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extension of a function

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Related topic RestrictionOfAFunction

Defines extension

Let $f: X \to Y$ be a function and A and B be sets such that $X \subseteq A$ and $Y \subseteq B$. An extension of f to A is a function $g: A \to B$ such that f(x) = g(x) for all $x \in X$. Alternatively, g is an extension of f to A if f is the restriction of g to X.

Typically, functions are not arbitrarily extended. Rather, it is usually insisted upon that extensions have certain properties. Examples include analytic continuations and meromorphic extensions.