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zero divisor

Canonical name	ZeroDivisor
Date of creation	2013-03-22 12:49:59
Last modified on	2013-03-22 12:49:59
Owner	cvalente (11260)
Last modified by	cvalente (11260)
Numerical id	9
Author	cvalente (11260)
Entry type	Definition
Classification	msc 13G05
Related topic	CancellationRing
Related topic	IntegralDomain
Related topic	Unity
Defines	left zero divisor
Defines	right zero divisor
Defines	regular element

Let a be a nonzero element of a ring R.

The element a is a *left zero divisor* if there exists a nonzero element $b \in R$ such that $a \cdot b = 0$. Similarly, a is a *right zero divisor* if there exists a nonzero element $c \in R$ such that $c \cdot a = 0$.

The element a is said to be a *zero divisor* if it is both a left and right zero divisor. A nonzero element $a \in R$ is said to be a *regular element* if it is neither a left nor a right zero divisor.

Example: Let $R = \mathbb{Z}_6$. Then the elements 2 and 3 are zero divisors, since $2 \cdot 3 \equiv 6 \equiv 0 \pmod{6}$.