Definition (Upper set)

An *upper set* $\mathbf{U}$ is a subset of a poset $\mathbf{P}$ such that, if $x \in \mathbf{U}$, then all elements of $\mathbf{P}$ that are above x are also in $\mathbf{U}$. In other words:

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