

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**HW Section 6.2 Sample Spaces of Independent Events**

1. List the sample space for each of the following events:

- a) Flipping a coin 3 times
  
- b) Drawing two marbles in a bag where they are 3 green, 2 red, and 1 blue marble
  
- c) Rolling a four sided dice twice
  
- d) Spinning a coin and then flipping a coin
  
- e) Picking a letter from the word "GINGER"

2. Given each set of events, indicate whether or not if they are independent. Explain your answer:

- a. Flipping a coin twice. The outcome of each flip.
  
- b. Rolling a dice twice. The outcome of each roll
  
- c. What you eat for dinner and what time you go to bed
  
- d. The weather today and the weather tomorrow
  
- e. The gender of the first child and the gender of the second
  
- f. Drawing a card from a deck, replace it, and then draw the next card
  
- g. Drawing two marbles with replacement from a jar with 3 green, 3 red, and 4 blue marbles.

3. Jason has four pairs of pants, three shirts and two pairs of shoes. How many different outfits can he have?
  
4. A restaurant offers 4 different soft drink flavours, 5 different sandwiches and 3 different dessert selections. In how many ways can a person select one item from each category (a drink, a sandwich and a dessert)?
  
5. Using the digits 2, 3, 5, and 9, how many 2-digit whole numbers can be formed if repetitions are not permitted?
  
6. Using the digits 1, 4, 6, and 9, how many 2-digit whole numbers can be formed if repetitions are not permitted?
  
7. A multiple-choice test has 8 questions, with 4 possible answers for each question. If a student were to guess the answer to each question, how many different ways would there be to answer the test?
  
8. How many different outfits consisting of a shirt, a pair of pants, and a sweater can be chosen from 4 shirts, 3 pants, and 2 sweaters?
  
9. In how many ways can 5 books be arranged on a shelf if 2 of the books must remain together?