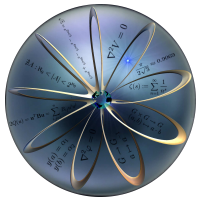

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zero dimensional

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Definition 1. *[?, ?] Suppose X is a topological space. If X has a basis consising of clopen sets, then X is said to be .*

Examples of zero-dimensional spaces are: the set $\mathbb{Q}$ of rational numbers (with subspace topology induced from the usual metric topology on $\mathbb{R}$, the set of real numbers), the Cantor space, as well as the Sorgenfrey line.

The concepts of zero-dimentionality and total disconnectedness are closely related. Indeed, every zero-dimentional `http://planetmath.org/T1Space`T_1 space is totally disconnected. Furthermore, if a topological space is locally compact and Hausdorff, then the notions of zero-dimentionality and total disconnectedness are equivalent.

References

[1] L.A. Steen, J.A.Seebach, Jr., *Counterexamples in topology*, Holt, Rinehart and Winston, Inc., 1970.

[2] S. Willard, *General Topology*, Addison-Wesley, Publishing Company, 1970.