Definition (Lower set). A *lower set* **L** is a subset of a poset **P** such that, if $x \in$ **L**, then all elements of **P** that are below x are also in **L**. In other words:

$$\frac{x \in \mathbf{L} \quad y \leq_{\mathbf{P}} x}{y \in \mathbf{L}}$$