Name_____ Date_____ Period_____

Probability: Compound Events

1. **Use the following table to answer the questions about a person's favorite sport.**

	Basketball	Baseball	Football	Soccer	Tennis
Male	15	14	22	5	6
Female	10	3	1	17	7

a) If a person is picked randomly, what is the probability of picking a person that likes basketball or is a female?

$\frac{25}{100} + \frac{38}{100} - \frac{10}{100}$ $\frac{53}{100} \approx .53$

b) If I am picking one person randomly, what is the probability that the person likes baseball or soccer?

$\frac{17}{100} + \frac{22}{100}$ $\frac{39}{100} \approx .39$

c) If I am picking one person randomly, what is the probability that the person is a male or likes tennis?

$\frac{69}{100} \approx .69$

d) If a person is picked randomly, what is the probability that the person is a female and likes soccer?

$\frac{17}{100} \approx .17$

e) What is the probability that a randomly selected person likes baseball given they are a female?

$\frac{3}{38}$ $\frac{3}{38} \approx .079$

2. Rolling dice. Find the probabilities of the following events.

a) If rolling 2 dice, one after the other, find the probability of getting two fives in a row?

$\frac{1}{6} \cdot \frac{1}{6}$ $\frac{1}{36}$

b) If rolling 2 dice, what is the probability of rolling a 4 and then a 2?

$\frac{1}{36}$

3. Given a bag of 5 red marbles, 3 blue marbles and 6 green marbles, find the probability of drawing a red marble and then a blue marble if the first is not replaced.

$\frac{15}{182} \approx .082$

Are You Ready for Your Quiz??? **Name:** _____

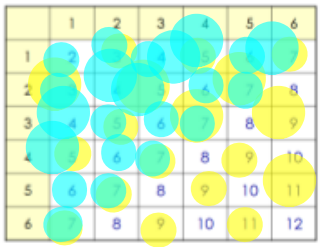
The sum of 2 dice

5/9 1. P(even sum or a sum greater than 9) $\frac{18}{36}+\frac{6}{36}-\frac{4}{36}$

1/2 2. P(sum less than 7 or a sum greater than 10)

3/4 3. P(odd sum or a sum less than 8) $\frac{15}{36}+\frac{3}{36}$

$\frac{18}{36}+\frac{21}{36}-\frac{12}{36}$



Calendar – A month is chosen from a year

1/4 1. Find the probability of choosing a month that begins with a vowel.

5/12 2. Find the probability of choosing a month starting with the letter M or J.

1/4 3. Find the probability of choosing a month that starts with a vowel given that they end in the letter R.

J F M A M
J J A S O
N D

$\frac{2}{12}+\frac{3}{12}$

Deck of Cards

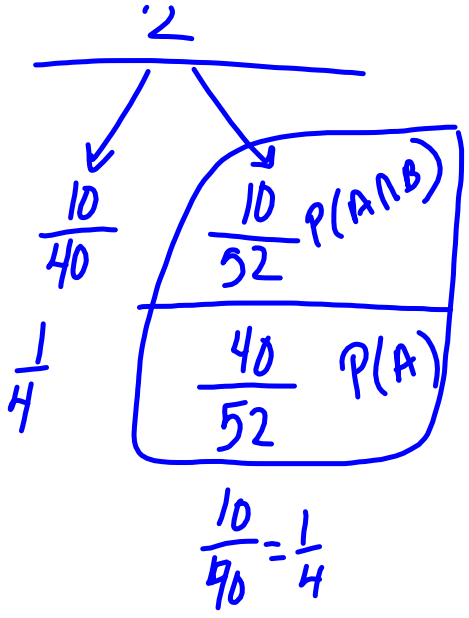
A card is chosen from a standard deck of cards. The drawer is looking for clubs and face cards. Given the table, find the following probabilities

	Club	Not a Club	Total
Face card	3	9	
Not a face card	10	30	
Total			

1. Find P(Club) $\frac{13}{52} = \frac{1}{4}$
2. Find P(Club | Not a Face Card) B | A
3. Find P(Club ∩ Face Card) $\frac{3}{52}$
4. Find P(Not a Club ∪ Not a Face Card)

$$\frac{39}{52} + \frac{40}{52} - \frac{30}{52}$$

$$\frac{49}{52}$$



4. You have 6 red marbles, 3 blue marbles, 7 green marbles, and 4 yellow marbles. What is the probability of picking a blue marble and then a green marble if the first is replaced?

$\frac{3}{20} \cdot \frac{7}{20}$ $\frac{21}{400} \approx .0525$

5. A spinner has equal sections: red, blue, green and yellow. What is the probability of landing on a red 2 times in a row?

$\frac{1}{4} \cdot \frac{1}{4}$ $\frac{1}{16} \approx .0625$

6. A machine is making parts. An inspector finds that 4 out of every 100 are bad.
a) What is the probability of picking 2 bad parts in a row if the first one is replaced?

$\frac{16}{10{,}000} \approx .0016$ $\frac{4}{100} \cdot \frac{4}{100}$

b) What if it is not replaced?

$\frac{12}{9900} \approx .0012$ $\frac{4}{100}$

7. In a standard deck of cards, find the probability that you randomly select a 2 or a 10.

$\frac{8}{52} \approx .1538$

8. In a standard deck of cards, find the probability that you randomly select a king of diamonds or any spade.

$\frac{7}{26} \approx .269$

9. In a standard deck of cards, find the probability that you randomly select a 3 or a diamond.

$\frac{4}{52} + \frac{13}{52} - \frac{1}{52} = \frac{16}{52}$ $\frac{4}{13} \approx .3077$

10. In a standard deck of cards, find the probability of getting an even number or a heart.

2
4
6
8
10

$\frac{20}{52} + \frac{13}{52} - \frac{5}{52}$ $\frac{7}{13} \approx .538$

$\frac{28}{52}$

52 total

13 of each suit

A - K

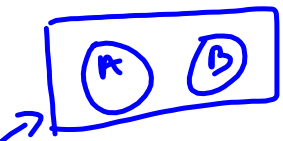
12 face cards

$P(A \cap B)$ And

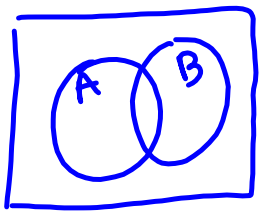
- ind. → $P(A) \cdot P(B)$
- dep. → $P(A) \cdot P(B/A)$

$P(A \cup B)$ OR

- M.E. → $P(A) + P(B)$



- over → $P(A) + P(B) - P(A \cap B)$



$P(A)'$ Not A = everything but A. $1 - P(A)$