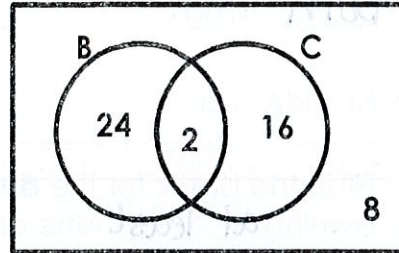


Name: Key Date: _____

Using Venn Diagrams

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:

- 50 1. How many people are in the club?
- $\frac{13}{25}$ 2. Find $P(B)$ $\frac{26}{50}$
- $\frac{1}{25}$ 3. Find $P(B \cap C)$ $\frac{2}{50}$
- $\frac{21}{25}$ 4. Find $P(B \cup C)$ $\frac{42}{50}$
- $\frac{12}{25}$ 5. Find $P(B)'$ $\frac{24}{50}$



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.



- $\frac{1}{6}$ 7. Find $P(S \cap L)$ $\frac{5}{30}$
- $\frac{11}{30}$ 8. Find $P(L)$ $\frac{11}{30}$
- $\frac{11}{15}$ 9. What is the probability that a student studies at least one subject? $P(S \cup L)$ $\frac{22}{30}$
- $\frac{17}{30}$ 10. What is the probability that a student studies exactly one subject? $\frac{11+6}{30}$
- $\frac{4}{15}$ 11. What is the probability that a student studies neither subject? $P(S \cup L)'$ $\frac{8}{30}$
- $\frac{5}{11}$ 12. What is the probability that a student studied Spanish if it is known that the student studies Latin? *Hint: your denominator only represents those who study Latin. Only look in that circle to search for your numerator.*

$\frac{5}{11}$

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

$\frac{4}{15}$ 13. Find $P(A \cap B)$

Fill in the blank for the **description** of what this means: It's the probability of owning both things.

$\frac{4}{5}$ 14. Find $P(A \cup B)$

Fill in the blank for the **description** of what this means: It's the probability of owning at least one of the things.

$\frac{1}{5}$ 15. Find $P(A \cup B)'$

Fill in the blank for the **description** of what this means: It's the probability of owning neither thing.

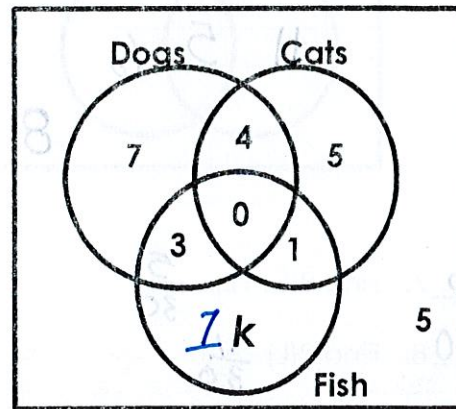


The Venn diagram below shows the results of a survey done by a veterinarian about the types of pets owned by 26 clients. The survey was only related to dogs (D), cats (C), and fish (F).

1 16. What is the value of k ?

17. How did you determine the value?
 $7 + 4 + 3 + 0 + 1 + 5 + 5 + k = 26$
 $25 + k = 26$

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



$\frac{7}{26}$ 18. Only dogs? $\frac{7}{26}$

$\frac{2}{13}$ 19. Dogs and cats? $P(D \cap C)$

$\frac{5}{26}$ 20. None of these animals? $P(D \cup C \cup F)'$

$\frac{21}{26}$ 21. At least one of these pets? $P(D \cup C \cup F)$

$\frac{0}{26}$ 22. All of the pets? $P(D \cap C \cap F)$

$\frac{3}{26}$ 23. Fish and dogs, but not cats?

$\frac{8}{13}$ 24. Fish or dogs? $P(F \cup D)$ $\frac{16}{26}$