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* 

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

$$f(p \lor_{\mathbf{P}} q) = f(p) \lor_{\mathbf{Q}} f(q)$$
$$f(\bot_{\mathbf{P}}) = \bot_{\mathbf{O}}$$

 $f(\mathsf{T}_{\mathbf{P}}) = \mathsf{T}_{\mathbf{O}}$