with probability $\frac{2}{3}$, what is the probability that her list of potential people will enable her to obtain her necessary number of interviews if the list consists of (a) 5 people and (b) 8 people? For part (b) what is the probability that the interviewer will speak to exactly (c) 6 people and (d) 7 people on the list?