functional

Canonical name	Functional
Date of creation	2013-03-22 12:29:45
Last modified on	2013-03-22 12:29:45
Owner	mathcam (2727)
Last modified by	mathcam (2727)
Numerical id	9
Author	mathcam (2727)
Entry type	Definition
Classification	msc 03E20
Defines	linear functional

Definition A *functional* T is a function mapping a function space (often a vector space) V in to a field of scalars K, typically taken to be $\mathbb{R}$ or $\mathbb{C}$.

Discussion Examples of functionals include the integral and entropy. A functional f is often indicated by the use of brackets, $T[x]$ rather than $T(x)$.

The *linear functionals* are those functionals T that

- $T(x+y) = T(x) + T(y)$

- $T(cx) = cT(x)$

for any $c \in K$, $x, y \in V$.