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Some definitions of the concept of a function

Johann Bernoulli (1718)

I call a function of a variable magnitude a quantity composed in any manner whatsoever from this variable magnitude and from constants.

Euler (1748)

A function of a variable quantity is an analytic expression composed in any way whatsoever of the variable quantity and numbers or constant quantities.

Euler (1775)

When quantities depend on each other in such a way that [the former] undergo changes themselves when [the latter] change, the [the former] are called functions of [the latter]. This is a very comprehensive idea which includes in itself all the ways in which one quantity can be determined by others.

Lacroix (1810)

Every quantity whose value depends on one or more quantities is called a function of these latter, whether one knows or is ignorant of what operations it is necessary to use to arrive from the latter to the first.

Fourier (1822)

In general the function $f(x)$ represents a succession of values or ordinates each of which is arbitrary. An infinity of values being given to the abscissa x , there is an equal number of ordinates $f(x)$. All have actual numerical values, either positive or negative or null. We do not suppose these ordinates to be subject to a common law; they succeed each other in any manner whatever, and each of them is given as if it were a single quantity.

Heine (1872)

A single-valued function of a variable x is an expression which for every single rational or irrational value of x is uniquely determined.

Dedekind (1888)

A function φ on a set S is a law according to which to every determinate element s of S there belongs a determinate thing which is called the transform of s and denoted $\varphi(s)$.

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