

STAT 394
Probability I
Summer 2017

Problem Session # 2

Instructions: Find the group with the circled number. Start working together on the circled question. Continue with the next question (1 is the next question after the last). Do as many as you have time for.

1. If 3 balls are “randomly drawn” from a bowl containing 6 white and 5 black balls, what is the probability that one of the balls is white and the other two black?
2. Randomly draw 2 cards from the deck, if you know you have an Ace in the two cards, what is the probability that both cards are Aces? If you know you have an Ace of heart, what is the probability that both cards are Aces?
3. A poker hand consists of 5 cards. If the cards have distinct consecutive values and are **not all of the same suit**, we say that the hand is a straight. What is the probability that one is dealt a straight? (suits: heart ♡, diamond ◇, spade ♠, club ♣)
4. What is the probability of a full house (three cards of the same value and two cards of another value)?
5. A deck of 52 playing cards is shuffled, and the cards are turned up one at a time until the first ace appears. Is the next card, i.e., the card following the first ace, more likely to be the ace of hearts or the two of spades?
6. Suppose 5 coins are tossed. Then, the coins that come out Heads are left alone, while each coin that comes out Tails is tossed again **once**. Call this experiment successful if at the end all 5 coins show Heads. Repeat the experiment until it is successful. Compute the probability that, at the final repetition of the experiment, only 5 tosses were performed (i.e., the first five tosses came out Heads).