

1. Let $P = \{2, 4, 6, 8, 10\}$ and $Q = \{3, 4, 5, 6\}$.

(a) Find $P \cap Q$.

$$P \cap Q = \{4, 6\}$$

(b) Find $P \cup Q$.

$$P \cup Q = \{2, 3, 4, 5, 6, 8, 10\}$$

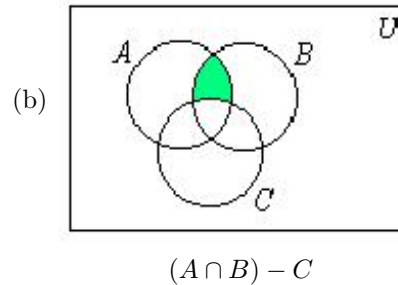
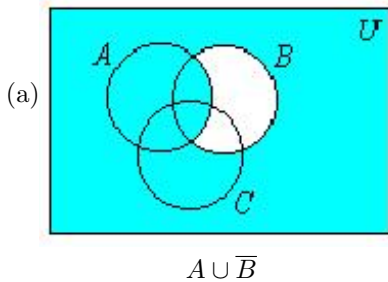
(c) Find $Q - P$.

$$Q - P = \{3, 5\}$$

(d) Find $P \times Q$.

$$P \times Q = \{(2, 3), (2, 4), (2, 5), (2, 6), (4, 3), (4, 4), (4, 5), (4, 6), \\ (6, 3), (6, 4), (6, 5), (6, 6), (8, 3), (8, 4), (8, 5), (8, 6), \\ (10, 3), (10, 4), (10, 5), (10, 6)\}$$

2. In each of the following, shade the portion of the diagram that represents the given set.



3. Identify the property illustrated by each of the following examples:

(a) $(3 + 5) + 4 = 3 + (5 + 4)$

Associative Property of Addition

(b) $7 \cdot 9 = 9 \cdot 7$

Commutative Property of Multiplication

(c) $4 \cdot (3 + 2) = 4 \cdot 3 + 4 \cdot 2$

Distributive Property