

Homework #2
Economics 113
Introduction to Econometrics
Professor Spearot
Due Friday, January 23rd, 2009 – Beginning of class

1. The Dude is an avid bowler. Since he is a master of relaxation, the probability of rolling a strike in any given frame is independent of all the others. Suppose that the probability of rolling a strike is 0.8 for each frame:
 - a. A turkey requires 3 strikes in a row. What is the probability that The Dude rolls 3 consecutive strikes?
 - b. What is the probability that The Dude fails to roll a strike in at least one of the three attempts?
2. Suppose that you join a game in which a coin is flipped four times. The probability of getting heads is 0.3. The random variable X is defined as the number of heads throughout the game.
 - a. Please solve for and diagram the probability distribution of X .
 - b. What is the expected value of X ?
3. Suppose that you have two bowls in front of you from which you select a single card. Bowls are selected at random and each is equally likely to be selected. Cards are either Red or Black. One bowl contains 4 red cards and contains 1 red card and 3 black cards. Given that you have selected a red card, what is the probability that you selected the bowl with all red cards?
4. Wave height is distributed normally with mean 6ft and standard deviation 2 ft.
 - a. What is the probability that a wave is 6ft tall?
 - b. What is the probability that a wave is between 6 and 9 feet tall?
 - c. What is the probability that a wave is between 2 and 7 feet tall?
 - d. Suppose that two waves are coming. Assume that they are independent from one another. What is the probability that wave one is between 4 and 7 feet tall OR wave two is between 4 and 9 feet tall?