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

$$\frac{p_1 \leq_{\mathbf{P}} p_2}{f(p_1) \leq_{\mathbf{Q}} f(p_2)}$$