Section 5.1 <u>Functions</u>

A <u>function</u> (or mapping) from A to B is a relation f from A to B such that

(i) the domain of f is A, and

(ii) if $(x, y) \in f$ and $(x, z) \in f$, then $y = z$.

We write $f : A \to B$ and this is read "f is a function from A to B," or "f maps A to B." The set B is called the codomain of f. In the case where $B = A$, we say f is a function on A.

Let $f : A \to B$. We write $y = f(x)$ when $(x, y) \in f$. We say that y is the value of f at x (or the image of f at x) and that x is a pre-image of y under f.