

Math 393 Homework – due 11/9

1. How many different six-character license plates can be constructed using the 26 letters and 9 digits if the licenses must contain two pairs of adjacent digits (and no more digits) if repetition is not allowed?
2. In how many ways can you draw a 5-card hand containing exactly 2 sevens from a standard 52-card deck?
3. Suppose you are taking a true/false quiz with 5 problems and the probability that you will answer any given problem correctly is 0.6.
  - a. We are interested in how many problems you get right. The sample space for the experiment is  $S=\{0,1,2,3,4,5\}$ . Compute the probability of each outcome.
  - b. What is the probability that you will get at least one correct?
  - c. Find the expected value of the number correct.
4. A bowl has 5 slips – 1 labeled “win” and 4 labeled “lose”. You and a friend take turns drawing a slip out of the bowl until someone draws the “win” slip. Should you draw 1<sup>st</sup> or 2<sup>nd</sup> to have the greatest probability of winning? Show all probabilities in your explanation.