A Sample Thesis in Mathematics

BY

YOUR NAME AS IT APPEARS ON YOUR EXAM REPORT

THESIS [PhD candidates may use DISSERTATION here instead]

Submitted as partial fulfillment of the requirements
for the degree of DEGREE in OFFICIAL PROGRAM NAME
in the Graudate College of the
University of Illinois Chicago, YEAR

Defense Committee:
Name, Chair, Advisor
Name
Name
Name, Outside Members Need Affiliation Here

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Dedication

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Acknowledgements

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Preface

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Contents

List of Figures

List of Tables

List of Abbreviations

Summary

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CHAPTER 1

Introduction

This is the introduction chapter. We cite some classic works [**1, 2**].

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THEOREM 1.1. *This is a theorem*

We reference Theorem 1.1.

University of Illinois Chicago.

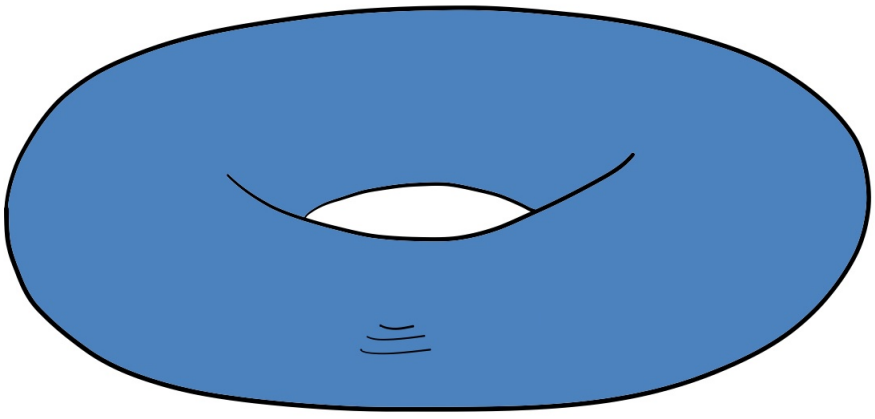

FIGURE 1. This is a torus

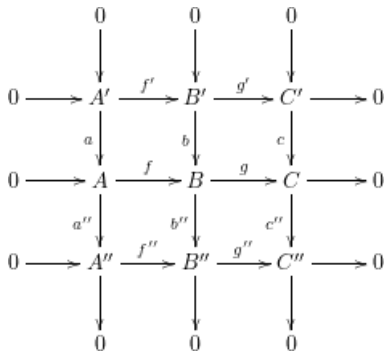

FIGURE 2. The Snake Lemma

1. Motivation

1.1. Historical context. A brief overview of how the problem developed.

$$\int_0^1 f(x)dx = 2 \tag{1}$$

How to solve (1)

1.2. Open questions. Some questions remain open for future work.

Note: I have not tested the accessibility of this table.

Monkeys	Lions
100	200

TABLE 1. Example Table

CHAPTER 2

Background

This chapter gives necessary background.

1. Group theory

DEFINITION 2.1. A group is a set G with a binary operation satisfying closure, associativity, identity, and inverses.

THEOREM 2.2. *Every finite subgroup of the multiplicative group of a field is cyclic.*

PROOF. This is a standard result from algebra. □

CHAPTER 3

Main Results

Here we present the main contributions of the thesis.

1. A computer simulation

```
def factorial(n):
    """Compute the factorial of n recursively."""
    if n == 0:
        return 1
    else:
        return n * factorial(n - 1)

print(f"5! = {factorial(5)}")
```

2. Second main result

Another significant theorem.

APPENDIX A

Technical Lemmas

Here we collect some supporting lemmas.

Bibliography

[1] R. Hartshorne, *Algebraic Geometry*, Springer-Verlag, New York, 1977.
[2] D. Mumford, *Abelian Varieties*, Oxford University Press, 1970.
[3] J. Draisma, E. Horobet, G. Ottaviani, B. Sturmfels, and R. R. Thomas, "The Euclidean distance degree of an algebraic variety," *arXiv:1309.0049* (2013). Available at: https://arxiv.org/abs/1309.0049