

$$\begin{aligned}
&\Leftrightarrow [x]_{\theta} \cap A \neq \emptyset \vee [x]_{\theta} \cap B \neq \emptyset \\
&\Leftrightarrow x \in \theta(A) \vee x \in \theta(B) \\
&\Leftrightarrow x \in \theta(A) \cup \theta(B)
\end{aligned}$$