

# Commutative ordered rings edit

**Abbreviation:** CORng

**Definition 1.** A *commutative ordered ring* is an ordered ring  $\mathbf{A} = \langle A, +, -, 0, \cdot, \leq \rangle$  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 ... . A morphism from  $\mathbf{A}$  to  $\mathbf{B}$  is a function  $h : A \rightarrow B$  that is a orderpreserving homomorphism:  $h(x+y) = h(x)+h(y)$ ,  $h(x \cdot y) = h(x) \cdot h(y)$ , and  $x \leq y \implies h(x) \leq h(y)$ .

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

... is ...: *axiom*

... is ...: *axiom*

**Basic Results.**

**Examples.**

1.

**Finite Members.**  $f(n)$  = number of members of size  $n$ .

$$\begin{array}{ll} f(1) = 1 & f(6) = \\ f(2) = & f(7) = \\ f(3) = & f(8) = \\ f(4) = & f(9) = \\ f(5) = & f(10) = \end{array}$$

**Subclasses.**

Ordered fields expansion

**Superclasses.**

Ordered rings supervariety

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         |                              |
| Congruence modular              |                              |
| Congruence $n$ -permutable      |                              |
| Congruence regular              |                              |
| Congruence uniform              |                              |
| Congruence extension property   |                              |
| Definable principal congruences |                              |
| Equationally def. pr. cong.     |                              |
| Amalgamation property           |                              |
| Strong amalgamation property    |                              |
| Epimorphisms are surjective     |                              |