

Stat 351 Fall 2007
Assignment #10

This assignment is due at the beginning of class on Wednesday, December 5, 2007. You must submit solutions to all problems. As indicated on the course outline, solutions will be graded for both content and clarity of exposition. The solutions that you submit must be neat and orderly. Do not crowd your work or write in multiple columns. Your assignment must be stapled and problem numbers clearly labelled.

Suppose that the number of calls per hour arriving at an answering service follows a Poisson process with $\lambda = 4$.

- (a) What is the probability that fewer than two calls come in the first hour?
- (b) Suppose that six calls arrive in the first hour. What is the probability that at least two calls will arrive in the second hour?
- (c) The person answering the phones waits until fifteen calls have arrived before going on a break. What is the expected amount of time that the person will wait?
- (d) Suppose that it is known that exactly eight calls arrived in the first two hours. What is the probability that exactly five of them arrived in the first hour?