

四川师范大学数学与软件科学学院数学与应用数学专业
2005—2006 学年度第二学期期末考试

《拓扑学》试卷一

答卷说明：本试卷共 4 页，5 个大题，满分 100 分，120 分钟完卷。

题号	一	二	三	四	五	总分	总分人
分数							

得分	评卷人

一. (15 points) Assume \mathbb{R} with the standard topology. Is the set $\{1/n: n=1,2,\dots\}$ open in \mathbb{R} ? Is the set closed in \mathbb{R} ? Give your reasons.

学院_____级_____班_____姓名_____学号_____

(密).....(线).....(封).....内.....答.....题.....无.....效

得分	评卷人

- 二. (15 points) Let Y be a subspace of a topological space X and $K \subset Y$. Show that the topology K inherits as a subspace of Y is the same as the topology K inherits as a subspace of X .

得分	评卷人

- 三. (20 points) Let f be a continuous map from a topological space X to a topological space Y . Prove that if X is connected, then $f(X)$ is connected in Y .

得分	评卷人

五. (20 points) Let Y be a subspace of a Hausdorff topological space X and x be not in Y . Prove that if Y is compact, then there exist disjoint open sets U and V such that $x \in U$ and $Y \subset V$.