

$$\text{total} \begin{cases} \bigwedge_{x \in \mathfrak{h} \ni y} x \leq y \vee x \geq y \\ \bigwedge_{x \in \mathfrak{h} \ni y} x:y \in P \vee y:x \in P \\ \mathfrak{h} \times \mathfrak{h} = P \cup \bar{P} \end{cases}$$

$$\underline{\mathfrak{h} \times \mathfrak{h}} \perp I = \underline{P \perp I} \cup \underline{\bar{P} \perp I} = \underline{P \perp I} \cup \overline{\underline{P \perp I}} \text{ disj}$$