

SENIOR THESIS IN MATHEMATICS

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**Absolutely Fascinating Thesis  
Title**

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## **Abstract**

In this paper we don't really do much. However, there are a lot of *real* theorems that still need to be proved. That is what you will probably do in your thesis.

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# Chapter 1

## Boring Title for the First Chapter

Let us do some math:

$$\Delta(h) = h_{(1)} \otimes h_{(2)}$$

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Here is how you declare a theorem:

**Theorem 1.1** *A Big Fat Theorem. We assert that the following is true:*

$$x = 1, y = 1 \Rightarrow x + y = 2 \tag{1.1}$$

Let us first consider:

**Lemma 1.2** *A Small but Important Lemma. If  $x = a$ , and  $y = b$ , then  $x + y = a + b$ .*

We can then see that Lemma 1.2 implies Theorem 1.1 by letting  $a = 1$  and  $b = 1$  in Equation (1.1). See how we refer to a previously labeled item in the text?

### 1.1 A delightful new section

Some text for the section should go here. And let us look at footnotes.<sup>1 2</sup>

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<sup>1</sup>This is one way to use a footnote.

<sup>2</sup>Here is a second way to introduce a footnote

**Theorem 1.3** *hmmm*

Here is how you call the proof environment:

**Proof** hmmm

■

# Chapter 2

## Cooler Title for the Second Chapter

As we saw in Chapter 1, everything can be made to be complicated. (See, for example, Figure 2.1.) This is usually not a good idea unless you want to lose your audience.

Most importantly, **NEVER DIVIDE BY ZERO** unless, of course, you are wearing your protective divide-by-zero suit (See [1] for the terrible consequences which might result. And this is how you cite multiple references: [1, 2, 3]. And if you wanted to, you could refer to specific pages: [4, pages 567–569]).

### 2.1 Another fascinating section

Some text needs to go here.

#### 2.1.1 And sometimes you will need subsections...

More text goes here.

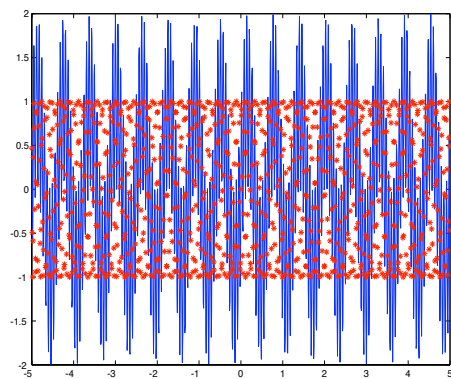


Figure 2.1: Graphics can really snaz it up!

# Bibliography

- [1] Abe, Eiichi; Hopf algebras, Cambridge Tracts in Mathematics, **74**, Cambridge University Press, Cambridge-New York, 1980.
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- [3] Böhm, Gabriella; “*An alternative notion of Hopf algebroid*”, Hopf algebras in noncommutative geometry and physics, Lecture Notes in Pure and Appl. Math. **239**, Dekker, New York, 2005, pp.31–53.
- [4] Böhm, Gabriella; “*Integral theory for Hopf algebroids*”, Algebr. Represent. Theory **8** (2005), no. 4, pp.563–599.