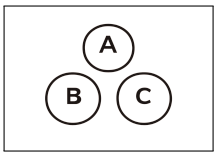
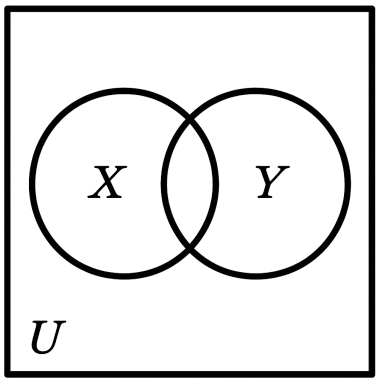
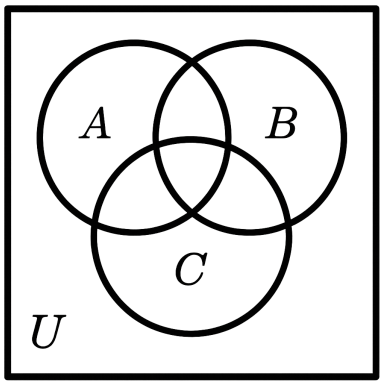
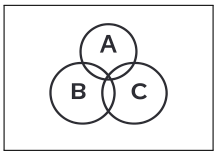
2 Discrete Distribution Set Operations H









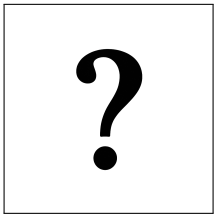
$|X \cup Y| = |X| + |Y| - |X \cap Y| = |U| - |X^C \cap Y^C|$

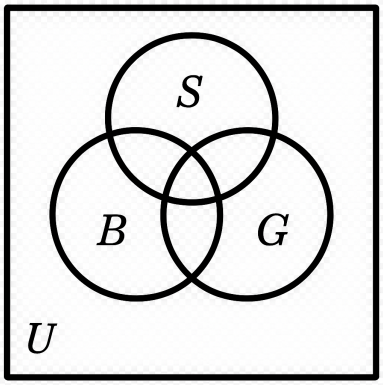
$|X \cap Y| = |X| + |Y| - |X \cup Y| = |U| - |X^C \cup Y^C|$

$|A \cup B \cup C| = |A| + |B| + |C| - |A \cap B| - |B \cap C| - |A \cap C| + |A \cap B \cap C|$

$|A \cap B \cap C| = -|A| - |B| - |C| + |A \cup B| + |B \cup C| + |A \cup C| + |A \cup B \cup C|$

$|A \cap B| = |A \cap B \cap C^c| + |A \cap B \cap C|$





$|S| = 22 : |B| = 25 : |G| = 39$

$|S \cap B| = 9$

$|S \cap G| = 17$

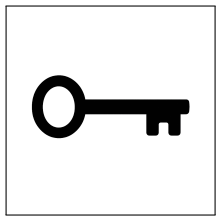
$|B \cap G| = 20$

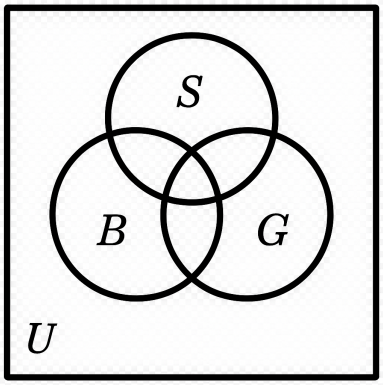
$|S \cap B \cap G| = 6$

$|(S \cup B \cup G)^C| = 4$

$|S \cup B \cup G| = ?$

2 Discrete Distribution Set Operations H





$|S| = 22$
$|B| = 25$
$|G| = 39$
$|S \cap B| = 9$
$|S \cap G| = 17$
$|B \cap G| = 20$
$|S \cap B \cap G| = 6$
$|(S \cup B \cup G)^C| = 4$
$|S \cup B \cup G| = ?$

$|U| = |S \cup B \cup G| + |(S \cup B \cup G)^C|$
$|U| = |S| + |B| + |G| + |C \cap B| + |S \cap G| + |B \cap G| - |S \cap B \cap G| + |(S \cup B \cup G)^C|$
$|U| = 22 + 25 + 39 - 9 - 17 - 20 + 6 = 86 - 46 + 6 + 4 = 50$