

习题:

4. (3). $(0, 1) \cup \mathbb{R} \setminus \mathbb{Q} (1)$.

$$(0, 1) = \mathbb{Q} \cap (0, 1) \cup \mathbb{I} \cap (0, 1).$$

$\mathbb{Q} \cap (0, 1) \leftrightarrow \mathbb{Z} : 0, \pm 1, \pm 2, \dots$ 則 $0 + [0, 1), \pm 1 + [0, 1), \pm 2 + [0, 1)$
覆盖所有无理数.

6. $a_0 + a_1 x + a_2 x^2 + a_3 x^3 + \dots$

$\{a_n\}$ 可列. $a_0 \in \{0, 1, -1, 2, -2, \dots\}$ 可列

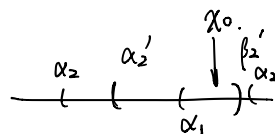
可数个可列集仍是可列集.

12. $\forall x_0 \in G_1, x_0 \in (\alpha_1, \beta_1) \subset G_1, x_0 \in (\alpha_2, \beta_2) \subset G_2$

若 $\alpha_2 > \alpha_1$, 有 $\alpha_2 \in (\alpha_1, \alpha_2), x_0 \in G_1 \subset G_2$

矛盾. 則 $\forall (\alpha_1, \beta_1) \subset G_1, (\alpha_1, \beta_1) \subset (\alpha_2, \beta_2) \subset G_2$.

(用到了一点: 构成区间有共同点 則必重合).



13.