Name: _____ Period: 2 7 (circle one)

Chapter 9 Review

Vocabulary and Concept Check

✓ Choose the correct term to complete the sentence

1. The set of all possible outcomes for an experiment is called the **(sample space, probability)**.
2. The Fundamental Counting Principle counts the number of possible outcomes using the operation of **(addition, multiplication)**.
3. The ratio of the number of times an event occurs to the number of trials completed is called the **(theoretical, experimental)** probability.
4. When the outcome of one event influences the outcome of a second event, the events are called **(independent, dependent)**.
5. A **(permutation, combination)** is a listing of objects in which order is important.
6. A **(complementary, compound)** event consists of two ore more simple events.
7. A **(simple, random)** event occurs by chance.
8. The probability of an event is the **(product, ratio)** of the number of ways an event can occur to the number of possible outcomes.
9. When using a combination, the order of the arrangement **(is, is not)** important.
10. The expression $n!$ is the **(sum, product)** of all counting numbers beginning with n and counting backward to 1.

9.1 Simple Events

✓ A bag contains 6 red, 3 pink, and 3 white bows. Suppose you choose a bow at random. Find the probability of each event. Write each fraction in **simplest form**.

- $P(\text{red})$
- $P(\text{pink})$
- $P(\text{white})$
- $P(\text{red or white})$
- $P(\text{pink or white})$
- $P(\textit{not}\ \text{white})$

(OVER)

9.2 Tree Diagrams

✓ For each situation, make a tree diagram to show the sample space. Then give the total number of outcomes.

a) Rolling a number cube and then tossing a coin

b) Choosing a red, blue, or white shirt with either black or grey lettering

c) Choosing from white, wheat, or rye bread and turkey, ham, or salami to make a sandwich

9.3 The Fundamental Counting Principle

✓ Use the Fundamental Counting Principle to find the total number of outcomes in each situation. SHOW YOUR WORK!!!

- rolling 2 number cubes
- selecting a car from 3 styles, 3 interior colors, and 3 exterior colors
- making an ice cream sundae selecting from 5 flavors of ice cream and 4 different toppings

(OVER)

9.4 Permutations

✓ Find the value of each expression.

a) $4!$ b) $9!$ c) $8 \cdot 7 \cdot 6 \cdot 5$ d) $7! \cdot 4!$

✓ In how many ways can five basketball players be placed in 3 positions?

✓ In how many ways can a director and assistant direction be chose from among 4 candidates?

9.5 Combinations

✓ How many 3-topping pizzas are possible given 8 different toppings?

✓ How many groups of 5 people are there from a committee of 9?

✓ In how many ways can Rondell select 2 board games from the 10 that his family has?

9.6 Theoretical & Experimental Probability

✓ The results of spinning a spinner labeled A-E fifty times are given. Find the experimental probability of each event.

- $P(\text{A})$
- $P(\text{D})$
- $P(\text{E})$

Letter	Frequency
A	8
B	17
C	9
D	6
E	10

9.7 Independent & Dependent Events

✓ A bag contains 6 green, 8 white, and 2 blue counters. Two counters are randomly drawn. Find each probability if the first counter is replaced before the second counter is drawn.

- $P(\text{green, blue})$
- $P(2 \text{ white})$

✓ Find each probability if the first counter is *not* replaced before the second counter is drawn.

- $P(2 \text{ green})$
- $P(\text{blue, white})$

(OVER)