

# Comparing classes of structures

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Vector spaces over the rationals are determined by their dimension. Linear orders, even countable ones, are so diverse that we do not attempt to classify them. Countable equivalence structures lie somewhere in between. We would like concrete ways to compare classes of countable structures and say that one is more difficult to classify. In mathematical logic, there are different approaches. One approach is to look at cardinality, up to isomorphism. Descriptive set theorists developed a finer approach—they look at “Borel cardinality”. The approach that my students and I have developed involves “effective cardinality”.