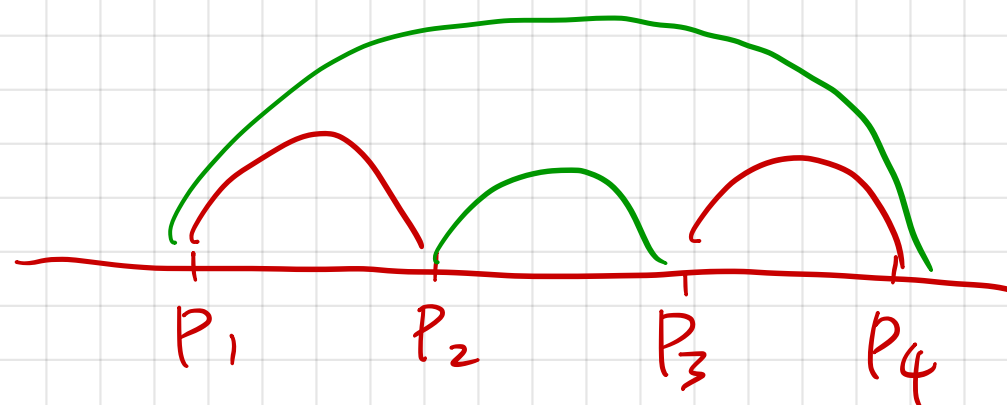


第5题.

$$P_1 > P_2 > P_3 > P_4$$

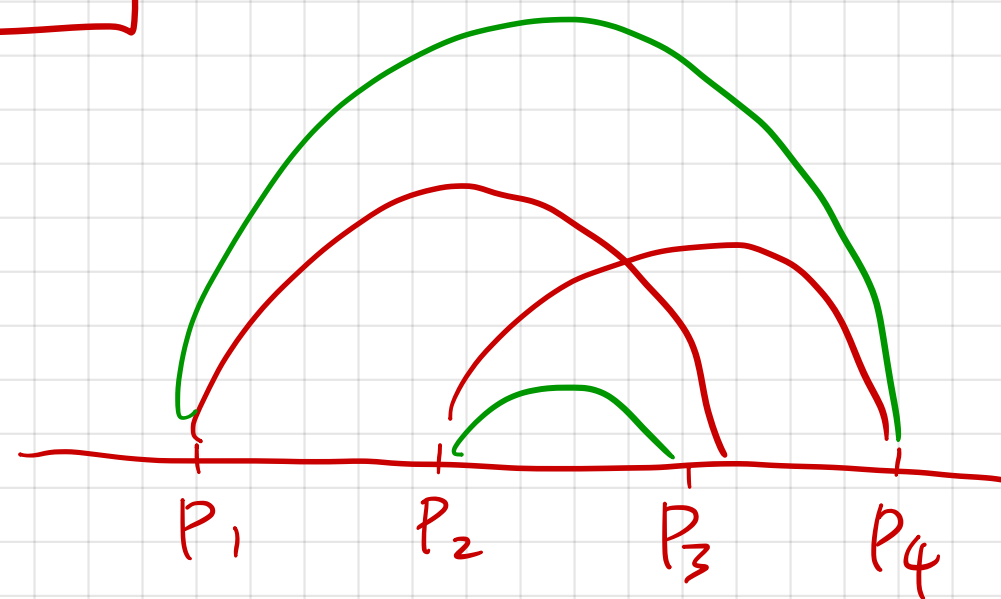


(P_1, P_2) (P_3, P_4)
 \downarrow
 (P_1, P_4) (P_3, P_2)

$(P_1, P_2) \rightarrow (P_1, P_4)$ 是可行的, 因为 $P_4 < P_2$

$(P_3, P_4) \rightarrow (P_3, P_2)$ 是可行的

, 因为 (P_1, P_2) 可行且 $P_3 < P_1$



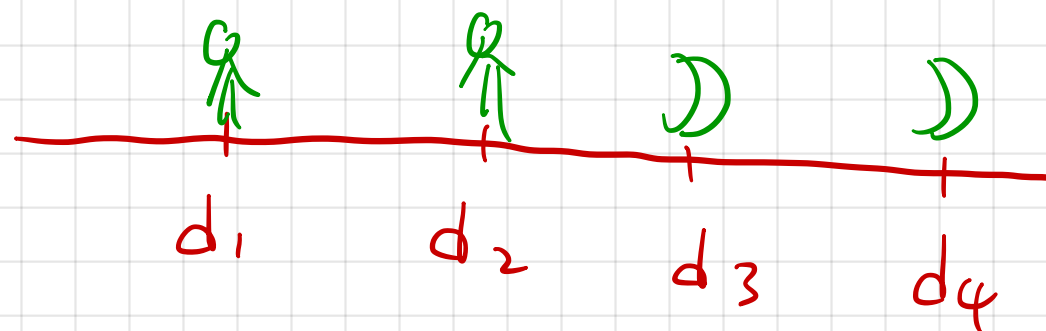
(P_1, P_3) (P_2, P_4)
 \downarrow
 (P_1, P_4) (P_2, P_3)

$(P_1, P_3) \rightarrow (P_1, P_4)$ 可行, 因为 $P_3 > P_4$,

$(P_2, P_4) \rightarrow (P_2, P_3)$ 可行, 因为

(P_1, P_3) 可行, 且 $P_1 > P_2$

第六题



$$d_1 < d_2 < d_3 < d_4$$

$$\max(|d_3 - d_1|, |d_4 - d_2|) = \max(d_3 - d_1, d_4 - d_2)$$

$$\begin{aligned} \max(|d_2 - d_3|, |d_1 - d_4|) &= \max(d_3 - d_2, d_4 - d_1) \\ &= d_4 - d_1 \geq \max(d_3 - d_1, d_4 - d_2) \end{aligned}$$

因为 $d_4 - d_1 > d_3 - d_1$

且 $d_4 - d_1 > d_4 - d_2$

其余4种情况依此类推。