1

$(1)\Omega = \{2, 3, 4, 5, 6, 7\}$
$(2)\Omega = \{4, 5, 6, 7, 8, 9, 10\}$
$(3)\Omega = \{(t_1, t_2)|t_1, t_2 \in [0, 24)\}$
$(4)\Omega = \{0, 1, 2, ..., n\}$
$(5)\Omega = \{1000x|x = 0, 1, 2, ..., 10000\}$

2

$(1)A\bar{B}\bar{C}$
$(2)AB\bar{C}$
$(3)\bar{A}\bar{B}\bar{C}$
$(4)\overline{ABC}$
$(5)A \cup B \cup C$

3

(1)True
(2)False
(3)True
(4)True
(5)True
(6)True
(7)True
(8)False

4

$(1)\{(x, y)|0 < x \leq \frac{1}{2}, 0 \leq y \leq x\}$
$(2)\{(x, y)|0 < x \leq \frac{1}{2} \quad or \quad 0 \leq y \leq x\}$
$(3)\{(x, y)|0 < x \leq \frac{1}{2} \quad or \quad x < y \leq 1\}$
$(4)\{(x, y)|\frac{1}{2} < x \leq 1 \quad or \quad 0 \leq y \leq x\}$