*homomorphism* is a map  $f: \mathbb{P} \to \mathbb{Q}$  which preserves meets, joins, top, and bottom:

**Definition** (Lattice homomorphism). Given two bounded lattices P, Q, a *lattice* 

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

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

$$f(1-) = 1$$

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