Section 6.2: Venn Diagrams

Example: If A = { 1, 3, 5} and B = {3, 4, 5, 6} compute the following.

n(A) = _____ n(B) = _____ $n(A \cap B)$ = _____ $n(A \cup B)$ = _____

Union Formulas:

Example: Suppose we survey 60 shoppers about two products: A and B.
30 shoppers bought product A
20 shoppers bought product B
9 shoppers bought product A and product B

A) Fill in a Venn Diagram that represents this information.

B) How many shoppers bought product A but not B?

C) How many shoppers bought product A or B?

D) How many shoppers bought at least one product?

E) How many shoppers bought exactly one product?

F) How many shoppers bought neither of these products?

Example: If $n(U) = 500$ and $n(A \cup B) = 300$, what is $n(A^c \cap B^c)$?

Example: Supposed we poll 100 people with 3 yes/no questions.

22 people answered no to all three questions.
45 answered yes to question 1.
25 answered yes to question 2.
32 answered yes to question 3.
6 answered yes to only question 1 and question 3.
12 answered yes to question 2 and question 3.
2 answered yes to all three questions.

A)Fill in a Venn Diagram that represents this information.

B) How many people answered yes to question 2 or question 3?

C) How many people answered yes to at most one question?

D) How many people answered yes to question 2 but not question 1?

E) How many people answered yes to exactly 2 questions?