

Cancellative semigroups [edit](#)

Abbreviation: CanSgrp

Definition 1. A *cancellative semigroup* is a semigroup $\mathbf{S} = \langle S, \cdot \rangle$ such that

\cdot is left cancellative: $z \cdot x = z \cdot y \implies x = y$

\cdot is right cancellative: $x \cdot z = y \cdot z \implies x = y$

Morphisms. Let \mathbf{S} and \mathbf{T} be cancellative semigroups. A morphism from \mathbf{S} to \mathbf{T} is a function $h : S \rightarrow T$ that is a homomorphism:

$$h(xy) = h(x)h(y)$$

Basic Results.

Examples.

1. $\langle \mathbb{N}, + \rangle$, the natural numbers, with addition.

Properties. (description)

Classtype	quasivariety
Equational theory	
Quasiequational theory	
First-order theory	
Locally finite	no
Residual size	
Congruence distributive	no
Congruence modular	no
Congruence n-permutable	no
Congruence regular	no
Congruence uniform	no
Congruence extension property	
Definable principal congruences	
Equationally def. pr. cong.	no
Amalgamation property	no
Strong amalgamation property	no
Epimorphisms are surjective	no

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

$$f(1) = 1$$

$$f(2) =$$

$$f(3) =$$

$$f(4) =$$

$$f(5) =$$

$$f(6) =$$

$$f(7) =$$

Subclasses.

Cancellative monoids

Superclasses.

Semigroups

REFERENCES

[1]