

Source:

1 | well defined def

A function $f : X \rightarrow Y$ is a relation f from X to Y satisfying:

1. $\forall x \in X, \exists y \in Y$ s.t. $(x, y) \in f$ (every element of the domain has an image)
2. $\forall x \in X, \forall y_1, y_2 \in Y, (x, y_1), (x, y_2) \in f$

A function $f: X \rightarrow Y$ is a relation f from X to Y satisfying: i). $\forall x \in X, \exists y \in Y: (x, y) \in f$ ii). $\forall x \in X, \forall y_1, y_2 \in Y: (x, y_1), (x, y_2) \in f \implies y_1 = y_2$

A function is well defined if: