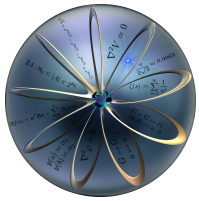

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semifield

Canonical name	Semifield
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There are different definitions of *semifield*. We give three such which are not `http://planetmath.org/Biconditional`equivalent.

Let K be a set with two binary operations "$+$" and "$\cdot$".

- Semifield $(K, +, \cdot)$ is a semiring where all non-zero elements have a multiplicative inverse.
- Semifield is the algebraic system $(K, +, \cdot)$, where $(K, +)$ is a group (identity $:= 0$), the multiplication "$\cdot$" distributes over the addition "$+$", K the multiplicative identity $:= 1$ and all equations $ax = b$ and $ya = b$ with $a \neq 0$ have solutions x, y in K.
- Semifield $(K, +, \cdot)$ satisfies all postulates of field except the associativity of the multiplication "$\cdot$".