1.

(1) $\Omega = \{(x,y) \mid x, y = 1,2,3,4,5,6\}$

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

$B = \{(1,1)\ (2,2)\ (3,3)\ (4,4)\ (5,5)\ (6,6)\}$

$C = \{(4,6)\ (5,5)\ (6,4)\}$

(2) $\Omega = \{(x,y,z) \mid x,y,z \in \{正,反\}\}$

$A = \{(反,正,正)\ (反\ 正\ 反)\ (反\ 反\ 正)\ (反\ 反\ 反)\}$

$B = \{(正,正,反)\ (正\ 反\ 正)\ (反\ 正\ 正)\}$

$C = \{(正\ 正\ 正)\ (反\ 反\ 反)\}$

(3) $\Omega = \{\vec{r} \mid |\vec{r}| < 1\}$

$A = \{\vec{r} \mid |\vec{r}| < \frac{1}{2}\}$ $C = \{\vec{r} \mid \frac{1}{3} < |\vec{r}| < \frac{1}{2}\}$

2. (1) $A_1\overline{A_2}\,\overline{A_3} \cup \overline{A_1}A_2\overline{A_3} \cup \overline{A_1}\,\overline{A_2}A_3$

(2) $A_1 \cup A_2 \cup A_3$

(3) $A_1 \cdot (A_2 \cup A_3)$

(4) $A_1\overline{A_2}\,\overline{A_3} \cup \overline{A_1}A_2\overline{A_3} \cup \overline{A_1}\,\overline{A_2}A_3 \cup \overline{A_1}\,\overline{A_2}\,\overline{A_3}$

3. (1) ϕ

(2) $\{0 \leq x \leq 2\}$

(3) $\{0 \leq x \leq \frac{1}{2}$ 或 $1 < x \leq 2\}$

(4) $\{\frac{1}{4} < x \leq \frac{3}{2}\}$

4. A～喜欢巧克力 B～喜欢夹心糖 C～喜欢奶糖

$|A \cup B \cup C| = 811 + 752 + 418 - 570 - 356 - 348 + 297 = 1004 > 1000$

矛盾.

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5. (1) $40\% - 15\% = 25\%$

(2) $40\% + 25\% - 15\% \times 2 = 35\%$

(3) $40\% + 25\% - 15\% = 50\%$

(4) $1 - 50\% = 50\%$