G9-group test
Probability

Name_____ Per ___

Group Member names _____

C-Level (7 points each)	
G9-1 and 9-2 I can find the probability of an outcome	
1. Your friend tells you to pick a number from 6 to 20. List the sample space, find the total number of outcomes, and then find the probability if a number is chosen at random.	
a. Sample Space:	b. Total number of outcomes:
c. P(12) =	d. P(number < 17) =
e. P(even) =	f. P(multiple of 4) =
g. P(even and multiple of 4) =	h. P(even or multiple of 4) =

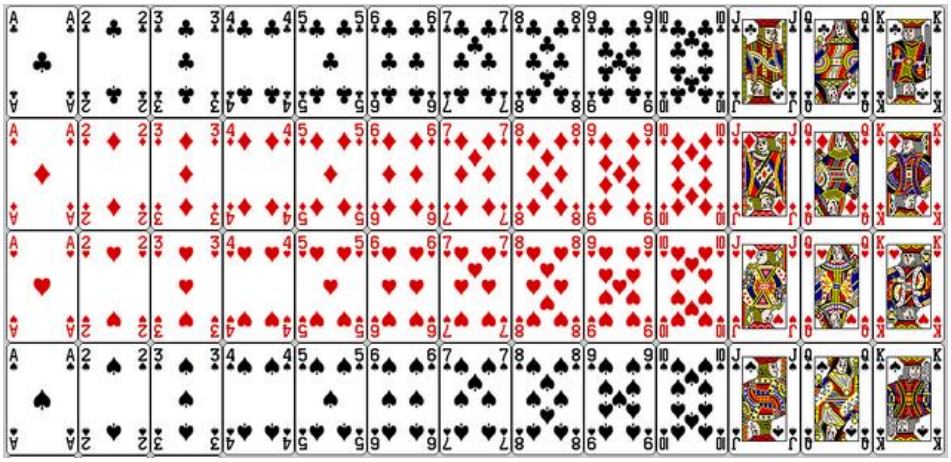
2. In a standard deck of 52 cards, shown below, find the following probabilities if a card is chosen at random.

Clubs

Diamonds

Hearts

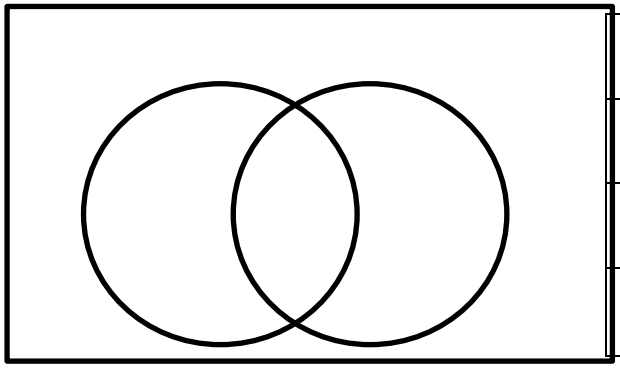
Spades



a. P(Diamond) =	b. P(Queen) =	c. P(Diamond ∩ Queen) =
d. P(Diamond U Queen) =	e. P(Diamond U Queen)^c =	f. P(not Diamond ∩ Queen) =

G9-3 I can use a Venn diagram and two-way table to find the probability.

3. In a random sample of 10,000 college students, a research company found that 35% ate breakfast in the cafeteria and 28% ate lunch in the cafeteria and 15% ate both breakfast and lunch in the cafeteria. Complete the two way table and Venn diagram



a. P(breakfast U lunch) = b. P(breakfast) = c. P(breakfast ∩ lunch)=

G9-4 I can use a tree diagram and area model

4. There are two jars of jellybeans. Jar #1 contains 60% yellow and 40% red jelly beans. Jar #2 contains 30% yellow, 50% red, and 20% white jelly beans. You randomly choose one jelly bean from each jar. Create a tree diagram or area model.

a. P(2 yellows) =	b. P(2 reds) =	c. P(red and white) =
d. P(at least one yellow) =	e. P(no reds)	f. P (no yellows) =

G9-5 I can calculate conditional probabilities

5. You are in charge of choosing the theme for the junior/senior prom. You survey the juniors and seniors and record the results in a two-way frequency table.

	Casino	Masquerade Ball	Arabian Nights	Total
Juniors	105	201	51	357
Seniors	185	151	56	392
Total	290	352	107	749

a. P(Casino|Senior)=	b. P(Junior|Masquerade Ball) =
c. P(Arabian Nights|Junior) =	d. P(Junior|Arabian Nights) =

B-Level (2 points each)

6. Two standard (six-sided) dice are being rolled.
Let event A={sum greater than 5} and
event B={the sum is a multiple of 3}.

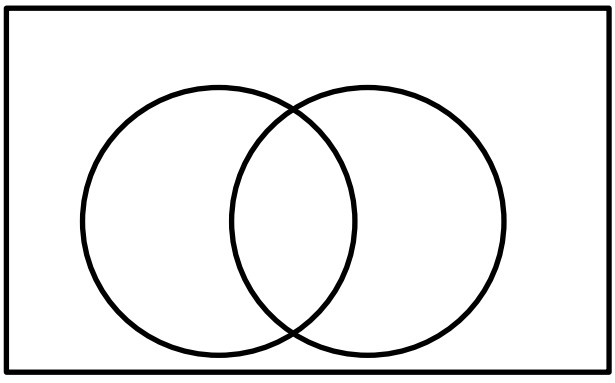
P(A)=	P(B)=
P($A \cap B$)=	P($A \cup B$)=
P($A \cap$ not B) =	P(not A U not B)=

7. In a random sample of 1,000 high school students, a research company found that 28% were involved in a sport and 43% were getting A's in at least half of their classes. When they reported their findings, the research company indicated that 59% of high school students were either involved in sports or were getting A's in at least half of their classes. Create a Venn diagram.

P(sports $\cap$ A's) =

P(sports $\cup$ A's) =

P(sports $\cup$ A's)^c =



8. At Gray's Warehouse, 60% of the employees work the day shift. On any given day, about 2% of the day shift employees and 3% of the night employees will miss work for one reason or another.

P(day shift| missed work) =

9. Eddie flips a penny, nickel, and a dime. Make an area model or tree diagram

a. P(Three tails)=

b. P(At least two tails)=

c. P(Exactly two tails)

d. P(At least one head)=

10. Using the table in question #5 above. Are the events {Senior} and {Arabian Nights} independent or associated? Justify your answer.

A-Level (5 points)

11. If Letitia studies for her math test tonight, she has an 80% chance of getting an A. If she does not study, she only has a 10% chance. Whether she can study or not depends on whether she has to work at her parents' store. Her father said there is a 50% chance that Letitia would have to work. If she has to work she cannot study.

a. Draw a diagram for the situation.

b. Find the probability that Letitia gets an A.