Senior Analysis Name _____
Review

Lecture 9 and 10

1. Suppose a card is drawn from a well-shuffled standard deck of 52 cards. Find the probability of drawing each of the following:

a) a black card
b) a heart
c) not a heart
d) a red diamond
f) a black diamond
g) not a black diamond

2. Mr. and Mrs. Smith each bought 10 raffle tickets. Each of their three children bought four tickets. If 4280 tickets were sold in all, what is the probability that the grand prize winner is

a) Mr. or Mrs. Smith
b) one of the five Smiths
c) none of the Smiths

3. Using the thrown dice table from the lecture 9 worksheet, find the probability of each event:

a) sum is 6
b) sum is 8
c) sum is even
d) sum is 12
e) sum is less than 12
f) the two dice show different numbers

4. A die is rolled and a coin is tossed. Find the probability that the die's number is even and the coin is "heads".

5. Suppose that the odds in favor of the National League's winning the All-Star Game are 4 to 3. What is the probability that the National League wins? What is the probability that the American League wins?

6. Suppose you roll two dice, each of which is a regular octahedron with faces numbered 1 to 8.

a) What is the probability that the sum of the numbers showing is 2?
b) What is the probability that the sum is 3?
c) What sum is most likely to appear?

7. From a group consisting of Alvin, Bob, Carol and Donna, two people are to be randomly selected to serve on a committee.

a) Find the probability that Bob and Carol are selected.
b) Find the probability that Carol is not selected.

8. The letters of the word TEXAS are arranged in a random order. What is the probability that the letters spell TAXES?

9. If a three letter "word" is formed by randomly choosing 3 letters from the word OCEAN, what is the probability that it is composed only of vowels?

10. From a box containing 3 red balls and 5 green balls, two balls ar randomly picked, one after the other and without replacement.

a) Find the probability that both balls are the same color.
b) Find the probability that one ball is red and one is green.

11. Repeat #10 if the first ball chosen is put back in the box and mixed with the other balls before the second ball is picked.

12. A penny, a nickel and a dime are tossed one after the other.
a) Find the probability of all 3 "heads".
b) Find the probability of exactly 2 "heads".
c) Find the probability of exactly 1 "head".
d) Find the probability of no heads.

13. In a math class with 13 girls and 11 boys, the teacher randomly selects four students to put problems on the chalkboard. What is the probability that all are girls?

14. Repeat problem thirteen and determine the probability that two boys and two girls will be selected.

15. Three cards are dealt (without replacement) from a well shuffled deck of cards.
a) Find the probability that all 3 cards are red.
b) Find the probability that all 3 cards are aces.
c) Find the probability that none of the cards is an ace.
d) Find the probability that at least one of the cards is an ace (at least??)
e) Find the probability that either one or two of the cards is an ace. (or)

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Answers

Name _____

1. a) $\frac{1}{2}$ b) $\frac{1}{4}$ c) $\frac{3}{4}$ d) $\frac{1}{4}$ e) 0 f) 1
2. a) $\frac{1}{214}$ b) $\frac{4}{535}$ c) $\frac{531}{535}$
3. a) $\frac{5}{36}$ b) $\frac{5}{36}$ c) $\frac{1}{2}$ d) $\frac{1}{36}$ e) $\frac{35}{36}$ f) $\frac{5}{6}$
4. $\frac{1}{4}$
5. $\frac{4}{7}, \frac{3}{7}$
6. a) $\frac{1}{64}$ b) $\frac{1}{32}$ c) 9
7. a) $\frac{1}{6}$ b) $\frac{1}{2}$
8. $\frac{1}{120}$
9. $\frac{1}{10}$
10. a) $\frac{13}{28}$ b) $\frac{15}{28}$
11. a) $\frac{17}{32}$ b) $\frac{15}{32}$
12. a) $\frac{1}{8}$ b) $\frac{3}{8}$ c) $\frac{3}{8}$ d) $\frac{1}{8}$
13. $\frac{65}{966}$
14. $\frac{65}{161}$
15. a) $\frac{2}{17}$ b) $\frac{1}{5525}$ c) $\frac{4324}{5525}$ d) $\frac{1201}{5525}$ e) $\frac{48}{221}$