

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

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

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

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

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

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