

P-categorical equivalence of lattices

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Two algebras A and B are called *categorically equivalent*, if there is a categorical equivalence between the varieties they generate that maps A to B . We denote by A^+ the algebra obtained from an algebra A by adding to its fundamental operations all nullary operations on A . We will call algebras A and B *p-categorically equivalent* if A^+ and B^+ are categorically equivalent.

Categorical equivalence of lattices is quite trivial: two lattices are categorically equivalent iff they are isomorphic.

This is not the case with p-categorical equivalence; there are non-trivial examples of p-categorically equivalent lattices. The following holds: p-categorically equivalent lattices have isomorphic lattices of tolerances. The converse is true for lattices whose tolerances are congruences.