

An EPUB Sampler

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Rob Beezer

Biographical sketch with title This is about the author and has a title.

This sketch doesn't actually have a title in the PreTeXt source.

Website: [PreTeXt](#)

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To all those who like reflowable electronic books.

Acknowledgements

Mitchel T. Keller has added a number of things to this sampler to continue to stress out the EPUB conversion and make sure it's all working right.

Contents

| | |
|--|-----------|
| Acknowledgements | v |
| 1 One | 1 |
| 2 Two | 2 |
| 2.1 A silly section. | 2 |
| 2.2 A Section with Subsections | 3 |
| 2.3 Exercises | 3 |
| 3 A Bit of Math $y=mx+b$ | 4 |
| 4 Some Imagex $ax^2+bx+c=0$ | 5 |
| 4.1 Graphics formats $f'(x)$ | 5 |
| 4.2 Additional stress testing | 7 |
| Appendices | |
| A Maybe the license | 9 |
| B List of Figures | 10 |
| C Hints, Answers and Solutions to Exercises | 11 |
| Back Matter | |
| References | 12 |
| Index | 13 |

Chapter 1

One

The quick brown fox jumps over the lazy dog.

Some test cross-references:

- To the next chapter: [Chapter 2](#)
- To a figure much later: [Figure 4.1.1](#)
- To some multi-line display math later: [\(2.1.2\)](#)
- To an abstract algebra textbook: [\[1\]](#)

Chapter 2

Two

This is the introduction to the chapter. We put some math

$$\int_a^b f(t) dt$$

in here for validation purposes.

2.1 A silly section.

This section just exists so that we can add <introduction> and <conclusion> tags to this chapter.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In ultricies purus sit amet rutrum dictum. Donec sit amet ligula quis orci vestibulum tempor id in erat. Ut ut placerat lacus, sit amet feugiat lorem. Pellentesque sodales risus at eros malesuada, eget ultrices est consectetur. Praesent fermentum, ligula sit amet fermentum varius, elit eros imperdiet lectus, tempus condimentum quam elit in elit. Sed molestie mauris sem, sed laoreet elit iaculis ut. In mattis blandit ex, nec rutrum purus ullamcorper eget. Nullam maximus magna non elit euismod, non ornare nisl porttitor. Pellentesque commodo tempus viverra.

Curabitur ac hendrerit ligula. Aenean vitae nunc id elit convallis efficitur. Sed ultricies ut justo quis elementum. Sed eget eros venenatis, pellentesque risus sed, fermentum mi. Proin ipsum arcu, porta nec sem sit amet, sollicitudin faucibus erat. Quisque lacus lectus, pellentesque ut imperdiet sed, euismod vitae nibh. Donec dolor diam, elementum ac pharetra vitae, volutpat mollis augue.

Look at this! This is an aside. Please don't let it distract you.

Maecenas ex enim, lobortis et blandit sit amet, pretium in ante. Sed mollis sollicitudin nibh non consectetur. Vestibulum eget tortor sit amet felis iaculis fermentum. Sed eu nisl a urna cursus congue at nec nulla. Mauris lacinia molestie tristique. Maecenas aliquet rutrum venenatis. Vivamus quis metus sit amet est feugiat facilisis quis et massa. Aenean dui sem, dapibus at imperdiet ac, auctor sit amet arcu. Vestibulum eget porttitor est. Aliquam id pellentesque quam, vitae rhoncus metus. In congue condimentum malesuada. Mauris in condimentum eros, eget mattis nibh. Praesent et ex porttitor, lobortis nibh sed, cursus ante. Suspendisse dapibus vel risus eu pellentesque.

We end here with multiline display math to test linking from elsewhere into this multi-page section.

$$-9y = y'' - 6y' \tag{2.1.1}$$

$$y = c_1 e^{3x} + c_2 x e^{3x} \quad (2.1.2)$$

2.2 A Section with Subsections

2.2.1 A simple subsection

A subsection in a section.

2.2.2 Exercises

1. A single exercise buried in an exercises division that is a peer of a subsection.

2.3 Exercises

1. A lone exercise in an exercises division that is a peer of a section.

Hint. A little suggestion.

Answer. $y = x^2$

Solution. Maecenas ex enim, lobortis et blandit sit amet, pretium in ante. Sed mollis sollicitudin nibh non consectetur. Vestibulum eget tortor sit amet felis iaculis fermentum. Sed eu nisl a urna cursus congue at nec nulla. Mauris lacinia molestie tristique. Maecenas aliquet rutrum venenatis. Vivamus quis metus sit amet est feugiat facilisis quis et massa. Aenean dui sem, dapibus at imperdiet ac, $y = ax^2 + bx + c$ auctor sit amet arcu. Vestibulum eget porttitor est. Aliquam id pellentesque quam, vitae rhoncus metus. In congue condimentum malesuada. Mauris in condimentum eros, eget mattis nibh. Praesent et ex porttitor, lobortis nibh sed, cursus ante. Suspendisse dapibus vel risus eu pellentesque.

Wrapping up. This is the conclusion.

Chapter 3

A Bit of Math $y = mx + b$

This paragraph has some inline math, a Diophantine equation, $x^2 + 2y^2 = z^2$. And some display math about infinite series:

$$\sum_{n=1}^{\infty} \frac{1}{n^2} = \frac{\pi^2}{6}. \quad (3.0.1)$$

Look at the XML source to see how \LaTeX macros are employed.

And a bit of multi-line display math:

$$\frac{d}{dx} \int_a^x f(t) dt = \frac{d}{dx} (F(x) - F(a)) \quad (3.0.2)$$

$$\begin{aligned} &= \frac{d}{dx} F(x) - \frac{d}{dx} F(a) \\ &= f(x) - 0 = f(x). \end{aligned} \quad (3.0.3)$$

And multi-line math with an embedded cross-reference to a figure:

$$\begin{aligned} x^2 + y^2 &= z^2 \\ a^2 + b^2 &= c^2 \end{aligned} \quad \text{Figure 4.1.2}$$

Nice.

Theorem 3.0.1 Fundamental Theorem of Calculus. (Newton, Leibniz) *Let f be a continuous function on the interval $[a, b]$. If F is an antiderivative for f on $[a, b]$, then*

$$\int_a^b f(t) dt = F(b) - F(a).$$

Outcomes

- You have read the statement of [Fundamental Theorem of Calculus](#).
- You have seen multiline math, and it is awesome.

Chapter 4

Some Images $ax^2 + bx + c = 0$

Objectives

- To discuss formats for graphics
- To stress test the EPUB conversion with $y = f'(x)$ math in here

4.1 Graphics formats $f'(x)$

A Portable Network Graphics (PNG) image created externally in Sage and then included directly here.

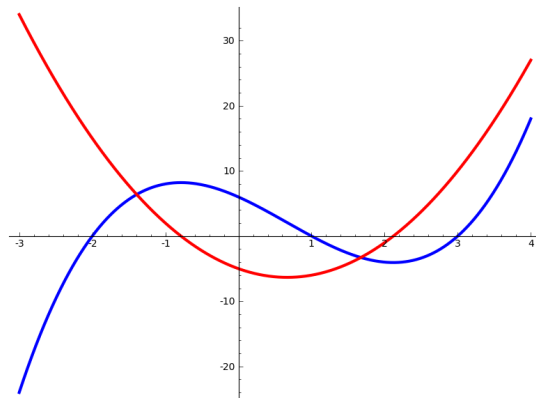


Figure 4.1.1 A cubic polynomial and its derivative

Here we drop a small reference to an equation earlier, notably [\(3.0.1\)](#).

A Scalable Vector Graphics (SVG) image created externally in Sage and then included here as a vector image (no file extension given).

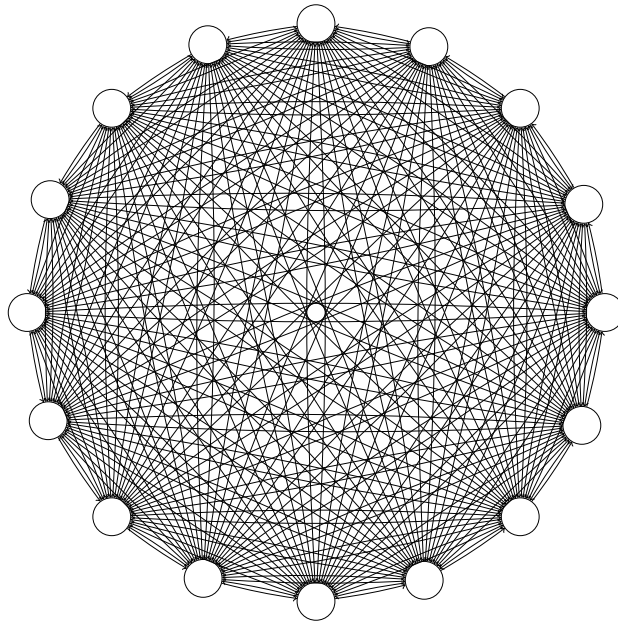


Figure 4.1.2 A complete graph on 16 vertices

A Scalable Vector Graphics (SVG) image described by Sage commands, which is produced by the `pretext` script.

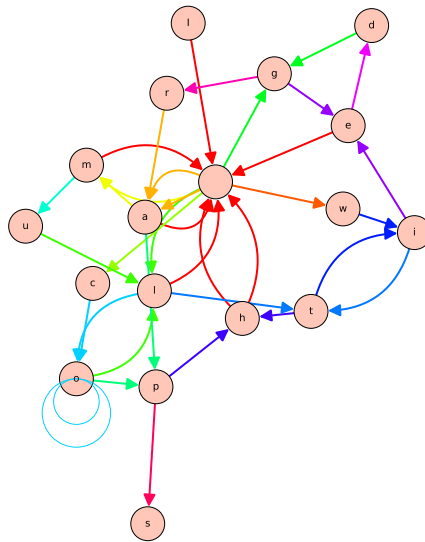


Figure 4.1.3 A Sage multigraph of a sentence

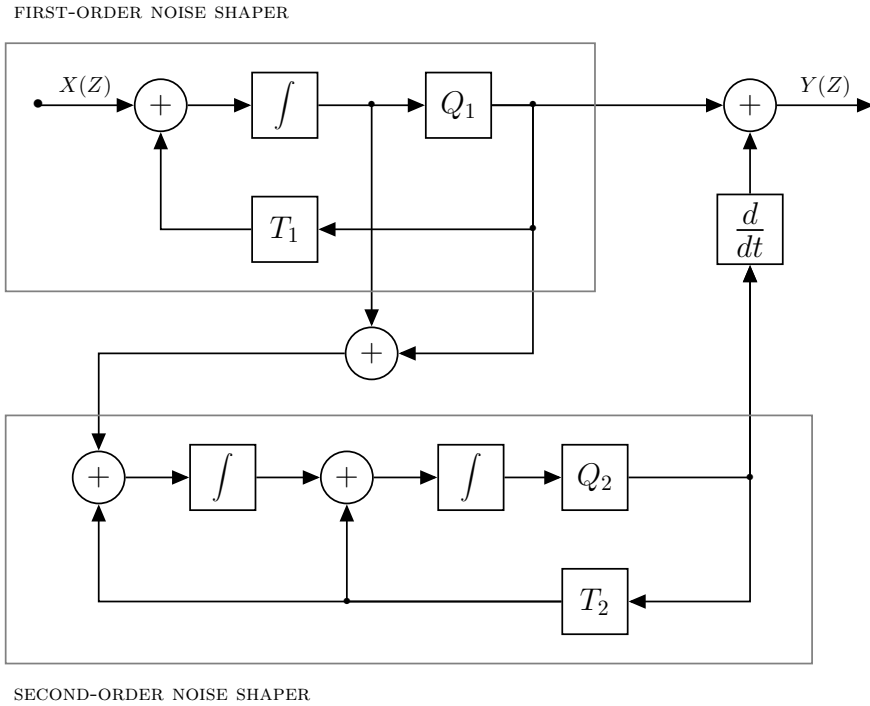
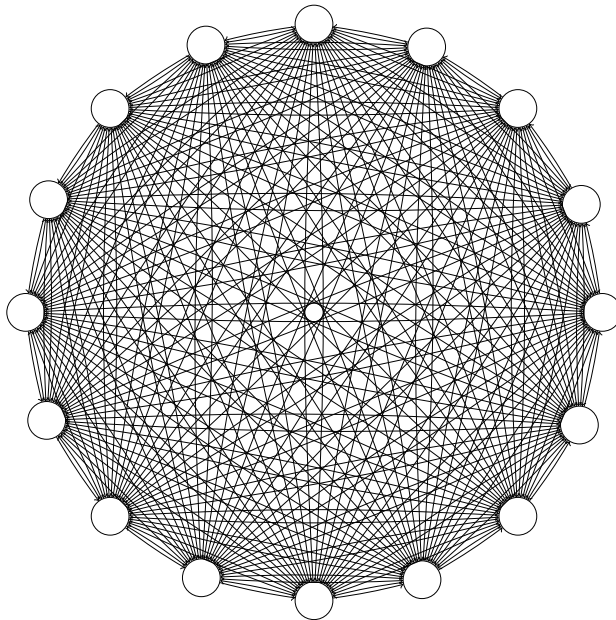


Figure 4.1.4 TikZ Electronics Diagram

4.2 Additional stress testing

We repeat an image created from an external file, because the EPUB format only wants the file noted once.



We like to put URLs into footnotes, especially for formats like this where they may not be active. This output is from [PreTeXt](http://pretextbook.org)¹².

¹pretextbook.org

²pretextbook.org

We make a reference to some math in another chapter (3.0.3) in order to test that validation works for this. We also refer to (2.1.1)

Checkpoint 4.2.1 A sample exercise, where a <hint> and a <solution> should be visible (rather than in a knowl).

Hint. Just a little help.

Solution. The whole story with all the details.

This is a <conclusion>. We will follow it with an <outcomes>.

Outcomes: The really awesome things we've done!

1. We just tested if we get this list of outcomes.

Appendix A

Maybe the license

Lots of books written in PreTeXt include the terms of their license in an appendix, so let's use this as a test.

Appendix B

List of Figures

Chapter 4 Some Images $ax^2 + bx + c = 0$

[Figure 4.1.1](#)

[Figure 4.1.2](#)

[Figure 4.1.3](#)

[Figure 4.1.4](#)

Appendix C

Hints, Answers and Solutions to Exercises

2 · Two

2.3 · Exercises

2.3.1. Hint. A little suggestion.

Answer. $y = x^2$

Solution. Maecenas ex enim, lobortis et blandit sit amet, pretium in ante. Sed mollis sollicitudin nibh non consectetur. Vestibulum eget tortor sit amet felis iaculis fermentum. Sed eu nisl a urna cursus congue at nec nulla. Mauris lacinia molestie tristique. Maecenas aliquet rutrum venenatis. Vivamus quis metus sit amet est feugiat facilisis quis et massa. Aenean dui sem, dapibus at imperdiet ac, $y = ax^2 + bx + c$ auctor sit amet arcu. Vestibulum eget porttitor est. Aliquam id pellentesque quam, vitae rhoncus metus. In congue condimentum malesuada. Mauris in condimentum eros, eget mattis nibh. Praesent et ex porttitor, lobortis nibh sed, cursus ante. Suspendisse dapibus vel risus eu pellentesque.

References

- [1] Tom Judson, *Abstract Algebra: Theory and Applications*.
Another online, open-source offering.
- [2] David C. Lay, *Subspaces and Echelon Forms*. The College Mathematics
Journal, January 1993, **24** no. 1, 57–62.

Index

Diophantine equation, [4](#)

PNG, *see* Portable Network

Graphics
Portable Network Graphics
(PNG), [5](#)

Colophon

This document was authored in PreTeXt to stress test conversion to EPUB. Please do not judge its contents, which randomly has some $y = e^{ax+b}$ math in the rear colophon.