Section 2.2: Set Operatrion

Example 1: Let $U = \{ a, b, c, d, e, f, g, h, i\}$ with the following subsets

$A = \{a, b, d, e\}$, $B = \{b, c, e, f, g\}$, $C = \{e, f, h, i\}$

Find the following:

a) A'

b) B'

c) $A \cup B$: The **union** of A and B is the set of all elements that are in A **or** B *(or both)*

d) $A \cap B$: The **intersection** of A and B is the set of all elements that are in A **and** B.

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

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

Example 1 Cont.: Let $U = \{ a, b, c, d, e, f, g, h, i\}$ with the following subsets

$A = \{a, b, d, e\}$, $B = \{b, c, e, f, g\}$, $C = \{e, f, h, i\}$

g) (A - B): What is in A and not in B

h) (B - A): What is in B and not in A

i) (U - A): What is U and not in A, which is the same as A'

Example 2: If $A = \{1, 2, 3\}$, $B = \{5, 6, 7\}$, $C = \{2, 4\}$

Find the following

a) $A \cup B$:

b) $A \cap B$:

c) A - B

d) A x C (**Cartesian product**)

e) C x A