

Lemma. Let $f: \mathbf{P} \times \mathbf{Q} \rightarrow \mathbf{Q}$ be Scott continuous. For each $x \in \mathbf{P}$, define $f_x: y \mapsto f(x, y)$. Then $f^\dagger: x \mapsto \text{lfp}(f_x)$ is Scott continuous.