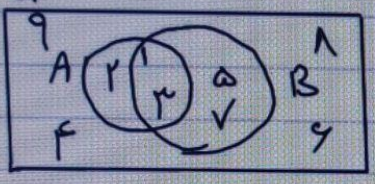
$A = \{1, 2, 3\}$ $B = \{1, 3, 5, 7\}$

U



$\{2, 2, 3\} = \{2, 3\}$

$n(A) = 3$ $n(U) = 9$ $n(B) = 4$

۱. اجتماع (union) $A \cup B = \{1, 2, 3, 5, 7\}$

۲. اشتراک (Intersection) $A \cap B = \{1, 3\}$

۳. متمم $\bar{A} = \hat{A} = A' = A^c = U - A = \{4, 5, 6, 7, 8, 9\}$
(Complement)

۴. تفاضل $A - B = \{2\}$

۵. تفاضل متقارن $A \Delta B = (A - B) \cup (B - A)$ XOR

$A \cup (B \cup C) = (A \cup B) \cup C$; $A \cap (B \cap C) = (A \cap B) \cap C$

- خاصیت جابجایی Commutative laws:

$$A \cup B = B \cup A \quad , \quad A \cap B = B \cap A$$

- خاصیت توزیع پذیری Distributive Laws:

$$A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$$

- خاصیت دمورگان Demorgan Laws:

$$\overline{A \cup B} = \bar{A} \cap \bar{B} \quad , \quad \overline{A \cap B} = \bar{A} \cup \bar{B}$$

- خاصیت متمم Compliment Laws:

$$A \cup \bar{A} = U \quad , \quad A \cap \bar{A} = \emptyset \quad , \quad \bar{\bar{A}} = A$$

- خاصیت تکراری Repetition Laws:

$$A \cup A = A \qquad A \cap A = A$$

- 0 1 Laws: $\bar{\emptyset} = U \quad , \quad \bar{U} = \emptyset$

- قوانین Identity Laws:

$A \cup \phi = A \qquad A \cap U = A$

- قوانین Bound Laws:

$A \cap \phi = \phi \qquad A \cup U = U$

* $A - B = A \cap \bar{B}$

$\overline{A - B} = \bar{A} \cup B$