Sample Document for Templates

March 8, 2025

This document just serves as one to define the example typesetting, the tcolorboxes, and the formatting of my notes.

Abstract

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119.

I am following the keywords mentioned above. If you know basic English, you can read the proceeding.

§1 Typesetting

The way I typeset is openly inspired (outright robbed) from Evan Chen, his main website is at `www.evanchen.cc`. To begin:

1. Entering math mode as inline MUST have spaces in between the syntax in the source `\( a^2 + b^2 = c^2 \)`.

2. Entering math mode as block SHOULD have indentation and the symbols as a new line in the source if it is long,

```
\[
 a^n + b^n \neq c^n\ \text{for}\ n \geq 2
\]
```

3. A fraction in inline mode is RECOMMENDED to stay in inline mode and NOT in display mode.

4. Entering an environment SHOULD have indentations.

```
\begin{array}
 & 100 \\
 - & 20 \\
 \hline
 & 80
\end{array}
```

   Any copy pasted text that is not long in terms of source SHALL be adjusted in such a way. Anything that is deemed too long to adjust is excluded.

5. Every `\newpage` SHALL have a space in between the content.

```
... and as follows, the theorem can be explained in detail.

\newpage

Whenever a square with area \( a \)...
```

6. The `\newpage` command MUST not be indented.

7. Grammatical (not mathematical) symbols SHALL not be enclosed in math mode.

```
\( 3x. \), \( a, b, \) and \( c \), \( 1, 2, 3, \dots, n\)
```

   Instead,

```
\( 3x \)., \( a, b \), and \( c \), \( 1, 2, 3 \), \dots, n \).
```

8. Every operator MUST have symmetrical spaces. They MAY be omitted if the expression is incredibly short. Commas are exceptions.

9. Entering math mode as block as a short expression MUST have a space between the syntax in the source `\[ x = \frac{-b \pm \sqrt{ b^2-4ac }}{2a} \]`

10. Entering a command in a fraction that involves the brace MUST have spaces in between the input, like seen in the prior.

11. After exiting an environment, there MUST be a line break before beginning again the content.

    ```
    \end{itemize}

    We conclude the session with ...
    ```

    This MAY be omitted if in the enumerate or itemize environment.

12. Before entering an environment, there MUST be a line break before beginning the environment.

    ```
    So we begin with a list of criterions:

    \begin{itemize}
     \item a > 0
     ...
    ```

    This MAY be omitted if in the enumerate or itemize environment.

13. If an expression is too short to use `\( \)` in inline, one SHOULD use dollar signs `$ $`. If one was careless and put the regular parenthesis, one is forgiven[1]. You SHALL omit the spaces added after and before the closing syntax.

14. Any mathematical symbology or variable, or a number used in mathematical context is REQUIRED to be under math mode, `using \( $2$ amounts.`, `given is $x := y$`. If using grammatically, constants MAY not be included in math mode.

15. Predefined operators like the parallel operator MUST NOT be used with keyboard symbols, `||` instead of `\parallel`.

16. Every section, subsection, subsubsection, MUST have a line break before and after its declaration. Every part, and chapter MUST have two line breaks.

17. Referencing a theorem, lemma, etc, MUST be boldfaced.

[1] I sounded like a philosopher.

§2 The tcolorboxes

Definition 2.1: Testing

This is a box. What's inside?

Reference to 2.1.

Theorem 2.1: Testing

This is a box. What's inside?

Reference to 2.1.

Lemma 2.1: Testing

This is a box. What's inside?

Reference to 2.1.

Corollary 2.1: Testing

This is a box. What's inside?

Reference to 2.1.

Axiom 2.1: Testing

This is a box. What's inside?

Reference to 2.1.

Proposition 2.1: Testing

This is a box. What's inside?

Reference to 2.1.

Postulate 2.1: Testing

This is a box. What's inside?

Reference to 2.1.

Example 2.1: Testing

This is a box. What's inside?

Reference to 2.1.

Property 2.1: Testing

This is a box. What's inside?

Reference to 2.1.

Note (Testing)**.**

This is for common mistakes that someone can have. The regular Note environment is just for taking note on something that is not considered highly to be a remark but just enough to sought to be noticed.

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solutions

This is some content. Like and subscribe! This style is inspired from Sheldon Axler's Linear Algebra Done Right.

Remark (Testing)*.*

This is a box. What's inside?

Explanation (Testing)*.*

This is a box. What's inside?

Call back to **Lemma 2.1**, and and to **Example 2.1**.

Example 2.2: Testing

Unlike **Example 2.1**, this involves direct examples (related to a prior lesson, applying a previous topic to understand better etc.) and not computational ones; applications are reserved for the former.

Reference to 2.2.