



Faculty of Science and Engineering

Your Name

BSc. (Hons) Mathematics

Project Title

March 2020

Department of Computing and Mathematics

Abstract

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With the exception of any statement to the contrary, all the material presented in this report is the result of my own efforts. In addition, no parts of this report are copied from other sources. I understand that any evidence of plagiarism and/or the use of unacknowledged third party materials will be dealt with as a serious matter.

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Acknowledgements

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Listings

- 1.1 A MATLAB function to compute the first n numbers of the Fibonacci series . . . 4

Chapter 1

Chapter Heading

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1.1 Section Heading

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1.1.1 Subsection Heading

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1.1.2 Some maths

L^AT_EX is very good at presenting mathematics.

Inline equation : $ax^2 + bx + c = 0$

Display equation:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Numbered equation:

$$\frac{\partial}{\partial t} U + \nabla \cdot F = 0 \tag{1.1}$$

Aligned equation (not how equals signs line up):

$$\begin{aligned} \mathbf{a} \cdot \mathbf{b} &= \sum_{i=1}^n a_i b_i \\ &= a_1 b_1 + a_2 b_2 + \cdots + a_n b_n; \end{aligned} \tag{1.2}$$

Aligned equation with no numbers:

$$\begin{aligned} \mathbf{a} \cdot \mathbf{b} &= \sum_{i=1}^n a_i b_i \\ &= a_1 b_1 + a_2 b_2 + \cdots + a_n b_n; \end{aligned}$$

1.1.3 Theorems, proofs, definitions and examples

Theorem 1.1 (Fermat's last theorem). *No three positive integers a , b , and c satisfy the equation $a^n + b^n = c^n$ for any integer value of n greater than 2.*

Proof. Left as an exercise for the reader. □

Definition 1.1. *The intersection of two sets A and B , denoted by $A \cap B$, is the set of all objects that are members of both the sets A and B .*

Example 1.1

Given the two sets $A = \{x : x \in \mathbb{N}, x < 5\}$ and $B = \{x : x \in \mathbb{N}, x \text{ is even}\}$ then $A \cap B = \{2, 4\}$.

1.2 Figures and tables

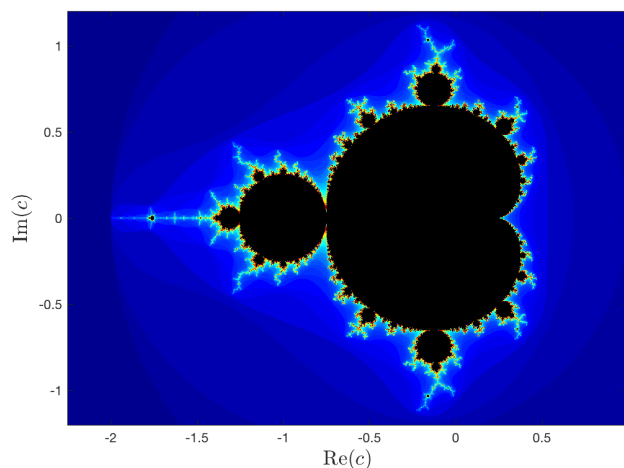


Figure 1.1: This is a figure caption, note how it appears underneath the figure.

Table 1.1: This is a table caption, not how it appears above the table.

first column	second column	third column
This column is left aligned	This column is centrally aligned	This column is right aligned

1.2.1 Program code

Listing 1.1: A MATLAB function to compute the first n numbers of the Fibonacci series

```
function y = fibonacci(n)
% This function calculates the first n terms in the Fibonacci series
y(1) = 0;
y(2) = 1;
for i = 3 : n
    y(i) = y(i-2) + y(i-1)
end
end
```

1.3 Referencing

References can be cited so that the author names(s) are a part of the sentence, e.g., Stroud and Booth (2013), Harten et al. (1983)

Alternatively, references can be cited so that the author names appear in the brackets (for when the name of the author is not relevant to the sentence), e.g., (Stroud and Booth 2013), (Harten et al. 1983).

Cross referencing is easily done by using the label of the item you are referencing to (see source code for details).

- Chapter 1
- Section 1.1
- Equation (1.1)
- Table 1.1
- Figure 1.1
- Page 2

Above is an example of a bulleted list. You can also create numbered lists:

1. First list item
2. Second list item
 - (a) First sub list item

(b) Second sub list item

3. Third list item

Chapter 2

Another Chapter Heading

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References

Harten, A., Lax, P.D., and van Leer, B. (1983). “On upstream differencing and Godunov-type schemes for hyperbolic conservation laws”. In: *SIAM review* 25.1, pp. 35–61.

Stroud, K.A. and Booth, D.J. (2013). *Engineering mathematics*. Macmillan International Higher Education.

Appendix A

Appendix Chapter

A.1 Appendix section

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Appendix B

Another Appendix Chapter

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