DEFINABLE SETS IN GENERIC STRUCTURES AND THEIR CARDINALITIES

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Analyzing diagrams forming generative classes, we describe definable sets and their links in generic structures as well as cardinality bounds for these definable sets, finite or infinite. Introducing basic characteristics for definable sets in generic structures, we compare them each others and with cardinalities of these sets. We introduce calculi for (type-)definable sets allowing to compare their cardinalities. In terms of these calculi, Trichotomy Theorem for possibilities comparing cardinalities of definable sets is proved. Using these calculi, we characterize the possibility to construct a generic structure of a given generative class.

Key words and phrases: definable set, generic structure, cardinality of set, generative class, calculus for definable sets.

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