

Definitions and Theorems

Definition (Compactness)

A topological space X is *compact* if every open cover of X has a finite subcover.

Definition (Paracompactness)

A topological space X is *paracompact* if every open cover of X admits an open locally finite refinement that also covers X .

Theorem (Heine–Borel Theorem)

A subset of \mathbb{R}^n is compact if and only if it is closed and bounded.