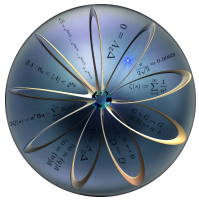

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bimodule

Canonical name	Bimodule
Date of creation	2013-03-22 12:01:18
Last modified on	2013-03-22 12:01:18
Owner	mps (409)
Last modified by	mps (409)
Numerical id	9
Author	mps (409)
Entry type	Definition
Classification	msc 16D20
Synonym	sub-bimodule
Defines	subbimodule

Let R and S be rings. An *(R,S)-bimodule* is an abelian group M which is a left module over R and a right module over S such that the $r(ms)=(rm)s$ holds for each r in R, m in M, and s in S. Equivalently, M is an (R,S)-bimodule if it is a left module over $R \otimes S^{\mathrm{op}}$ or a right module over $R^{\mathrm{op}} \otimes S$.

When M is an (R,S)-bimodule, we sometimes indicate this by writing the module as ${}_R M_S$.

If P is a subgroup of M which is also an (R,S)-bimodule, then P is an *(R,S)-subbimodule* of M.