FREAKOMATICA
Mathematics from First Principles

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Preface

There are typical ways in which math books attempt to reach the audience.

1. Dull and Solving.
   This is where the book only delivers the art of solving. With no care of how a audience can apply the knowledge which is being acquired. The audience is presented with the formulas neccessary to accomplish a task without caring why it is necessary to know such task and how and why was such formula was arrived at.

2. All fun Math.
   This is the approach of Math facts only books. They present facts with so much assumption that you know math or with little care of whether you need to solve as you can read through the text without any use of a calculator. They are both enjoyable and exciting as they remove all the evil that is seen with math. They do a great job of showing what a beautiful land math is. All the fiction you can ever get from math land. Hence they are not used in a classroom setting where you are required to solve something so that a teacher can evaluate or for self practice.

3. Application Math.
   lorem

All These are not bad approaches they mostly achieve the purpose they are for.

This book tryies to blend in all these approaches mainly so that the book can be taken serious enough for use in classroom setting and so that it demystifyies math and make it fun for self learning. It presumes the reader has no prior experience with math and wants to teach from first principles.

Ofcourse this is almost impossible goal.

The goal is to demostrate that almost anyone can contribute to this wonderful universe of math. Develop it, question it and use it in any way possible. The goal is to show that seemingly so obvious ideas were not obvious before and looking into obvious things brought in advancement in human knowledge in alternative way of doing things.

The most notorious challege to be solved:

1. people learn differently

2. classrooms go inline with Sylabbus

3. Back and fourth of math

4. difficult to mix things

Contents

Introduction

NOTE: I don't know if this should be the introduction or conclusion.

As the title of the book suggests, what comes after this is almost a reflection of what makes mathematics, it would be too arrogant to wish to provide this reflection as it has turned out to be broad without borders everything now is in some form of mathematics.

0.1 How to get most of this book????????

0.2 What is Mathematics?

"Mathematics is the study of quantity"*. Telling you that this is a more accurate meaning would be lying but as far as we go with your pursuit of mathematics you will discover the messy and not so attractive meaning of this field of study. Mathematicians as you will become are always fascinated with quantity how much is how much. If we say James* is 12 years old what do we mean? How much big is ten people than two? These questions and far far more advanced than this is what inspired people to develop mathematics to create rules which we will discover on dealing with quantities, manipulating quantities, thinking about quantities and what ever is possible with quantity. Perhaps you will in future invent or discover some of these rules as you become a better mathematics student.

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*https://www.newyorker.com/culture/culture-desk/what-is-mathematics
*This name will frequently be used, you can feel free to substitute(replace) with your name

0.3   The Reality of Mathematics

This is one of the most debated topic in mathematics. Are numbers or what we know about mathematics real and that we found them already existing waiting to be found and that we found them [think the reality of mathematics is outside and independent of us outside of our mental view or physical reality.]or we invented them, we created them from our own imagination like the way we create all the stuff found on earth books, bicycles. As you are starting this book, I can not convincingly tell you the answer or you can find this question a little bit silly but as we go on with our discussion on mathematics you will realize how important this question is or how unreal some math concepts are and you wonder whether everything else is real or not?. Hannah Fry spends a lot of considerable amount of time discussing the reality of mathematics in magic of numbers.

0.4   The Essence of Mathematics

0.5   Why Mathematics?

For a modern man, Mathematics is everywhere. It is the language which all the sciences are build upon. So basically everything is made by man in someway or another math was behind this. When making bread they use flour which was manufactured somewhere, for this bread to reach you it has been transported through trucks which are made by physicist who write all their laws and principles in math and calculations on how the car should operate and how every part should be connected to one another is written in mathematics. Long story short everything that involves machines, there is math playing a huge role behind.

In Nature, Mathematics play a huge role

Math in everyday life.

0.6 Branches of Mathematics

0.7 Bonus:

0.8 Lookup:

0.9 Glossary

0.10 References

Chapter 1

Things and Objects

1.1   what are things and objects

The world is filled with things and objects those we see and those we don't
see. There are animals that are vastly available in the world of different types
[examples]. Every other animal is taken to be distinct a sheep is different
from another sheep. Therefore a sheep is a thing and another sheep is another
thing, They are of the same type of course they belong to a group of animals
called sheep. A cow is different from another cow . Therefore a cow is a
thing and another cow is another thing, They are of the same type, they
belong to a group of animals of cattle. This can be said of [this] thing
and [another] thing. Addition property can be that "this" in [this] thing
can be a sheep and "another" in [another] thing can be a cow and also this
relationship of [this] and [another] is also those things are distinct. But, what
if we have a [this] and another [this] belonging to one group lets say group
of cattle and we have [another] thing and another [another] thing, how can
we be sure that those distinct things equal to one another and how can we
express it not so laboriously as we have done because we can have as many
[this(es)] and [another(s)] as we want and using word [this] and [another] has
shown not a good way to go about it. And Mathematics provide a way to
compare a group of [this] and and a group of [that]. mathematics provide
us with numbers as a sneak way to talk about [this] and [another], a clever
way to talk about quantity. This makes mathematics just another form of
language in this case, a language that gives all the languages superpower

to express ambiguous ideas or situations. In our case the situation was on distinctiveness how to say how much of distinct is a group from another group without comparing [this].

1.2   Glossary

1.3   References

Chapter 2

Numbers

2.1 Glossary

2.2 References

Chapter 3

Counting

3.1 Glossary

3.2 References

Chapter 4

Addition and Subtraction

Chapter 5

Let this be that

5.1 Glossary

5.2 References

Chapter 6

Multiplication and division

6.1 Glossary

6.2 References

Chapter 7

Fractions, decimals and Percentages

Chapter 8

Order of Operations

Chapter 9

Operations all together

9.1   Glossary

9.2   References

Chapter 10

Power

Chapter 11

Root

11.1   Glossary

11.2   References

Chapter 12

Where to go from here