Department of Electrical Engineering, University of Hawaii

**EE 342: Probability and Statistics** **Fall 2016**

# Homerwork Set 2

## Due date: Sep 7, 2016

(1) Chapter 1, problem 15 from 8th edition

(2) Chapter 1, problem 16 from 8th edition

(3) Chapter 1, problem 21 from 8th edition

(4) Chapter 1, problem 22 from 8th edition

(5) Chapter 1, problem 28 from 8th edition

(6) Chapter 2, problem 35 from 8th edition

(7) Chapter 2, problem 47 from 8th edition

(8) A box contains ten 20-cent stamps, five 15-cent stamps and two 10-cent stamps. One draws six stamps at random. What is the probability that the sum of the values of the six stamps equals exactly 1 dollar?

(9) A is an event. B is another event. Known are P(B) and P(AB). Find P($\bar{A}$B).

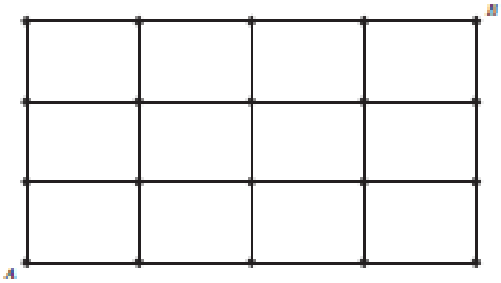
(10) A bowl contains twenty cherries, exactly fifteen of which have had their stones removed. A pig swallows five whole cherries, picked at random, without remarking on the presence or absence of stones. What is the probability that all the cherries the pig ate had stones?

(see next page for texts of the problems if you do not have the 8th edition)

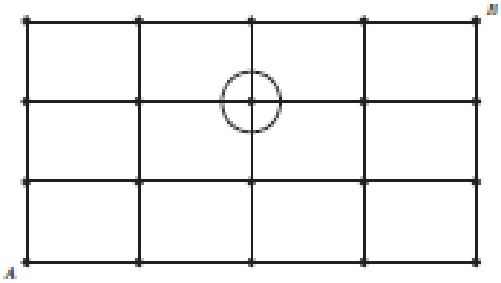
15. A dance class consists of 22 students, of which 10 are women and 12 are men. If 5 men and 5 women are to be chosen and then paired off, how many results are possible?

16. A student has to sell 2 books from a collection of 6 math, 7 science, and 4 economics books. How many choices are possible if
    (a) both books are to be on the same subject?
    (b) the books are to be on different subjects?

21. Consider the grid of points shown here. Suppose that, starting at the point labeled $A$, you can go one step up or one step to the right at each move. This procedure is continued until the point labeled $B$ is reached. How many different paths from $A$ to $B$ are possible?
    *Hint*: Note that to reach $B$ from $A$, you must take 4 steps to the right and 3 steps upward.




22. In Problem 21, how many different paths are there from $A$ to $B$ that go through the point circled in the following lattice?




28. If 8 new teachers are to be divided among 4 schools, how many divisions are possible? What if each school must receive 2 teachers?

35. Seven balls are randomly withdrawn from an urn that contains 12 red, 16 blue, and 18 green balls. Find the probability that
    (a) 3 red, 2 blue, and 2 green balls are withdrawn;
    (b) at least 2 red balls are withdrawn;
    (c) all withdrawn balls are the same color;
    (d) either exactly 3 red balls or exactly 3 blue balls are withdrawn.

47. If there are 12 strangers in a room, what is the probability that no two of them celebrate their birthday in the same month?