



FUNCTION RESTRICTIONS AND EXTENSIONS

§Why

The relationship between the inclusion map and the identity map is characteristic of making small functions out of large ones.

§Definition

Let $X \subset Y$ and $f : Y \rightarrow Z$. There is a natural function $g : X \rightarrow Z$, namely the one defined by $g(x) = f(x)$ for all $x \in X$. We call g the *restriction* of f to X . We call f an *extension* of g to Y . Clearly, there may be more than one extension of a function

§Notation

We denote the restriction of $f : Y \rightarrow Z$ to the set $X \subset Y$ by $f|X$.

§Example

A simple example is the that the inclusion mapping from X to Y with $X \subset Y$ is a restriction of the identity map on Y

