



UNIVERSITY OF
LEICESTER

PUT THE TITLE OF THE THESIS HERE
WITH A SECOND LINE IF IT IS VERY LONG

Thesis submitted at the University of Leicester
in partial fulfilment of the requirements for
the degree of Master of Mathematics

by

Candidate's Full Name
Department of Mathematics
University of Leicester

Month and Year of Submission

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Declaration

All sentences or passages quoted in this project dissertation from other people's work have been specifically acknowledged by clear cross referencing to author, work and page(s). I understand that failure to do this amounts to plagiarism and will be considered grounds for failure in this module and the degree examination as a whole.

Name:

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Abstract

A summary of the thesis in about 200 words.

Introduction

In this thesis we consider the work of Gauss [2, Chapter 2] and Hilbert [4] on the subject of the title.

Gauss's work

We will discuss Gauss's work in Chapter 1.

Hilbert's work

We will discuss Hilbert's work in Chapter 2.

Chapter 1

Results of Gauss

In [2] Gauss proved the following very important result.

Theorem 1.1. *[2, Theorem A] Some very profound result.*

Later on in Chapter 2 we will have more to say about Theorem 1.1.

1.1 Gauss's youthful work

1.2 Gauss's mature work

Chapter 2

Results of Hilbert

In [4] Hilbert considered these questions from a more abstract point of view. He proved the following result.

Theorem 2.1. *[4] Some even more profound result.*

In Chapter 1 a special case of Theorem 2.1 was proved. We can prove an even more general result.

Theorem 2.2. *An extremely profound result.*

Proof. As any fool can plainly see, it's true!

□

Appendix 1: Lyx

LyX (together with MikTeX) can be downloaded from www.lyx.org. After you install LyX, the first thing you need to do is to click Help and read Tutorial. You will not be able to use LyX without that. Some hints:

- Press Ctrl-R to make and view pdf.
- LyX is based on the principle that “What You See Is What You *Mean*.” You type what you mean, and LyX will take care of typesetting it for you, so that the output looks nice. A Return grammatically separates paragraphs, and a Space grammatically separates words.
- The Environment choice box is located on the left end of the toolbar (the choice box below “File Edit View”). It indicates in which environment you are currently writing. “Standard” is the default environment for text. Use “Theorem” to write statement of a theorem, “Proof” for proof, etc.
- Use Insert▷Label to label your theorems and Insert▷Cross Reference to insert a reference to a particular theorem. The theorems, lemmas, definitions, etc will be numbered automatically. Use Insert▷Citation to refer to an item in the Bibliography. Use Ctrl-M to enter Maths mode and Space (or Esc) to leave the formula. Use the arrow keys to navigate inside the formula. Use `_` to enter indices (subscripts) and `^` for superscripts. You can also use L^AT_EX commands in Maths mode (e.g. `\sqrt`, `\sin`, `\cup`, etc).
- Use Ctrl-L to enter L^AT_EX code directly in the text if necessary (it will appear in a red box).

Example of a simple math formula: $a^2 + b^3 = \sin x + \sqrt{\alpha}$; and with Maths Macros defined above: $F = \varinjlim F_\alpha$; $K = \text{Ker } \varphi$; $\int_a^b \sin x^2 dx$.

Displayed math formula:

$$\sum_{n=0}^{\infty} \Gamma_n x^n \geq \int_a^b \left(\frac{\gamma \cdot \omega(y)}{\lim_{x \rightarrow 0} f(x)} \right) dy$$

and a numbered one:

$$a^2 + b^2 = c^2 \tag{2.1}$$

Use Insert-> Cross Reference to insert a reference to it. Equation (2.1) is widely known.

Appendix 2: Referencing

The numeric style of referencing is a standard method used in Mathematics and is explained below.

Papers are usually referenced following examples [1], [3] and [4], with items listed in alphabetical order of (first) author. The authors should either be given as “Last name, Initial.” or as “Initial. Last name”. It is important that you choose one method and are consistent. In Mathematics, where there is more than one author on a paper, the author names are generally given in alphabetical order. However, other subjects may vary and you should always check and write the authors in the order given on the published paper. Each journal has an official short name or abbreviation; in the case of the Glasgow Mathematical Journal for [3], the official abbreviation is “Glasgow Math. J.”. It is advisable to check the referencing of a paper on MathSciNet or the journal’s homepage to ensure it is referenced correctly. It is usual that the title of the paper is in normal font, the journal is in *italics*, the journal volume in **bold**, and the year in parentheses (2014). Note that there are other conventions operated by some journals, for example, that the title of the paper is in *italics*, and the journal title is in normal font. Whichever convention your supervisor uses and thus recommends you to use, make sure that ALL your references are consistent, and that spaces, accents and punctuation are correctly inserted.

Referencing for a book [5] is slightly different. Here the title is in *italics*, and the publisher and place of publication need to be provided. To cite a chapter in the book, for example Chapter 3, you would insert [5, Chapter 3] in the text.

Bibliography

- [1] Cvitanović, P., Davidchack, R. L. and Siminos, E., On the state space geometry of the Kuramoto-Sivashinsky flow in a periodic domain, *SIAM J. Appl. Dyn. Syst.* **9** (2010), 1—33.
- [2] Gauss, C.F., *Disquisitiones Arithmeticae*, Fleischer, Leipzig, 1801.
- [3] Green, E. L., Schroll, S. and Snashall, N., Group actions and coverings of Brauer graph algebras, *Glasgow Math. J.* **56** (2014), 439–464.
- [4] Hilbert, D., Über ternäre definite Formen, *Acta Math.* **17** (1893), 169–197.
- [5] McCullagh, P. and Nelder, J. A., *Generalized linear models, Second edition*, Monographs on Statistics and Applied Probability, Chapman & Hall, London, 1989.