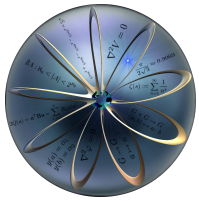

planetmath.org

Math for the people, by the people.

distributivity

Canonical name	Distributivity
Date of creation	2013-03-22 13:47:00
Last modified on	2013-03-22 13:47:00
Owner	yark (2760)
Last modified by	yark (2760)
Numerical id	15
Author	yark (2760)
Entry type	Definition
Classification	msc 06D99
Classification	msc 16-00
Classification	msc 13-00
Classification	msc 17-00
Synonym	distributive law
Synonym	distributive property
Related topic	Ring
Related topic	DistributiveLattice
Related topic	NearRing
Defines	distributive
Defines	left distributive
Defines	right distributive
Defines	left-distributive
Defines	right-distributive
Defines	distributes over
Defines	left distributivity
Defines	right distributivity
Defines	left distributes over
Defines	left distributive law
Defines	right distributive law

Given a http://planetmath.org/Setset S with two binary operations $+\colon S \times S \to S$ and $\cdot\colon S \times S \to S$, we say that $\cdot$ is *right distributive* over $+$ if

$$(a + b) \cdot c = (a \cdot c) + (b \cdot c) \text{ for all } a, b, c \in S$$

and *left distributive* over $+$ if

$$a \cdot (b + c) = (a \cdot b) + (a \cdot c) \text{ for all } a, b, c \in S.$$

If $\cdot$ is both left and right distributive over $+$, then it is said to be *distributive* over $+$ (or, alternatively, we may say that $\cdot$ *distributes over* $+$).