Department of Computer Science and Engineering
University of California at San Diego

CSE 21
Spring 97

Sample Quiz 4

1. In a certain town, 25% of the citizens drive red cars, 45% of the citizens have received a speeding ticket, and 20% have both received a speeding ticket and drive red cars. A citizen is selected at random.
   (a) If she drives a red car, what is the probability that she has received a speeding ticket?
   (b) What is the probability that she drives a red car if she did *not* receive a speeding ticket?

2. There are two urns with the following initial distribution:
   Urn A contains 7 red marbles and 3 white marbles
   Urn B contains 2 red marbles and 4 white marbles

   First, one marble is drawn from A and placed into B.
   Second, another marble is drawn from A and placed into B.
   Third, one marble is drawn from B.

   (a) What is the probability that all three marbles drawn were the same color?
   (b) What is the probability of drawing at most two reds if the first marble drawn is red?

3. Consider a 5-day weather pattern where it is equally likely to be rainy as it is to be sunny
   Let A = event that three or more days are rainy.
   Let B = event that the first two days are sunny.
   Let C = event that all days have the same weather.

   (a) Find the probability of each event.
   (b) For each pair of events, decide whether they are independent. Defend your answer.