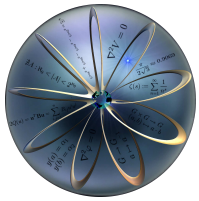

planetmath.org

Math for the people, by the people.

groupoid action

Canonical name	GroupoidAction
Date of creation	2013-03-22 19:19:23
Last modified on	2013-03-22 19:19:23
Owner	bci1 (20947)
Last modified by	bci1 (20947)
Numerical id	9
Author	bci1 (20947)
Entry type	Definition
Classification	msc 22A22
Classification	msc 18B40
Synonym	action
Related topic	GroupAction
Related topic	Groupoid
Related topic	GroupoidRepresentation4
Defines	anchor map

Definition 0.1. Let $\mathcal{G}$ be a groupoid and X a topological space. A *groupoid action*, or $\mathcal{G}$-action, on X is given by two maps: the *anchor map* $\pi : X \longrightarrow G_0$ and a map $\mu : X \times_{G_0} G_1 \longrightarrow X$, with the latter being defined on pairs (x, g) such that $\pi(x) = t(g)$, written as $\mu(x, g) = xg$. The two maps are subject to the following conditions:

- $\pi(xg) = s(g)$,
- $xu(\pi(x)) = x$, and
- $(xg)h = x(gh)$, whenever the operations are defined.

Note: The groupoid action generalizes the concept of group action in a non-trivial way.