



Math for the people, by the people.

uniform base

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Let  $X$  be a Hausdorff topological space. A basis for  $X$  is said to be a *uniform base* if for all  $x \in X$  and every neighborhood  $U$  of  $x$ , only a finite number of the basis sets containing  $x$  intersect the complement of  $U$ .

For example, in any metric space, the open balls of radius  $\frac{1}{n}$  form a uniform base of  $X$ .

Any uniform base of  $X$  is a point countable base.

## References

- [1] Steen, Lynn Arthur and Seebach, J. Arthur, *Counterexamples in Topology*, Dover Books, 1995.