Poxa vida!

Livro de Receitas

Testadas e revisadas de Forma quase Cientifica

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20 de junho de 2020

The Author Himself

* A big nerd

Poxa vida!

Colophon
This document was typeset with the help of KOMA-Script and LaTeX using the kaobook class.
The source code of this book is available at:
https://github.com/fmarotta/kaobook
(You are welcome to contribute!)

Publisher
First printed in May 2019 by The Author Himself

From gramma to mama, from all around the world, good food always get the friends together and warms the heart.

– Leandro de Souza Rosa

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Mathematics and Boxes 1

1.1 Theorems

Despite most people complain at the sight of a book full of equations, mathematics is an important part of many books. Here, we shall illustrate some of the possibilities. We believe that theorems, definitions, remarks and examples should be emphasised with a shaded background; however, the colour should not be to heavy on the eyes, so we have chosen a sort of light yellow.[1]

1: The boxes are all of the same colour here, because we did not want our document to look like Harlequin.

Definition 1.1.1 *Let (X, d) be a metric space. A subset $U \subset X$ is an open set if, for any $x \in U$ there exists $r > 0$ such that $B(x, r) \subset U$. We call the topology associated to d the set τ_d of all the open subsets of (X, d).*

Definition 1.1.1 is very important. I am not joking, but I have inserted this phrase only to show how to reference definitions. The following statement is repeated over and over in different environments.

Theorem 1.1.1 *A finite intersection of open sets of (X, d) is an open set of (X, d), i.e τ_d is closed under finite intersections. Any union of open sets of (X, d) is an open set of (X, d).*

Proposition 1.1.2 *A finite intersection of open sets of (X, d) is an open set of (X, d), i.e τ_d is closed under finite intersections. Any union of open sets of (X, d) is an open set of (X, d).*

You can even insert footnotes inside the theorem environments; they will be displayed at the bottom of the box.

Lemma 1.1.3 *A finite intersection[a] of open sets of (X, d) is an open set of (X, d), i.e τ_d is closed under finite intersections. Any union of open sets of (X, d) is an open set of (X, d).*

[a] I'm a footnote

You can safely ignore the content of the theorems... I assume that if you are interested in having theorems in your book, you already know something about the classical way to add them. These example should just showcase all the things you can do within this class.

Corollary 1.1.4 (Finite Intersection, Countable Union) *A finite intersection of open sets of (X, d) is an open set of (X, d), i.e τ_d is closed under finite intersections. Any union of open sets of (X, d) is an open set of (X, d).*

Demonstração. The proof is left to the reader as a trivial exercise. Hint: Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent

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Definition 1.1.2 *Let (X, d) be a metric space. A subset $U \subset X$ is an open set if, for any $x \in U$ there exists $r > 0$ such that $B(x, r) \subset U$. We call the topology associated to d the set τ_d of all the open subsets of (X, d).*

Here is a random equation, just because we can:

$$x = a_0 + \cfrac{1}{a_1 + \cfrac{1}{a_2 + \cfrac{1}{a_3 + \cfrac{1}{a_4}}}}$$

Example 1.1.1 Let (X, d) be a metric space. A subset $U \subset X$ is an open set if, for any $x \in U$ there exists $r > 0$ such that $B(x, r) \subset U$. We call the topology associated to d the set τ_d of all the open subsets of (X, d).

Remark 1.1.1 Let (X, d) be a metric space. A subset $U \subset X$ is an open set if, for any $x \in U$ there exists $r > 0$ such that $B(x, r) \subset U$. We call the topology associated to d the set τ_d of all the open subsets of (X, d).

As you may have noticed, definitions, example and remarks have independent counters; theorems, propositions, lemmas and corollaries share the same counter.

Remark 1.1.2 Here is how an integral looks like inline: $\int_a^b x^2 dx$, and here is the same integral displayed in its own paragraph:

$$\int_a^b x^2 dx$$

We provide two files for the theorem styles: plaintheorems.sty, which you should include if you do not want coloured boxes around theorems; and mdftheorems.sty, which is the one used for this document.[2] Of course, you will have to edit these files according to your taste and the general style of the book.

2: The plain one is not showed, but actually it is exactly the same as this one, only without the yellow boxes.

1.2 Boxes & Custom Environments [3]

3: Notice that in the table of contents and in the header, the name of this section is "Boxes & Environments"; we achieved this with the optional argument of the `section` command.

Say you want to insert a special section, an optional content or just something you want to emphasise. We think that nothing works better than a box in these cases. We used `mdframed` to construct the ones shown below. You can create and modify such environments by editing the provided file environments.sty.

Title of the box

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If you set up a counter, you can even create your own numbered environment.

Comment 1.2.1

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1.3 Experiments

It is possible to wrap marginnotes inside boxes, too. Audacious readers are encouraged to try their own experiments and let me know the outcomes.

title of margin note

Margin note inside a kaobox.
(Actually, kaobox inside a marginnote!)

I believe that many other special things are possible with the `kaobook` class. During its development, I struggled to keep it as flexible as possible, so that new features could be added without too great an effort. Therefore, I hope that you can find the optimal way to express yourselves in writing a book, report or thesis with this class, and I am eager to see the outcomes of any experiment that you may try.

Technical

Notation

The next list describes several symbols that will be later used within the body of the document.

c	Speed of light in a vacuum inertial frame
h	Planck constant