Math 155 Ch 4 - Poker Excursion **Name** _____
Sample Test

1. What is does it mean for the probability of an event to equal ¾? What does it mean for the probability of an event to equal zero? To equal one?

2. A card is drawn from a standard deck.
a) What is the probability that the card is an Ace?

b) If that first card is not an ace and the card is not returned to the deck, what is the probability that the next card drawn is an ace?

c) If that first card is an ace and the card is not returned to the deck, what is the probability that the next card drawn is an ace?

3. Two standard dice are tossed.
a) What is the probability that the sum of the two dice is seven? Not seven?

b) If you win $4 when you toss a seven and lose $1 when you do not toss a seven, what is the expected value of such a game? After 100 tosses of the dice, how much money will you expect to win or lose?

4. The house (betting) odds for getting a single number on a roulette wheel is 35:1.
a) What does that indicate in terms of placing a bet on a single number?

b) Using those odds, what should be the probability of getting a single number?

c) The actual probability of getting a single number on a roulette wheel is 1/38. Why does this not match the probability in the above problem.

5. The class scores on a math test were:
96, 95, 94, 91, 90, 90, 90, 90, 89, 88, 87, 85, 84, 80, 79, 76, 75, 73
a) What is the range, median, and mean of the scores?

b) Make a bar graph of the percent frequency of the scores by breaking them into the following four classes: 94 – 100, 87 – 93, 80 – 86, 73 – 79.

6. If the weight of newborn babies form a normal distribution with a mean of 6.8 lbs and a standard deviation of 1.8, 68% of newborns should weigh between what weights.

7. In the last hand of the Ohlone Texas Holdem Tourney, Joel the Shark and Ron the Wizzard have the following cards:

Joel: K♥ Q♣ ***Ron: 8♣ 8♦***

Flop: J♠ 10♦ 4♣
Turn: 2♥

a) Why is Ron ahead before the last card *(the river card)* is dealt?

b) What cards on the river would cause Joel to beat Ron?

c) What is the percent chance the Joel wins? Ron wins?

HAND	EXAMPLE
1. Royal flush – Ace through Ten of the same suit.	(A♦, K♦, Q♦, J♦, 10♦)
2. Straight flush – cards of the same suit in sequential order.	(J♠, 10♠, 9♠, 8♠, 7♠)
3. Four of a kind – 4 cards of the same rank and another card.	(9♠, 9♦, 9♥, 9♣, J♠)
4. Full house – 3 cards of the same rank and 2 of another rank.	(J♣, J♦, J♥, 2♦, 2♣)
5. Flush – all cards of the same suit not in order.	(A♥, Q♥, 8♥, 7♥, 2♥)
6. Straight – five cards in sequential order not all the same suit.	(J♥, 10♠, 9♣, 8♦, 7♣)
7. Three-of-a-kind – 3 cards of the same rank plus 2 other cards.	(A♥, A♠, A♣, K♦, 6♥)
8. Two pairs – two sets of 2 cards of the same rank plus anther card.	(J♥, J♠, 8♣, 8♦, 7♣)
9. One pair – 2 cards of the same rank and 3 unmatching cards.	(J♥, J♠, 10♣, 7♦, 3♦)
10. High card – none of the above hands.	(A♥, J♠, 8♣, 5♦, 2♣)

EXTRA CREDIT: What has our brief trip into probability taught you about casinos?