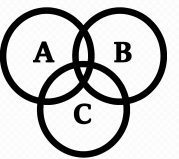
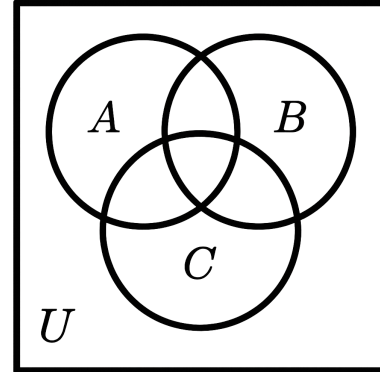
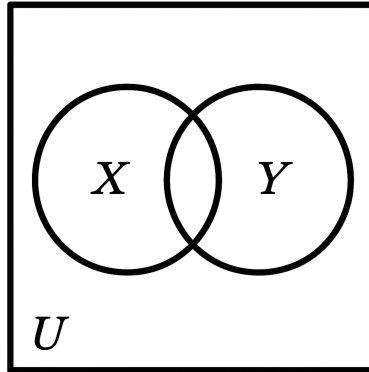
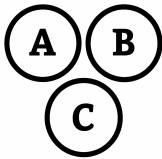


# K

## Set Operations

# K



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

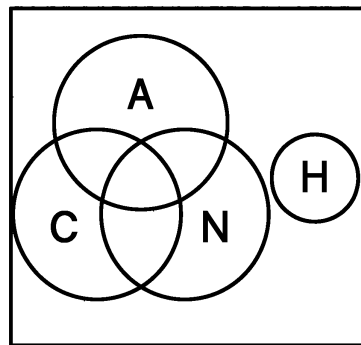
$$|X \cap Y| = |X| + |Y| - |X \cup Y| = |U| - |X^c \cup Y^c|$$

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

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

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

# ?



$$|C| = 34 : |N| = 15 : |A| = 10 : |H| = 18$$

$$|U| = 100$$

$$|C \cap N| = 7$$

$$|C \cap A| = 6$$

$$|N \cap A| = 5$$

$$|C \cap N \cap A| = 4$$

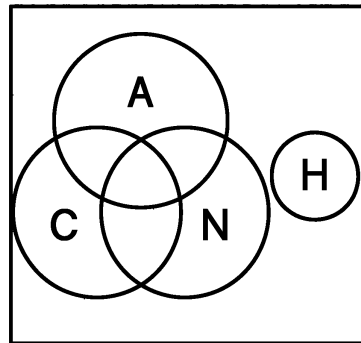
$$|H \cap (C \cup N \cup A)| = 0$$

$$|C \cap A \cap N \cap H| = ?$$

# K

## Set Operations

# K



$$|C| = 34$$

$$|N| = 15$$

$$|A| = 10$$

$$|H| = 18$$

$$|U| = 100$$

$$|C \cap N| = 7$$

$$|C \cap A| = 6$$

$$|N \cap A| = 5$$

$$|C \cap N \cap A| = 4$$

$$|H \cap (C \cup N \cup A)| = 0$$

$$|C \cap A \cap N \cap H| = ?$$

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

$$|C \cup N \cup A| = 34 + 15 + 10 - 7 - 6 - 5 + 4 = 45$$

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$$|C \cup N \cup A \cup H| = |C \cup N \cup A| + |H| = 45 + 18 = 63$$

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$$|(C \cup N \cup A \cup H)^c| = |U| - |C \cup N \cup A \cup H| = 100 - 63 = 37$$