

**Definition** (Monotone map). A *monotone map* between two posets  $\langle \mathbf{P}, \leq_{\mathbf{P}} \rangle$  and  $\langle \mathbf{Q}, \leq_{\mathbf{Q}} \rangle$  is a map that preserves the ordering, in the sense that

$$p_1 \leq_{\mathbf{P}} p_2 \quad \Rightarrow \quad f(p_1) \leq_{\mathbf{Q}} f(p_2).$$