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Problems I and my students couldn't solve

by

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PROBLEMS I AND MY STUDENTS COULDN'T SOLVE

FRANKLIN D. TALL

This paper is dedicated to the memory of Gary Gruenhage

Abstract. Here is a selection of problems in set-theoretic topology which I think are interesting, important, and which I and/or my students tried and failed to solve.

1. Generalized Souslin Hypothesis

The usual formulation of a *Generalized Souslin Hypothesis* says that cellularity = density for linear orders. It is unclear how to achieve the general positive case. Of course, counterexamples are easy to construct in L. Rather than generalizing "countable" to a regular cardinal κ, it is plausible to generalize it to "σ-discrete". After all, that was a fruitful endeavour in Bing's formulation of a general metrization theorem [9]. With this in mind, in [47] we formulated a σ-discrete version of a Generalized Souslin Hypothesis. This turned out to be equivalent to a number of previously posed problems and we proved some consistency results, but whether the full version is consistent remains open.

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