# Outline of Topology

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**Metric Spaces**

Real Line
Least Upper Bound Principle
Archimedes Principle
Bolzano-Weierstrass Theorem
Decimal Representation
Countability
Uncountability
Power set
Rational numbers
Algebraic numbers
Cantor diagonal argument
Open set
Closed set
Closure of a set
Convergence
Continuity
Connectedness
Interval
Sharkovsky theorem
Markov graphs
Counting periodic points
Chain connectedness theorem
Connected open subset of $\mathbb{R}^n$ is arcwise connected
Cantor set
Map of Cantor set onto interval
Map of Cantor set onto $[0,1]^n$
Map of $[0,1]$ onto $[0,1]^n$
Sequential compactness
Uniform continuity
Nested intersection of compact connected sets
Dyadic solenoid
Homeomorphism
Embedding
Equivalent metrics
Product metric
Quotient space
Contraction Mapping Theoerem
Baire Category Theorem

**General Topological spaces**

Topology
Base for a topology
Hausdorff
Normal
Urysohn Lemma
The M-test
Uniform convergence of functions
Uniform convergence of continuous functions is continuous
Tietze Extension Theorem
Urysohn metrization theorem
Compactness
Finite Intersection Property
Compact Hausdorff is normal
Baire Category for compact Hausdorff
Sorgenfrey line
Compact subsets of Sorgenfrey line
Product space, infinite product space
Quotient spaces
Cone of a space
Cone of the integers
Mapping cylinder
Mapping torus