Mathematics 464 Spring, 2006, Last Homework Assignment

Due May 3.

1. Ch. 8 Exercise 1.
   \textit{Hint on b:} If a is the event no customers arrive during a service period, then
   \[ P(a) = \int_0^\infty P(A \mid S = t) f(t) \, dt \]
   where \( S \) is the service period and \( S \) has probability density function \( f(t) \).

2. Ch. 8 Exercise 4.
   \textit{Hint:} You may want a variation of the argument on pages 486-487.

3. Suppose an M/M/1 queue has arrivals at the rate of 5 per minute and has service times at the rate of 10 per minute. Find \( L, L_Q, W, \) and \( W_Q \).

4. Suppose an M/M/1 queue has arrivals at the rate of 1 per every 100 seconds and service times with the rate of 1 per every 99 seconds. Find \( L, L_Q, W, \) and \( W_Q \).