

## Bands [edit](#)

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

$\cdot$  is idempotent:  $x \cdot x = x$ .

**Morphisms.** Let  $\mathbf{B}$  and  $\mathbf{C}$  be bands. A morphism from  $\mathbf{B}$  to  $\mathbf{C}$  is a function  $h : B \rightarrow C$  that is a homomorphism:  $h(xy) = h(x)h(y)$

**Basic Results.**

**Examples.**

**Properties.** (description)

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

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

|          |       |
|----------|-------|
| $f(1) =$ | 1     |
| $f(2) =$ | 3     |
| $f(3) =$ | 10    |
| $f(4) =$ | 46    |
| $f(5) =$ | 251   |
| $f(6) =$ | 1682  |
| $f(7) =$ | 13213 |

<http://www.research.att.com/projects/OEIS?Anum=A058112>

**Subclasses.**

Rectangular bands

Semilattices

**Superclasses.**

Semigroups

## REFERENCES

[1]