

**Lemma.**  $\mathcal{U}\mathbf{P}$  is a bounded lattice (??) with

$$\leq_{\mathcal{U}\mathbf{P}} := \supseteq$$

$$\perp_{\mathcal{U}\mathbf{P}} := \mathbf{P}$$

$$\top_{\mathcal{U}\mathbf{P}} := \emptyset$$

$$\vee_{\mathcal{U}\mathbf{P}} := \cap$$

$$\wedge_{\mathcal{U}\mathbf{P}} := \cup.$$