Commutative lattice-ordered rings edit

Abbreviation: CLRng

Definition 1. A *commutative lattice-ordered ring* is a lattice-ordered ring $\mathbf{A} = \langle A, \vee, \wedge, +, -, 0, \cdot\rangle$ such that

$\cdot$ is *commutative*: $xy = yx$

Remark: This is a template. If you know something about this class, click on the "Edit text of this page" link at the bottom and fill out this page.

It is not unusual to give several (equivalent) definitions. Ideally, one of the definitions would give an irredundant axiomatization that does not refer to other classes.

Morphisms. Let $\mathbf{A}$ and $\mathbf{B}$ be commutative lattice-ordered rings. A morphism from $\mathbf{A}$ to $\mathbf{B}$ is a function $h : A \to B$ that is a homomorphism: $h(x \vee y) = h(x) \vee h(y)$, $h(x \wedge y) = h(x) \wedge h(y)$, $h(x + y) = h(x) + h(y)$, $h(x \cdot y) = h(x) \cdot h(y)$.

Definition 2. A ... is a structure $\mathbf{A} = \langle A, ...\rangle$ of type $\langle ...\rangle$ such that

... is ...: *axiom*

... is ...: *axiom*

Basic Results.

Examples.

1.

Finite Members. All nontrivial members are infinite.

Subclasses.

Commutative f-rings subvariety

Superclasses.

Lattice-ordered rings supervariety

Abelian lattice-ordered groups subreduct

Commutative rings subreduct

References

[1] F. Lastname, *Title*, Journal, **1**, 23–45 MRreview

Properties. (description)
Feel free to add or delete properties from this list. The list below may contain properties that are not relevant to the class that is being described.

Classtype	(value, see description) [?]
Equational theory	
Quasiequational theory	
First-order theory	
Locally finite	
Residual size	
Congruence distributive	yes
Congruence modular	yes
Congruence n-permutable	yes, $n = 2$
Congruence regular	yes
Congruence uniform	yes
Congruence extension property	
Definable principal congruences	
Equationally def. pr. cong.	
Amalgamation property	
Strong amalgamation property	
Epimorphisms are surjective	