

The table shows the genders and first initials of the students in the math club.

	Name Starts with A–M	Name Starts with N–Z	TOTAL
<b>Boy</b>	14	10	24
<b>Girl</b>	12	14	26
<b>TOTAL</b>	26	24	50

1. Find  $P(\text{Name Starts with N-Z})$       2. Find  $P(\text{Girl})$

3. Find  $P(\text{Boy} \cap \text{Name Starts with A-M})$       4. Find  $P(\text{Girl} \cup \text{Name Starts with N-Z})$

5. Find  $P(\text{Boy} \mid \text{Name Starts with N-Z})$       6. Find  $P(\text{Name Starts with A-M} \mid \text{Girl})$

7. A mall surveyed 120 shoppers to find out if they typically wait for a sale or buy on impulse. One-fourth of those surveyed buy on impulse. 40 women wait for a sale and 20 men buy on impulse. Fill in the table completely.

	Wait for a Sale	Buy on Impulse	Total
Woman			
Man			
Total			

Let  $M$  be the event that a person is man. Let  $W$  be the event that a person waits for sale.

- a. Find  $P(M)$       b. Find  $P(W)$       c. Find  $P(M \cap W)$       d. Are the events independent? Why/Why not?

8. The table shows the number of Freshman and Sophomores in band and chorus.

	Band	Chorus	Total
<b>Freshman</b>	42	14	56
<b>Sophomore</b>	63	21	84
<b>TOTAL</b>	105	35	140

- a. Find  $P(\text{Sophomore})$

- b. Find  $P(\text{Sophomore} \mid \text{Band})$

- b. Look at your answers to a and b. What does that mean?

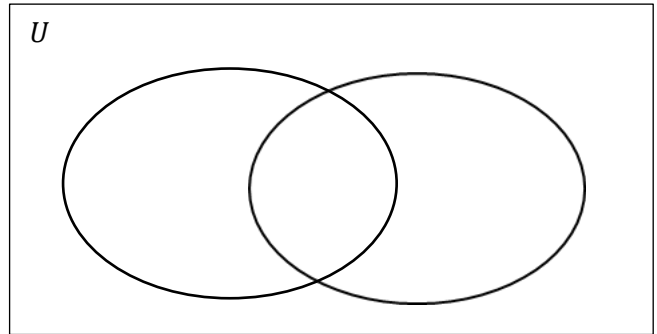
9. Create a Venn diagram to represent sets  $A, B$  &  $U$ .

$$A = \{7, 9, 11, 13, 15\}$$

$$B = \{9, 12, 15\}$$

$$U = \{7, 8, 9, 10, 11, 12, 13, 14, 15\}$$

- a.  $P(B)$    b.  $P(A \cap B)$    c.  $P(A \cup B)$    d.  $P(A^C)$



Your bag of M&M's contains 6 brown, 8 green, 7 orange, and 3 red. Find the probability of:

10. picking a red
11. not picking a brown
12. picking a orange (you hate orange and put it back) and then picking a green
13. picking a red, eating it, and then picking another red
14. Determine whether each situation requires a permutation or a combination.
- A. A pizza place has 10 toppings, and 3 are chosen for the pizza.  
 Permutation    Combination
  - B. Five students are lined up to take a picture.  
 Permutation    Combination
  - C. A password chosen from a list of 26 letters is used to access an online account.  
 Permutation    Combination
  - D. Two students are chosen as class representatives.  
 Permutation    Combination
15. How many permutations are there in the word MISSISSIPPI?
16. How many possible outfits do you have if you own 5 pairs of pants, 8 shirts, and 3 pairs of shoes?
17. Find the number of possible 5-person committees that can be formed from a group of 25 people.
18. Find the number of possible officers (president, vice-president, secretary, treasurer, and liaison) that can be chosen from a group of 25 people.