Do not open this notebook until instructed.

MAT 327 Introduction to Topology

Term Test

University of Toronto, October 16, 2024

Solve all 5 problems on this booklet.
The problems are of equal weight.
You have an hour and fifty minutes to write this test.

Notes

- No outside material allowed other than stationery, minimal hydration and snacks, and stuffed animals.
- Write your solution of each problem on the problem page and on the back of the problem page. If you run out of space you may continue into the scratch pages, but you **must** indicate this on the problem page or else the scratch pages will not be read.
- **Neatness counts! Language counts!** The *ideal* written solution to a problem looks like a page from a textbook; neat and clean and consisting of complete and grammatical sentences. Definitely phrases like "there exists" or "for every" cannot be skipped. Lectures are mostly made of spoken words, and so the blackboard part of proofs given during lectures often omits or shortens key phrases. The ideal written solution to a problem does not do that.

Good Luck!

Scratch work — this page will not be read unless you explicitly request it.

Solve all 5 problems. Write your solutions only where indicated, or write explicitly, “continued on page *X*”.
Neatness counts! Language counts!

Problem 1.

Your solution of Problem 1.

Your solution of Problem 1, continued.

Solve all 5 problems. Write your solutions only where indicated, or write explicitly, “continued on page *X*”.
Neatness counts! Language counts!

Problem 2.

Your solution of Problem 2.

Your solution of Problem 2, continued.

Solve all 5 problems. Write your solutions only where indicated, or write explicitly, “continued on page *X*”.
Neatness counts! Language counts!

Problem 3.

Your solution of Problem 3.

Your solution of Problem 3, continued.

Solve all 5 problems. Write your solutions only where indicated, or write explicitly, “continued on page *X*”.
Neatness counts! Language counts!

Problem 4.

Your solution of Problem 4.

Your solution of Problem 4, continued.

Solve all 5 problems. Write your solutions only where indicated, or write explicitly, “continued on page *X*”.
Neatness counts! Language counts!

Problem 5.

Your solution of Problem 5.

Your solution of Problem 5, continued.

Scratch work — this page will not be read unless you explicitly request it.

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