Introduction into linear algebra

Mathematical Preliminaries

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Iran University of Science and Technology, Feb 2023

Definition 1.1

Let X and Y be two non-empty sets and A and B subsets of these sets respectively; If there exists a relation $R : A \to B$ s.t. for every $a \in A$ there exists only one $b \in B$ s.t. $R(a) = b$, then R is a function from X to Y.

Definition 1.2

Let X and Y be two non-empty sets and $f : X \to Y$ be a function; If

- For every $y \in Y$ there exists $x \in X$ s.t. $f(x) = y$