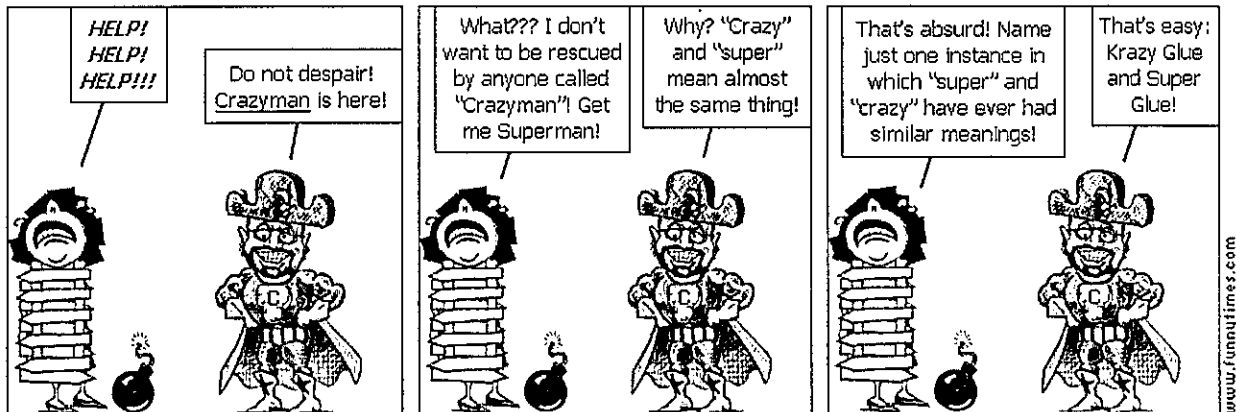


Name: \_\_\_\_\_

Hour: \_\_\_\_\_

# Unit O: Probability



## Glencoe Lesson 13-1: Representing Sample Spaces

### Vocabulary

Sample Space: \_\_\_\_\_  
\_\_\_\_\_

Tree Diagram: \_\_\_\_\_  
\_\_\_\_\_

Fundamental Counting Principle: \_\_\_\_\_  
\_\_\_\_\_

### Practice

1. A coin is tossed twice. Represent the sample space for this experiment by making an organized list, a table, and a tree diagram.

Organized List:

Table

Tree Diagram

2. To take a hamburger order, Kendra asks each customer the questions from the script shown. Draw a tree diagram to represent the sample space for hamburger orders.

- Burger Size (K, R, or L)
- Cheese (C or NC)
- Tomato (T or NT)
- Pickles (P or NP)

3. Haley has selected a size and overall style for her class ring. Now she must choose from the ring options shown. How many different rings could Haley create in her chosen style and size?

Ring Options	Number of Choices
metals	10
finishes	2
stone colors	12
stone cuts	5
side 1 activity logos	20
side 2 activity logos	20
band styles	2

## Glencoe Lesson 13-2: Permutations & Combinations

### Vocabulary

Permutation: \_\_\_\_\_

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Formula:

Combination: \_\_\_\_\_

---

Formula:

### Practice

1. Scott and Tony are members of the lacrosse team. If the 20 boys on the team are each assigned a jersey number from 1 to 20 at random, what is the probability that Scott's jersey number will be 1 and Tony's jersey number will be 2?
2. A class is divided into teams each made up of 15 students. Each team is directed to select team members to be officers. If Sam, Erica, and Shane are on a team, and the positions are decided at random, what is the probability that they are selected as president, vice president, and secretary, respectively?

3. On a game show, you are given the letters DWITLAC and asked to unscramble them to name a school mascot. If you selected a permutation of these letters at random, what is the probability that they would spell the correct answer of WILDCAT?
  
  
  
  
  
  
  
  
  
  
4. For her birthday, Amanda can invite 6 of her 20 friends to join her at a theme park. If she chooses to invite friends at random, what is the probability that friends Beyonce, Justin, Katy, Gaga, Wayne, and Rhianna are chosen?

## Glencoe Lesson 13-3: Geometric Probability

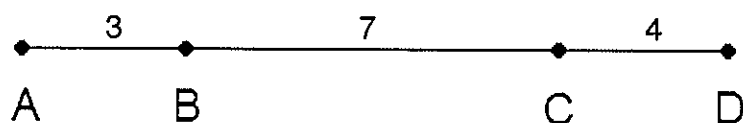
### Vocabulary

Geometric Probability: \_\_\_\_\_

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### Practice

1. Point  $X$  is chosen at random on  $\overline{AD}$ . Find the probability that  $X$  is on  $\overline{BC}$ .



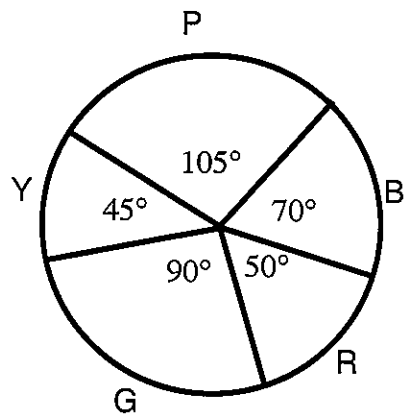
2. A Chicago Transit Authority train arrives or departs a station every 15 minutes on the Red Line. Assuming you arrive to the Red Line at a random time, what is the probability that you will have to wait 5 or more minutes for a train?
3. Suppose a skydiver must land on a target of three concentric circles. If the diameter of the center circle is 2 yards and the circles are spaced 1 yard apart, what is the probability that the skydiver will land in the center circle?

4. Use the spinner to find each probability.

A.  $P(\text{landing on yellow})$

B.  $P(\text{landing on purple})$

C.  $P(\text{landing on neither red nor blue})$



## Glencoe Lesson 13-4: Simulations

### Vocabulary

Probability Model: \_\_\_\_\_

\_\_\_\_\_

Simulation: \_\_\_\_\_

\_\_\_\_\_

Expected Value: \_\_\_\_\_

\_\_\_\_\_

Theoretical Probability: \_\_\_\_\_

\_\_\_\_\_

Experimental Probability: \_\_\_\_\_

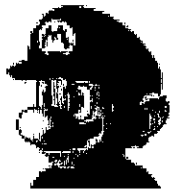
\_\_\_\_\_

### Practice

1. Pick a MarioKart character from below (circle). Don't share your choice with anyone!



Luigi



Mario



Donkey Kong



Yoshi



Bowser



Toad



Boo



Waluigi



Donkey Kong Jr.



Wario



Peach



Toadette



2. Fill in the table for the MarioKart Race completed in class. Mark an "X" in each box as each character moves ahead in the race.

# MARIO KART RACES

[illegible]

Which character won the race?

\_\_\_\_\_

## Glencoe Lesson 13-5: Probabilities of Independent and Dependent Events

### Vocabulary

Independent Events: \_\_\_\_\_

\_\_\_\_\_

Formula:

Dependent Events: \_\_\_\_\_

\_\_\_\_\_

Formula:

Conditional Probability: \_\_\_\_\_

\_\_\_\_\_

Probability Tree: \_\_\_\_\_

\_\_\_\_\_

### Practice

**For #1-3 determine whether the events are independent or dependent.**

1. One coin is tossed, and then a second coin is tossed.
  
  
  
  
  
  
  
  
  
  
2. Mrs. Merritt has a can of popsicle sticks with each student's name on it. She chooses one student's name without replacing it, then chooses another name.

3. Wednesday's lottery numbers and Saturday's lottery numbers.

4. Katy Perry and her friends are going to a concert. They put 5 slips of yellow paper and 3 slips of blue paper in a bag. If a person draws a yellow slip, he or she will ride in the van to the concert. A blue slip means he or she rides in the car.

Suppose Katy draws a slip. Not liking the outcome, she puts it back and draws a second time. What is the probability that on each draw her slip is blue?

5. Refer to #4 above. Suppose Katy draws a slip and does not put it back. Then her friend Lady Gaga draws a slip. What is the probability that both draw a yellow slip?

6. Mrs. Merritt's class is holding a debate. The 8 students participating randomly draw cards numbered with consecutive integers from 1 to 8.

\*Students who draw odd numbers will be on the Proposition Team.

\*Students who draw even numbers will be on the Opposition Team.

If Jose is on the Opposition Team, what is the probability that he drew the number 2?

## Glencoe Lesson 13-6: Probabilities of Mutually Exclusive Events

### Vocabulary

Mutually Exclusive: \_\_\_\_\_

Formula:

Complement: \_\_\_\_\_

Formula:

### Practice

**For #1 and 2, determine whether the events are *mutually exclusive* or *not mutually exclusive* and explain your reasoning.**

1. A Jenison High School, freshmen, sophomores, juniors, and seniors can all run for Student Council president. Travis wants either a junior or senior candidate to win the election. Maddie wants either a sophomore or a female to win, but says, "If the winner is sophomore Kendra Jones, I'll be thrilled!"
  - A. A junior winning the election or a senior winning the election.
  - B. A sophomore winning the election or a female winning the election.
2. Drawing an ace or a club from a standard deck of cards.

3. Logan makes a playlist that consists of songs from three different albums by his favorite artist. If he lets his iPod select the songs from this list at random, what is the probability that the first song played is from Album 1 or Album 2?

Logan's Playlist	
Album	# of Songs
1	10
2	12
3	13

4. The table shows the number and type of paintings Madison has created. If she randomly selects a painting to submit to an art contest, what is the probability that she selects a portrait or an oil painting?

Media	Still Life	Portrait	Landscape
watercolor	4	5	3
oil	1	3	2
acrylic	3	2	1
pastel	1	0	5

5. Brody bought 20 raffle tickets, hoping to win the \$100 gift card to his favorite store. If a total of 300 tickets were sold, what is the probability that Brody will not win the gift card?