

Dr.

8 a) $A = \{-5, 0, 3, 7\}$ $A \cup B = \{-5, 0, 1, 2, 3, 7\}$
 $B = \{0, 1, 2, 5\}$ $A \cap B = \{0, 3\}$

b) $A = \{-2, 0, 5, 9\}$ $A \cup B = \{-3, -2, -1, 0, 4, 5, 7, 9\}$
 $B = \{-3, -1, 4, 7, 9\}$ $A \cap B = \{0, 7\}$

c) $A = \{x \in \mathbb{Z}, -5 < x \leq 8\} = \{-4, -3, -2, -1, \dots, 8\}$
 $B = \{x \in \mathbb{N}; x < 11\} = \{0, 1, 2, \dots, 10\}$

$$A \cup B = \{-4, -3, \dots, 10\}$$

$$A \cap B = \{1, 2, 3, \dots, 8\}$$

9 a) $A = \{-3, 1, 5\}$ ~~$A \cup B = \{-3, 1, 5, 10\}$~~ $A - B = \{-3, 5\}$
 $B = \{-1, 0, 1\}$ ~~$A \cap B = \{1\}$~~ $B - A = \{1\}$

b) $A = \{x \in \mathbb{N}; x \leq 7\} = \{1, 2, 3, \dots, 7\}$ $A - B = \{3\}$
 $B = \{x \in \mathbb{Z}; 0 \leq x < 11\} = \{0, 1, 2, \dots, 10\}$ $B - A = \{0, 8, 9, 10\}$

10 a) $A = \{5, 6, 9, 12\}$ $A \cap B = \{3, 4, 6\}$
 $B = \{-2, 0, 2, 3, 4, 6, 8, 9, 12\}$ $A \cup B = \{-2, 0, 2, 3, 4, 6, 8, 9, 12\}$
 $A - B = \{9, 12\}$
 $B - A = \{-2, 0, 2, 8\}$

$$A'_{\mathbb{N}} = \{1, 2, 5, 7, 8, 10, 11, 13, 14, \dots\}$$

$$(11) A = \{1, 2, 3, 4, 5, 6, 7\}$$

$$B = \{2, 4, 6, 8, 12\}$$

$$A \cup B = \{1, 2, 3, 4, 5, 6, 7, 8, 12\}$$

$$A \cap B = \{2, 4, 6\}$$

$$A - B = \{1, 3, 5, 7\}$$

$$B - A = \{8, 12\}$$

$$A \setminus B = \{1, 3, 5, 7\}$$