Definition (Totally ordered set). A partially ordered set $\mathbf{P} = \langle \mathbf{P}, \leq_{\mathbf{P}} \rangle$ is a *totally ordered set* if the relation $\leq_{\mathbf{P}}$ is *total*. In other words, if:

$$\frac{\top}{(p \leq_{\mathbf{P}} q) \vee (q \leq_{\mathbf{P}} p)}$$