Student: _____ **Instructor:** Manny Chaparro
Date: _____ **Course:** Math 108 FA17
Assignment: Practice Quiz 2

1. Find the number of distinguishable permutations of the letters in each word below.

(a) greater
(b) Tennessee
(c) possess

(a) The number of distinguishable permutations is _____.
(Simplify your answer.)

(b) The number of distinguishable permutations is _____.
(Simplify your answer.)

(c) The number of distinguishable permutations is _____.
(Simplify your answer.)

2. Two cards are drawn without replacement from an ordinary deck. Find the probability that the second is a heart, given that the first is the 3 of hearts.

The probability is _____.
(Simplify your answer. Type an integer or a simplified fraction.)

3. In a club with 9 male and 11 female members, a 7-member committee will be randomly chosen. Find the probability that the committee contains 3 men and 4 women.

The probability that it will consist of 3 men and 4 women is _____.
(Round to four decimal places as needed.)

4. A die is rolled 10 times. Find the probability of rolling the following.

Exactly 10 ones.

The probability is _____.
(Use scientific notation. Round to three decimal places as needed.)

5. A die is rolled 9 times. Find the probability of rolling exactly 1 one.

The probability is _____.
(Round to four decimal places as needed.)

6. For mutually exclusive events R_1, R_2, and R_3, we have $P(R_1) = 0.05$, $P(R_2) = 0.6$, and $P(R_3) = 0.35$. Also, $P(Q \mid R_1) = 0.4$, $P(Q \mid R_2) = 0.5$, and $P(Q \mid R_3) = 0.2$. Find $P(R_1$

$P(R_1 \mid Q) =$ _____
(Type an integer or a simplified fraction.)

7. A pair of dice is rolled. Find the probability of rolling

a) a sum not more than 9,
b) a sum not less than 5,
c) a sum between 3 and 8 (exclusive).

a) The probability of rolling a sum not more than 9 is _____.
(Type an integer or a simplified fraction.)

b) The probability of rolling a sum not less than 5 is _____.
(Type an integer or a simplified fraction.)

c) The probability of rolling a sum between 3 and 8 (exclusive) is _____.
(Type an integer or a simplified fraction.)

8. Decide whether the events are mutually exclusive.

Being a science major and being from the countryside

Are the events mutually exclusive?

- No
- Yes

9. Evaluate C(a,1).

C(a,1) = _____

10. For two events, M and N, P(M) = 0.3, P(N|M) = 0.5, and P(N|M') = 0.4. Find P(M'|N).

P(M'|N) = _____ (Simplify your answer. Type an integer or a fraction.)

11. Suppose a single fair die is rolled. Find the probability that it is a 6, given that it is an even number.

The probability is _____.
(Type an integer or a simplified fraction.)

12. Nine cards are marked with the numbers 1, 2, 3, 4, 5, 6, 7, 8, and 9, then shuffled, and three cards are drawn.

a. How many different 3-card combinations are possible?
b. How many 3-card hands contain a number less than four?

a. The total number of 3-card combinations is _____.

b. The number of 3-card hands that contain a number less than four is _____.

13. A bag contains 4 red balls and 3 blue balls. If 3 balls are selected at random, find the probability of selecting 3 red balls.

The probability is _____.
(Type an integer or a simplified fraction.)

14. Evaluate the factorial or permutation.

$P(n,6)$

Choose the correct answer below.

- **A.** 0
- **B.** n
- **C.** $n(n-1)(n-2)(n-3)(n-4)(n-5)$
- **D.** $n!$

15. Decide whether the events are mutually exclusive.

Being lazy and being unemployed

Are the events mutually exclusive?

- Yes
- No