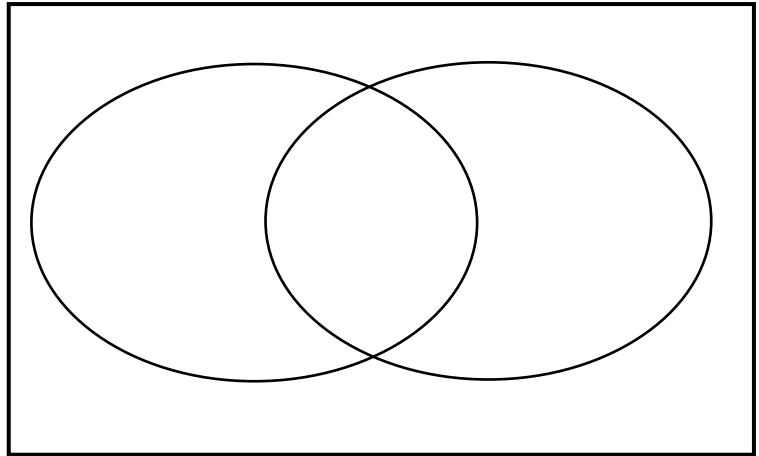


Dog vs. Cat

1. Draw a Venn diagram to organize the outcomes for your class. (*Hint: Students listed in both the Dog and Cat categories should be identified first prior to filling in the diagram.*)

Find:

- a. $P(D)$
- b. $P(\sim C)$
- c. $P(D \cap C)$
- d. $P(D \cup C)$



2. For the How Odd homework, you found the relationship between A , B , $(A \cup B)$, and $(A \cap B)$ to be $(A \cup B) = A + B - (A \cap B)$. In a similar way, write a formula for $P(A \cup B)$.
3. Now find $P(D \cup C)$ using the formula instead of the Venn diagram. Did you get the same answer as you did in 1d. above?

In what situation might you be forced to use the formula instead of a Venn diagram to calculate the union of two sets?

Snapchat vs. Instagram

Draw a Venn Diagram to organize your outcomes. (*Hint: Notice that born in Tracy (T) and not born in Tracy (N) will not overlap and neither will Snapchat (S) and Instagram(I).*)

1. Find $P(S \cup T)$
2. What is another way to write $P(S \cup T)$ using a complement?
3. Find $P(\bar{I} \cap N)$
4. Find $P(S \cap T) + P(\overline{S \cup T})$

