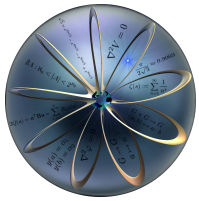

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topological invariant

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A *topological invariant* of a space X is a property that depends only on the topology of the space, i.e. it is shared by any topological space homeomorphic to X. Common examples include `http://planetmath.org/Compact`compactness, `http://planetmath.org/ConnectedSpace`connectedness, `http://planetmath.org/T2SpaceHaus` Euler characteristic, `http://planetmath.org/Orientation2`orientability, `http://planetmath.or` and like homology, homotopy groups, and K-theory.

Properties of a space depending on an extra structure such as a metric (i.e. volume, curvature, symplectic invariants) typically are not topological invariants, though sometimes there are useful interpretations of topological invariants which seem to depend on extra information like a metric (for example, the Gauss-Bonnet theorem).