HW06 - Probability

Stat 20 & 131A, Spring 2017, Prof. Sanchez

Due Mar-2

1) Two cards will be dealt off the top of a well-shuffled deck. You have a choice: $0.5pts$

   i. To win \$1 if the first is a king.

   ii. To win \$1 if the first is a king and the second is a queen.

Which option is better? Or are they equivalent? Explain.

2) A poker hand is dealt. Find the chance that the first four cards are aces and the fifth is a king. Show your work. $1pt$

3) One ticket will be drawn at random from the box below. Are color and number independent? Explain. $1pt$

4) A coin is tossed six times. Two possible sequences of results are:

   i. H T T H T H

   ii. H H H H H H

(The coin must land H or T in the order given; H = heads, T = tails.) Which of the following is correct? Explain? $1pt$

   a. Sequence (i) is more likely.

   b. Sequence (ii) is more likely.

   c. Both sequencies are equally likely.

5) A die is rolled four times. What is the chance that: $3pts$

   a. all the rolls show 3 or more spots?

   b. none of the rolls show 3 or more spots?

   c. not all the rolls show 3 or more spots?

6) A die is rolled 10 times. Find the chance of: $3pts$

   a. getting 10 sixes.

   b. not getting 10 sixes.

c. all the rolls showing 5 spots or less.

7) Which of the two options is better, or are they the same? Explain. $_{0.5pts}$

    i. You toss a coin 100 times. On each toss, if the coin lands heads, you win \$1. If it lands tails, you lose \$1.

   ii. You draw 100 times at random with replacement from a box containing two tickets: `(1, 0)`. On each draw, you are paid (in dollars) the amount on the ticket.