Math 1332 Review 2

1. Suppose that you reach into a bag and randomly select a piece of candy from 15 chocolates, 10 caramels, and 5 peppermints. Find the probability of:

a) selecting a chocolate **b)** selecting a caramel or a peppermint

c) not selecting a peppermint

2. In a lottery, a player selects 5 different numbers from 1-20. If these five numbers match the five numbers drawn in the lottery, the player wins the top cash prize. What is the probability of winning the top cash prize:

a) with one ticket? **b)** with 100 different tickets? **c)** with 15,504 different tickets?

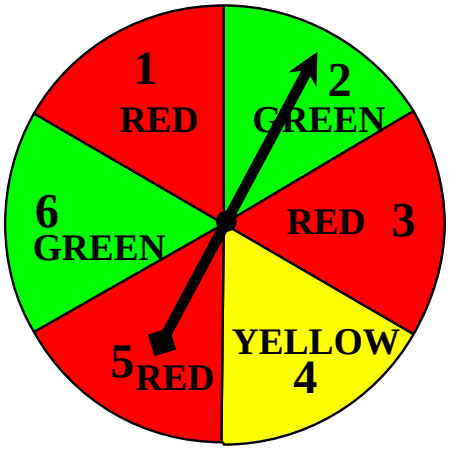
3. A political discussion group consists of 4 Republicans and 6 Democrats. If a committee of four people is selected at random, find the probability that

a) all four are Democrats. **b)** two are Democrats and two are Republicans.

4. If the following spinner is spun, find the probability of

a) not stopping on 4. **b)** stopping on red or yellow.

c) stopping on red or a number greater than 3.



5. The odds in favor of a candidate winning an election are given at 3 to 1.

a) What is the probability that the candidate will win the election?

b) What is the probability that the candidate won't win the election?

6. A game is played by randomly selecting one bill from a bag that contains ten $1 bills, five $2 bills, three $5 bills, one $10 bill, and one $100 bill. The player gets to keep the selected bill.

a) Complete the table of amounts of money won and their probabilities:

$1	**$2**	**$5**	**$10**	**$100**
$\frac{1}{2}$				

b) If the player must pay $20 to play this game, what is the expected value of the game?

7. A survey of 350 college students revealed the following:

	Public College	**Private College**	**Total**
Low income	120	20	140
Middle income	110	50	160
High income	22	28	50
Total	252	98	350

Find the probability that a randomly selected student from the survey

a) attends a public college. **b)** is not from a high income family.

c) is from a middle or high income family.

d) attends a private college or is from a high income family.

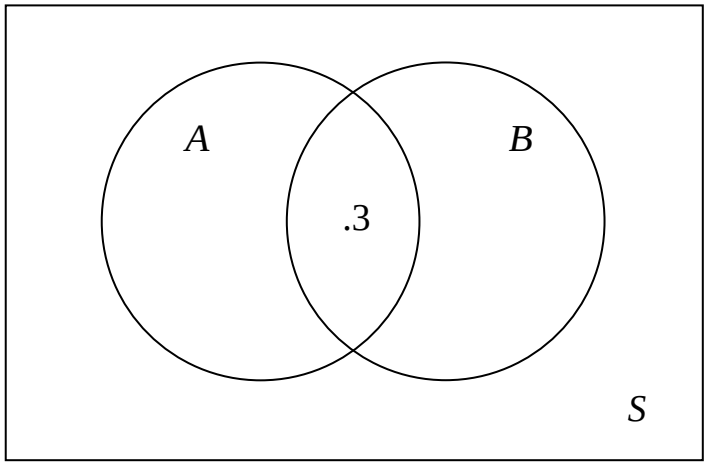
e) attends a private college and is from a low income family.

f) attends a public college, given that the student is from a high income family.

g) attends a private college, given that the student is not from a high income family.

8. The probability of the event A occurring is .7, the probability of the event B occurring is .6, and the probability of the event $A \cap B$ occurring is .3.

a) Complete the following probability diagram:



b) What's the probability of the event $A \cup B$ occurring?

c) What's the probability of the event $A \cap B'$ occurring?

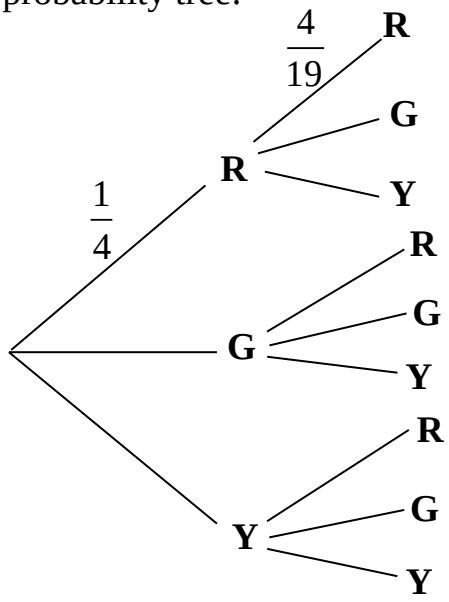
d) What's the probability of the event A' occurring?

e) What's the probability of the event A occurring, given that the event B will occur?

f) Are the events A and B independent? **g)** Are the events A and B mutually exclusive?

9. A box contains 5 red marbles, 6 green marbles, and 9 yellow marbles. You select one marble at random and do not replace it. Then you randomly select a second marble.

a) Complete the following probability tree:



b) Find the probability that both marbles selected are green.

c) Find the probability that the second marble selected is red.

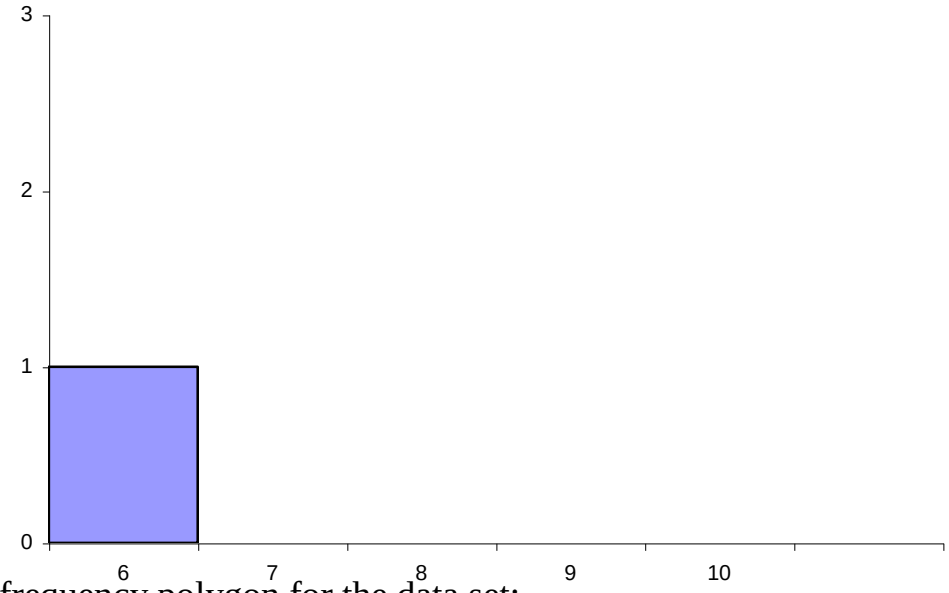
d) Find the probability that the first marble selected was red given that the second marble selected is yellow.

10. A sample of the amount of time spent studying per week by 10 college students resulted in the following data set: $\{8,10,9,7,9,8,7,6,8,7\}$

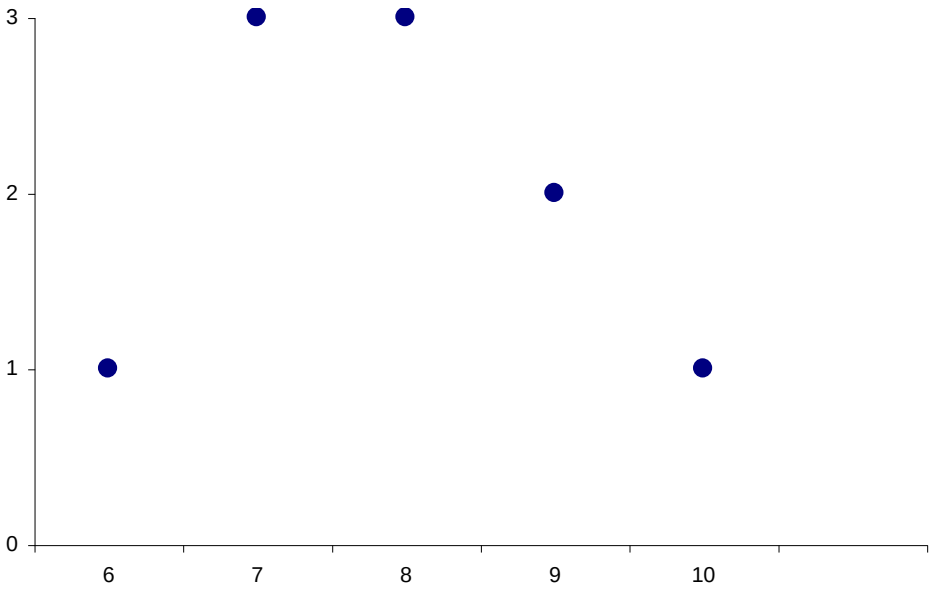
a) Complete the frequency distribution for the data set:

x	frequency
6	1
7	
8	
9	
10	
Total	

b) Complete the histogram for the data set:



c) Complete the frequency polygon for the data set:



11. Complete the stem and leaf plot for the following data set:
$\{21, 45, 39, 21, 16, 14, 12, 28, 30, 47\}$.

1	6 4 2
2	
3	
4	

12. Find the mean, median, mode, and the midrange for the data values in the following stem and leaf plot:

1	1 3 5
2	0 1 1
3	2 3
4	0 1 8

13. Find the mean, median, mode, and the midrange for the data values in the following frequency distribution:

x	frequency
1	2
2	5
3	3
4	2
Total	12