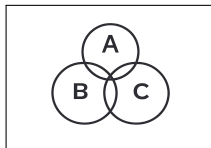
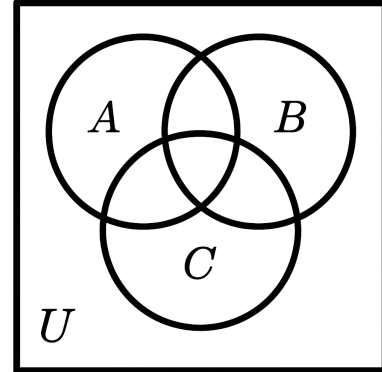
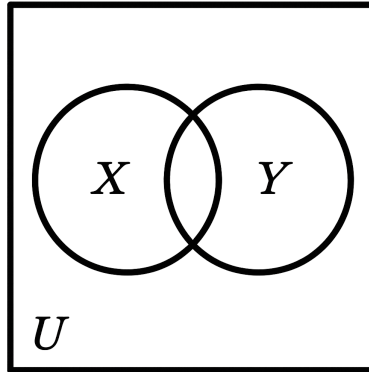
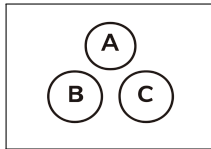


2

Discrete Distribution Set Operations

E



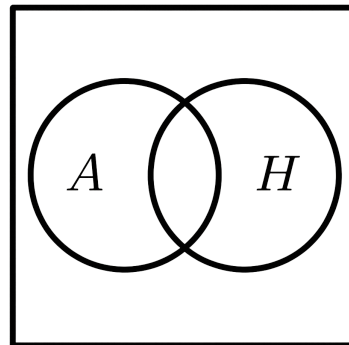
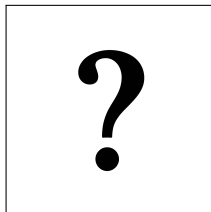
$$|X \cup Y| = |X| + |Y| - |X \cap Y| = |U| - |X^c \cap Y^c|$$

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

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

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

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

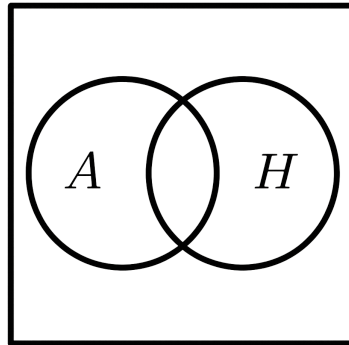
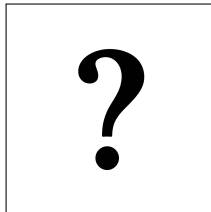


$$|A| = 60$$

$$|H| = 30$$

$$|A \cap H| = 20$$

$$A \oplus H = ?$$



$$|A| = 60$$

$$|H| = 30$$

$$|A \cap H| = 20$$

$$A \oplus H = ?$$

$$|A \cup H| = |A| + |H| - |A \cap H| = 60 + 30 - 20 = 70$$

$$A \oplus H = (A \cup H) \setminus (A \cap H) = |A \setminus H| + |H \setminus A| = |A \cup H| - |A \cap H| = 70 - 20 = 50$$