Department of Electrical Engineering, University of Hawaii

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

Homerwork Set 4

Due date: Sep 21, 2016

(1) Chapter 3, Problem 7

(2) Chapter 3, Problem 8

(3) Chapter 3, Problem 15

(4) Chapter 4, Problem 2

(5) Chapter 4, Problem 4

(6) Chapter 4, Problem 18

3.7. The king comes from a family of 2 children. What is the probability that the other child is his sister?

3.8. A couple has 2 children. What is the probability that both are girls if the older of the two is a girl?

3.9. Consider 3 urns. Urn A contains 2 white and 4 red balls, urn B contains 8 white and 4 red balls, and

(b) of the first 4 balls selected, exactly 2 are black.

3.15. An ectopic pregnancy is twice as likely to develop when the pregnant woman is a smoker as it is when she is a nonsmoker. If 32 percent of women of childbearing age are smokers, what percentage of women having ectopic pregnancies are smokers?

ues of X, and what are the probabilities associated with each value?

4.2. Two fair dice are rolled. Let X equal the product of the 2 dice. Compute $P\{X = i\}$ for $i = 1, \ldots, 36$.

4.4. Five men and 5 women are ranked according to their scores on an examination. Assume that no two scores are alike and all 10! possible rankings are equally likely. Let X denote the highest ranking achieved by a woman. (For instance, $X = 1$ if the top-ranked person is female.) Find $P\{X = i\}$, $i = 1, 2, 3, \ldots, 8, 9, 10$.

4.18. Four independent flips of a fair coin are made. Let X denote the number of heads obtained. Plot the probability mass function of the random variable $X - 2$.