Definition (Downward closed set)
An upper set $\mathbf{A}$ is *downward-closed* in a poset $\mathbf{P}$ if

$$\mathbf{A} = \uparrow \operatorname{Min} \mathbf{A}.$$

The set of downward-closed upper sets of $\mathbf{P}$ is denoted $\overline{\operatorname{UpperSets}}\,\mathbf{P}$.