MATH 3503: Tashfeen's Discrete Mathematics

Homework 7

Question 1. Please read chapter 10 of Chartrand et al. and write a couple sentences about a topic/example/concept that you found difficult or interesting and why?

Question 2. During the last class period of the semester, each student in a graduate computer science class with 10 students is required to give a brief report on his or her class project. The professor randomly selects the order in which the reports are to be given. Two students have been working on similar projects and would like to give their reports consecutively. What is the probability that this will happen?

Question 3. A coin is flipped three times.

(a) What is the probability of getting three heads?
(b) What is the probability of getting three heads given that the first flip came up heads?
(c) What is the probability of getting three heads given that the first two flips resulted in two heads?
(d) What is the probability of getting three heads given that the first three flips resulted in all heads?
(e) What is the probability of getting three heads given that at least one of the first two flips resulted in heads?
(f) What is the probability of getting three heads given that at most one of the first two flips resulted in heads?

Question 4. Three dice are tossed. What is the probability that 1 was obtained on two of the dice given that the sum of the numbers on the three dice is 7?

Question 5. Early each fall, a department store manager purchases a large number of winter sweaters. He pays \$60 for each sweater. Any sweater that isn't sold by Christmas will be sold for a \$10 dollar loss. Experience says that he can sell 40% of them by Christmas if he prices the sweaters at \$100 each, he can sell 60% of them if each is priced at \$90 and he can sell 70% of them if they are priced at \$80 each. How should the manager price the sweaters?

Question 6. A bowl contains 3 red balls, 2 white balls, and 1 blue ball

(a) What is the expected number of white balls obtained if three balls are selected at random from the bowl?
(b) What is the expected number of white balls obtained if three balls are selected at random from the bowl, one at a time, where a ball is returned to the bowl after it is selected?