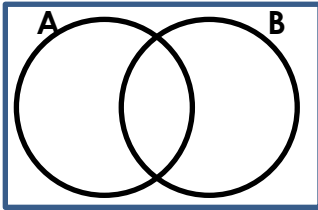


Name: \_\_\_\_\_ Date: \_\_\_\_\_

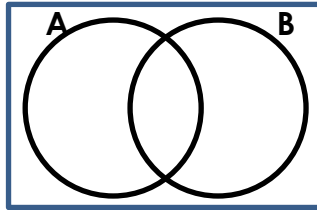
## Using Venn Diagrams

Shade in the appropriate area of the Venn Diagram.

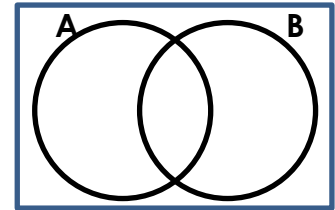
1.  $A \cap B$



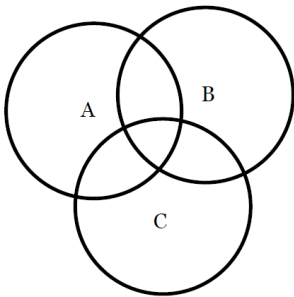
2.  $A \cap B'$



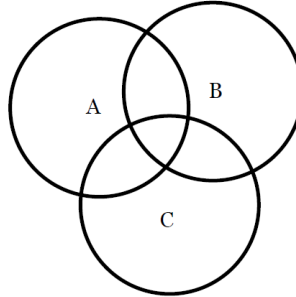
3.  $A'$



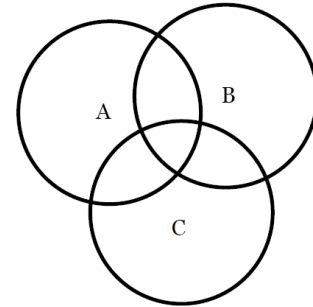
4.  $B \cup C$



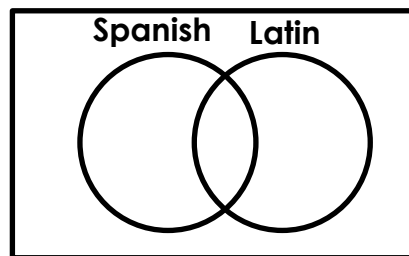
5.  $A \cap B \cap C$



6.  $A \cap B'$



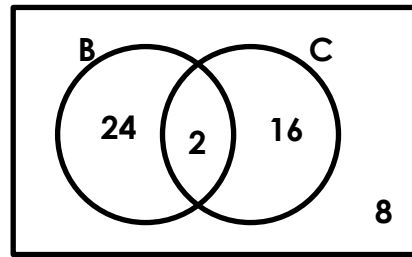
A guidance counselor is planning schedules for 30 students. 16 want to take Spanish and 11 want to take Latin. 5 say they want to take both. Display this information on the Venn Diagram below.



- \_\_\_\_\_ 1. Find  $P(S \cap L)$
- \_\_\_\_\_ 2. Find  $P(L)$
- \_\_\_\_\_ 3. What is the probability that a student studies at least one subject?  $P(S \cup L)$
- \_\_\_\_\_ 4. What is the probability that a student studies exactly one subject?
- \_\_\_\_\_ 5. What is the probability that a student studies neither subject?  $P(S \cup L)'$

If the Venn Diagram below shows the number of people in a fine arts club who are in band (B) and choir (C), make the following determinates:

- \_\_\_\_\_ 1. How many people are in a fine arts club?
- \_\_\_\_\_ 2. Find  $P(B)$
- \_\_\_\_\_ 3. Find  $P(B \cap C)$
- \_\_\_\_\_ 4. Find  $P(B \cup C)$
- \_\_\_\_\_ 5. Find  $P(B)'$

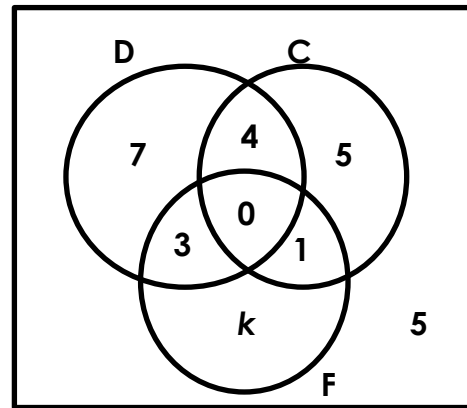


The Venn Diagram below shows the results of a survey done by a veterinarian about the types of pets owned by 26 clients. The survey was only related to dogs (D), cats (C), and fish (F).

- \_\_\_\_\_ 6. What is the value of  $k$ ?

If a randomly selected member is asked their preference, what is the probability that the member has:

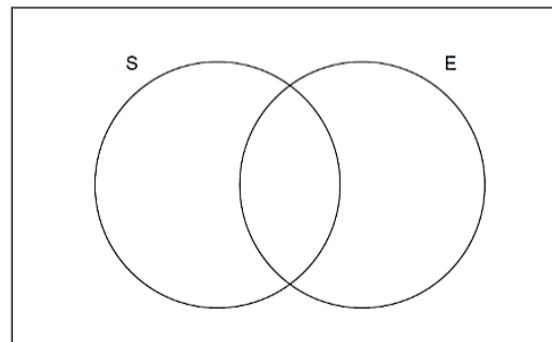
- \_\_\_\_\_ 7. Only dogs?
- \_\_\_\_\_ 8. Dogs and cats?
- \_\_\_\_\_ 9. None of these animals?
- \_\_\_\_\_ 10. At least one of these pets?
- \_\_\_\_\_ 11. All of the pets?
- \_\_\_\_\_ 12. Fish and dogs, but not cats?
- \_\_\_\_\_ 13. Fish or dogs?



Complete the Venn diagram.

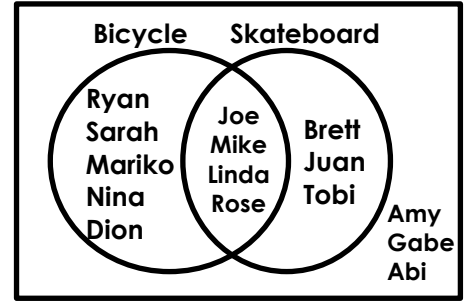
$\xi = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$   
 $S$  = square numbers  
 $E$  = even numbers

- 14. One of the numbers is chosen at random. Write down  $P(S \cap E)$ .



**Mr. Leary's Class: Use the Venn Diagram showing the number of kids owning bicycles (A) and skateboards (B) to find the following probabilities.**

- \_\_\_\_\_ 1. Find  $P(A \cap B)$  and describe what this probability represents?
- \_\_\_\_\_ 2. Find  $P(A \cup B)$  and describe what this probability represents?
- \_\_\_\_\_ 3. Find  $P(A \cup B)'$  and describe what this probability represents?



**Mr. Grisham took a poll of his student's favorite type of weather. The students had the choice of hot, cold, and/or rain/snow. The results are displayed in the Venn Diagram. Write your answer as a reduced fraction.**

- \_\_\_\_\_ 6. Find  $P(\text{Cold})$ .
- \_\_\_\_\_ 7. Find  $P(\text{Warm})'$ .
- \_\_\_\_\_ 8. Find  $P(\text{Cold} \cap \text{Warm})$ .
- \_\_\_\_\_ 9. Find  $P(\text{Warm} \cap \text{Rain})$ .
- \_\_\_\_\_ 10. Find  $P(\text{Warm} \cap \text{Cold} \cap \text{Rain})$ .
- \_\_\_\_\_ 11. Find  $P(\text{Cold} \cup \text{Warm})$ .

