

Homework Set 3**EECS 401****Due: Friday, Jan. 28, 2000,**
in class before lecture begins.

Reading Assignment: Read Sections 2.4, 2.5, 2.6.

Things to practice on your own: examples that require counting, experiments that require conditional probability.

1. 2-32, p. 76, L-G
2. 2-35, p. 76, L-G
3. 2-38, p. 76, L-G
4. 2-40, p. 77, L-G
5. 2-43, p. 77, L-G
6. 2-54, p. 78, L-G (Note: Corollary 1 is in Section 2.2.)
7. A circular pan of water with radius 10 inches is stirred and the position of a floating spec is recorded after the water has come to rest.
 - (a) Determine the conditional probability that the spec is more than 1 inch from the center given that it is less than the 3 inches from the center.
 - (b) Determine the conditional probability that the spec is both to the north and east of the landing point, given that it is less than 5 inches from the center.
8. 2-49, p. 77, L-G.
9. 2-50, p. 77, L-G.
10. 2-51, p. 77, L-G.
11. 2-56, p. 78, L-G
12. A store opens at time 0 and never closes. The probability that the first customer to enter the store arrives between times t_1 and t_2 is
$$\int_{t_1}^{t_2} e^{-t} dt$$
, where $0 \leq t_1 \leq t_2 < \infty$. (Time is measured continuously from 0.)
 - (a) Find the probability that the first customer arrives between times t and $t+1$ given that no customer arrive at or before time t .
 - (b) Discuss the dependence of your answer on t .
13. 2-57a., p. 78, L-G