Name _____ Date _____

Counting Principle Practice worksheet

In Exercises 1–4, make a tree diagram to find all the possible choices. Check your answer using the counting principle.

1. Choose turkey, roast beef, or ham with white, whole wheat, or rye bread.

2. Choose a sedan, truck, SUV, or minivan in red, blue, black, or green.

3. Choose a T-shirt, a button-down shirt, or a sweater, jeans or khakis, and either a red coat or a blue coat.

4. Choose a ranch, two-story, or tri-level house, white or gray siding, and either a one-car or two-car garage.

#1-4: Complete your diagrams on the back of this paper.

5. A menu has 3 choices for salad, 5 main dishes, and 4 desserts. How many different meals are possible if you select a salad, a main dish, and a dessert?

6. You are planning a trip. You can go to Phoenix, Las Vegas, San Diego, or Los Angeles, you can fly or drive, and you can stay for 3, 4, or 5 days. How many possible trips are there?

7. The telephone extensions at a company use 4 digits.

   a. How many extensions are possible if there are no restrictions?

   b. How many extensions are possible if the first digit cannot be 0 or 9?

   c. How many extensions are possible if the first digit can only be 1?

8. You are choosing a computer password. The password has 3 letters followed by 3 digits.

   a. How many passwords are possible if the letters must be uppercase?

   b. How many passwords are possible if no letter or digit can be repeated and the letters have to be lowercase?

In Exercises 9 and 10, use the following information. You have a 6-sided number cube and the spinner shown. The spinner is divided into equal parts.

9. You spin the spinner two times. Find the probability that the spinner stops on 3, then 1.

10. You spin the spinner once and roll the number cube once. Find the probability that the spinner stops on the same number that you roll with the number cube.

11. You flip a coin 5 times. What is the probability that the results are all heads or all tails?
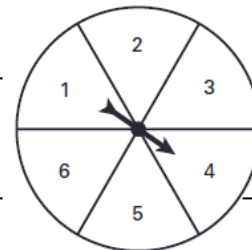
12. Each person that works at a company is given a 5-digit code followed by a letter, either uppercase or lowercase. These employees must enter their codes on a keypad to enter and exit the office building. The company has 130 employees.

   a. How many codes are possible if there are no restrictions?

   b. What is the probability of someone entering a code at random and gaining entry to the building?