Definition (Lattice homomorphism)**.** Given two bounded lattices $\mathbf{P}$, $\mathbf{Q}$, a *lattice homomorphism* is a map $f : \mathbf{P} \to \mathbf{Q}$ which preserves meets, joins, top, and bottom:

$$f(p \wedge_{\mathbf{P}} q) = f(p) \wedge_{\mathbf{Q}} f(q)$$

$$f(p \vee_{\mathbf{P}} q) = f(p) \vee_{\mathbf{Q}} f(q)$$

$$f(\bot_{\mathbf{P}}) = \bot_{\mathbf{Q}}$$

$$f(\top_{\mathbf{P}}) = \bot_{\mathbf{Q}}$$