

Advanced Mathematical Documents

Theorem Environment

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This Presentation

- The package.
- Creating theorems.

Preamble Commands

- Since there are theorems, lemmas, conjectures, etc., the author is allowed to create different style.

- This is done in the preamble with:

$$\backslash\mathrm{newtheorem}\{abbrev.\}\{Name\}$$

- The *abbrev.* is how the command will be started, *Name* is what will be displayed in the document.

- Ex: $\backslash\mathrm{newtheorem}\{Thm\}\{Theorem\}$

Creating a Theorem

- In the body, the theorem environment starts and ends with:

```
\begin{abbrev.}  
\end{abbrev.}
```

- Using the previous example, the command would look like this:

```
\begin{thm}  
\end{thm}
```

Theorem Example

```
\begin{thm} Let  $\lim_{x \rightarrow a} f(x) = L$ . Then there exists  
 $\delta > 0$  such that if  
 $0 < |x - a| < \delta$ ,  
then  $|f(x) - L| < \epsilon$ .  
\end{thm}
```

Output:

Theorem 1 *Let $\lim_{x \rightarrow a} f(x) = L$. Then there exists $\delta > 0$ such that if $0 < |x - a| < \delta$, then $|f(x) - L| < \epsilon$.*

Conclusion

- The author can add or adjust preamble commands to make theorems appear as Lemmas, Conjectures, or whatever is needed.
- It is important to remember to use the $\$$ symbol in the theorem environment, that is, the theorem environment is *not* a math environment.