

$$\bigcap_{j \in \mathcal{J}} \mathcal{P}(A_j) = \mathcal{P}\left(\bigcap_{j \in \mathcal{J}} A_j\right) \quad , \quad \bigcup_{j \in \mathcal{J}} \mathcal{P}(A_j) \subseteq \mathcal{P}\left(\bigcup_{j \in \mathcal{J}} A_j\right)$$