

Cardinality on Set Operations

Example:

$$n(L \cap M \cap N) = n(L \cup M \cup N) - n(L) - n(M) - n(N) + n(L \cap M) + n(M \cap N) + n(L \cap N)$$

If $n(L) = 21$, $n(M) = 24$, $n(N) = 25$, $n(L \cap M) = 15$, $n(M \cap N) = 10$, $n(L \cap N) = 8$ and

$$n(L \cup M \cup N) = 50, \text{ then } n(L \cap M \cap N) = 0 + 21 + 24 + 25 - 15 - 10 - 8 + 0 = 43$$

PREVIEW

1) If $n(R) = 12$, $n(S) = 13$, $n(T) = 17$, $n(R \cap S) = 8$, $n(S \cap T) = 5$, $n(R \cap T) = 11$ and

$n(R \cup S \cup T) = 20$, then

$$n(R \cap S \cap T) = \underline{\hspace{2cm}}$$

2) If $n(D) = 3$, $n(E) = 4$, $n(F) = 20$, $n(D \cap E) = 2$, $n(D \cap F) = 1$, $n(E \cap F) = 1$ and

$n(D \cap E \cap F) =$

$$n(D \cup E \cup F) =$$

3) If $n(V) = 10$, $n(W) = 12$, $n(X) = 15$, $n(V \cap W) = 5$, $n(W \cap X) = 7$, $n(V \cap X) = 6$ and

$n(V \cup W \cup X) =$

$$n(V \cap W \cap X) = \underline{\hspace{2cm}}$$

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