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Thesis Title

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science at Virginia Commonwealth University.

by

Your Name
Master of Science

Director: Your Advisor, Associate Professor
Department of Mathematics and Applied Mathematics

Virginia Commonwealth University
Richmond, Virginia
April 2015

Acknowledgements

I want to thank my two daughters, who share my passion for making art projects with office supplies.

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Abstract

This is a LaTeXthesis template for the Department of Mathematics and Applied Mathematics at Virginia Commonwealth University. If you use it, you would insert the abstract to your thesis here.

But to begin, you should just typeset this to see what you get. In addition to the main file `ThesisTemplate.tex` you will need (in the same directory) the file `ETDApprovalForm.pdf` and the "dummy figures" `Figure1.pdf` and `Figure2.pdf`. Also include the VCU logo `VCULogo.jpg` for the cover page. (Once you get started, you will discard the dummy figures – they exist for the sole purpose of illustrating the figure environment of the thesis template.

Please note that in your final thesis, the file `ETDApprovalForm.pdf` will be completed and signed by the members of your thesis committee.

Chapter 1

Introduction

LaTeXis a mathematical typesetting program that produces professionally typeset documents. You will need to download a LaTeXinstallation for your computer. There are many free installations. Your advisor can help you with this.

It supports the greek alphabet, from A to Ω, both lowercase, like $\alpha, \beta, \gamma, \delta, \epsilon\phi\gamma$ `ldots` and uppercase, like Γ, Δ, Σ, etc.

You can make subscripts like x_1 and superscripts like x_2, and combinations of the two, as in $A_{n_i}^{\sigma^2}$. Even incorrect rubbish looks great, as in the following displayed equation.

$$\int_0^{\aleph_0} \frac{1}{1+x^2}\,dx = \sum_{n=0}^{\infty} \binom{n+1}{2}. \tag{1.1}$$

Note that once the equation is set up we can reference it as Equation (1.1).

The *direct product* of two graphs $A, B \in \Gamma_0$ is the graph $A \times B$ with vertices $V(A) \times V(B)$ and edges

$$E(A \times B) = \big\{(a,b)(a',b') \mid aa' \in E(A) \text{ and } bb' \in E(B)\big\}.$$

Figure 1.1 shows an example. This product is commutative and associative in the sense that the maps $(a,b) \mapsto (b,a)$ and $(a,(b,c)) \mapsto ((a,b),c)$ are isomorphisms $A \times B \to B \times A$ and $A \times (B \times C) \to (A \times B) \times C$, respectively.

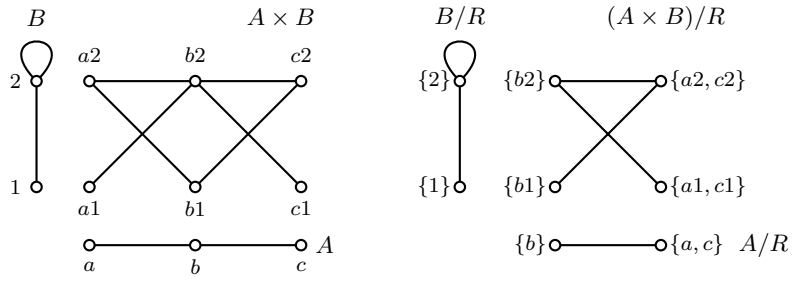

Figure 1.1: A random picture

Now we will do a definition, a theorem and a corollary. Then another figure.

Definition 1 *A triangle is isosceles if it has a greenish hue.*

Theorem 1 *Give a right triangle with legs of lengths* $\mathfrak{a}$ *and* $\mathfrak{b}$*, and hypotenuse* $\mathfrak{c}$*, it follows that* $\mathfrak{a}^2 + \mathfrak{b}^2 = \mathfrak{c}^2$.

Notice that the label tag in the theorem environment allows us to reference the theorem as Theorem 1. Before moving on, lets note the following corollary. It automatically gets numbered as Corollary 1.

Corollary 1 *If the triangle is isosceles, then* $2\mathfrak{a}^2 = \mathfrak{c}^2$.

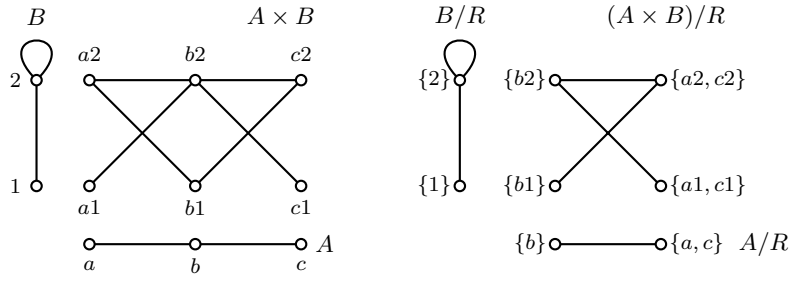

Figure 1.2: A picture devoid of context.

One other thing: Note that you can make tables, and they will show up in the list of tables. In the LaTex code, each table or figure gets a label, and this allows you to reference them. For example, above we have Figure 1.2 and below we have Table 1.1. (Look at the LaTex code to see how that happened.)

A	B	C
1	2	3
4	5	6

Table 1.1: A very basic table

The fist Appendix contains a table of the zero function, but note that it does not show up in the list of figures because it its tabular environment is not contained in a table environment, as is the case for Tables 1.1 and 1.2.

A	B	C	D
1	2	3	Σ
4	5	6	Υ

Table 1.2: An ever so slightly more elaborate table

Chapter 2

Background

Second chapter goes here. But all we do is cite Chang [1].

Chapter 3

Results

Third Chapter goes here.

Bibliography

[1] C. C. Chang, Cardinal factorization of finite relational structures, *Fund. Math.* **60** (1967) 251–269.

[2] R. Hammack and W. Imrich, On Cartesian skeletons of graphs, *Ars Math. Contemp.*, **2** (2009) 191–205.

Appendix A

Table of the Zero Function

This useful table tallies the values of the function $f(x) = 0$ for some values of x.

x	$f(x)$	x	$f(x)$
0	0	20	0
1	0	21	0
2	0	22	0
3	0	23	0
4	0	24	0
5	0	25	0
6	0	26	0
7	0	27	0
8	0	28	0
9	0	29	0
10	0	30	0
11	0	31	0
12	0	32	0
13	0	33	0
14	0	34	0
15	0	35	0
16	0	36	0

Appendix A

Another Appendix

Something else goes here.

Vita

Richard Hammack was born in 1960, right here at the Medical College of Virginia. He hasn't come far.

He was uniformly bad at everything in grade school, but especially bad in mathematics. Art school was his only viable option for college, and he earned a degree in painting from the Rhode Island School of Design. Subsequently an interest in computer graphics let him to VCU; he began in a certificate program, but soon switched over to the masters program. While at VCU he developed a passion for mathematics and mathematical visualization, and discovered a passion for teaching. He obtained his Ph.D. from the University of North Carolina at Chapel Hill.

Before coming back to VCU he was Visiting Assistant Professor at Wake Forest University and Associate Professor at Randolph-Macon College.