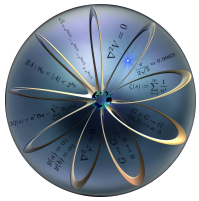

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center of a lattice

Canonical name	CenterOfALattice
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Entry type	Definition
Classification	msc 06B05
Defines	central element

Let L be a bounded lattice. An element $a \in L$ is said to be *central* if a is `http://planetmath.org/ComplementedLattice`complemented and `http://planetmath.org/SpecialElementsInALattice`neutral. The *center* of L, denoted $\mathrm{Cen}(L)$, is the set of all central elements of L.

Remarks.

- 0 and 1 are central: they are complements of one another, both distributive and dually distributive, and satisfying the property

  $$a \wedge b = a \wedge c \text{ and } a \vee b = a \vee c \text{ imply } b = c \text{ for all } b, c \in L$$

  where $a \in \{0, 1\}$, and therefore neutral.

- $\mathrm{Cen}(L)$ is a sublattice of L.

- $\mathrm{Cen}(L)$ is a Boolean algebra.

References

[1] G. Grätzer, *General Lattice Theory*, 2nd Edition, Birkhäuser (1998).