Definition

Let $\mathbf{A}$ and $\mathbf{B}$ be sets. A *function* $f : \mathbf{A} \to \mathbf{B}$ is a subset

$$f \subseteq \mathbf{A} \times \mathbf{B}$$

with the property

$$\forall\, x \in \mathbf{A} \quad \exists!\, y \in \mathbf{B} : \ \langle x, y \rangle \in f.$$

We say that $\mathbf{A}$ is the *source* and $\mathbf{B}$ is the *target* of f.