

Sample document

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1 LAlignAnd

$$\begin{array}{lll} \& = & \begin{array}{l} a = b \\ c = d \end{array} \text{ ok} \\ = \& & \begin{array}{l} a = b \\ c = d \end{array} \text{ ng} \\ = \{\}\& & \begin{array}{l} a = b \\ c = d \end{array} \text{ ok} \end{array}$$

2 LAlignEnd

The following ends with a line break.

$$\begin{array}{l} f(x) = ax^2 + bx + c \\ g(x) = dx^2 + ex + f \end{array}$$

The following does not end with a line break.

$$\begin{array}{l} f(x) = ax^2 + bx + c \\ g(x) = dx^2 + ex + f \end{array}$$

Here is the next line after the align environment.

3 LAlignSingleLine

— Long line before display (same result) —

Lorem ipsum.

$$f(x) = ax^2 + bx + c$$

This is an **equation** environment.

Lorem ipsum.

$$f(x) = ax^2 + bx + c$$

This is an **align** environment.

Short line before display (different result)	
Lrm:	Lrm:
$f(x) = ax^2 + bx + c$	$f(x) = ax^2 + bx + c$
This is an equation environment.	This is an align environment.

$$f(x) = ax^2 + bx + c$$
$$\begin{aligned} f(x) &= ax^2 + bx + c \\ g(x) &= dx^2 + ex + f \end{aligned}$$

This is a sample text. This is a sample text. This is a sample text.
Both bigcup $\bigcup_{x \in B} O_x$ and cup $\cup_{x \in B} O_x$ do not spoil the line spacing.
This is a sample text. This is a sample text. This is a sample text.

$$\begin{array}{c} X_1 \cap X_2 \ X_1 \cup X_2 \ X_1 \odot X_2 \ X_1 \oplus X_2 \ X_1 \otimes X_2 \\ X_1 \sqcup X_2 \ X_1 \uplus X_2 \ X_1 \vee X_2 \ X_1 \wedge X_2 \\ \cap_{i=1}^{\infty} X_i \cup_{i=1}^{\infty} X_i \odot_{i=1}^{\infty} X_i \oplus_{i=1}^{\infty} X_i \otimes_{i=1}^{\infty} X_i \\ \sqcup_{i=1}^{\infty} X_i \uplus_{i=1}^{\infty} X_i \vee_{i=1}^{\infty} X_i \wedge_{i=1}^{\infty} X_i \\ \bigcap_{i=1}^{\infty} X_i \bigcup_{i=1}^{\infty} X_i \bigodot_{i=1}^{\infty} X_i \bigoplus_{i=1}^{\infty} X_i \bigotimes_{i=1}^{\infty} X_i \bigsqcup_{i=1}^{\infty} X_i \biguplus_{i=1}^{\infty} X_i \bigvee_{i=1}^{\infty} X_i \bigwedge_{i=1}^{\infty} X_i \end{array}$$

<code>\max(a,b)</code>	$\max(a,b)$	ok
<code>\max{a,b}</code>	$\max a,b$	ng
<code>\max {a,b}</code>	$\max a,b$	ok?

$\min(a, b)$ and $\min a, b$ are also checked.

<code>\sqrt{a}</code>	\sqrt{a}	ok
<code>\sqrt(a)</code>	$\sqrt{(a)}$	ng

2

7 LLColonEqq

$x := y$	$x := y$	ng
$x \backslash \text{coloneqq} y$	$x := y$	ok
$x ::= y$	$x ::= y$	ng
$x \backslash \text{Coloneqq} y$	$x ::= y$	ok

8 LLColonForMapping

$A : B$	$A : B$	ok
$A \backslash \text{colon} B$	$A : B$	ng
$f : \backslash \text{mathbb{R}} \backslash \text{to} \backslash \text{mathbb{R}}$	$f : \mathbb{R} \rightarrow \mathbb{R}$	ng
$f \backslash \text{colon} \backslash \text{mathbb{R}} \backslash \text{to} \backslash \text{mathbb{R}}$	$f : \mathbb{R} \rightarrow \mathbb{R}$	ok

— We detect all of : in the following —

Here are examples of colons we detect.

- $X : Y \rightarrow Z$,
- $X : Y \mapsto Z$,
- $X : \mathbb{R}^{n^2+2n+1} \rightarrow \mathbb{R}$

and

$$X : (Y \text{ at new line in tex file}) \rightarrow (Z \text{ at new line in tex file}). \quad (1)$$

— We do NOT detect any of : in the following —

Here are examples of ‘:’ we do not detect.

- $X : Y \rightarrow Z$, the correct use of colon.
- $A : B : C = 1 : 2 : 3$, the colon for ratio.
- $A : B = 1 : 2$ and $\alpha \rightarrow \beta$, separated by dollar sign.
- $f : (\text{some very very very very very long long long long words}) \rightarrow \mathbb{R}$, the false negative.

9 LLCref

Theorem 1. *This is a sample theorem.*

Use Thm. 1 with cref instead of Theorem 1 with ref to avoid mistakes.

10 LLDoubleQuotes

Use “XXX” instead of “XXX” or ”XXX”.

11 LLENDash

Example: hyphen(-) A-B, en-dash(--) A–B, em-dash(---) A—B.

- Erdos-Renyi (random graph, Erdős–Rényi)
- Einstein-Podolsky-Rosen (quantum physics, Einstein–Podolsky–Rosen)
- Fruchterman-Reingold (graph drawing, Fruchterman–Reingold)
- Gauss-Legendre (numerical integration, Gauss–Legendre)
- Gibbs-Helmholtz (thermodynamics, Gibbs–Helmholtz)
- Karush-Kuhn-Tucker (optimization, Karush–Kuhn–Tucker)

Exception: Fritz-John (optimization, name of a person)

False Positive: Wrong-Example

12 LLEqnarray

We should not use eqnarray. It has some spacing issues.

$$x = y \tag{2}$$

$$a = b \tag{3}$$

13 LLLlGg

$$\begin{array}{lll} n \backslash ll m & n \ll m & \text{ok} \\ n << m & n << m & \text{ng} \end{array}$$

I like human <<< cat <<<<<<< dog.

14 LLRefEq

To refer to the equation, use (1) with eqref instead of (1) with ref.
You can avoid the mistake of forgetting to add parentheses.

15 LLSharp

<code>\#</code>	<code>#A</code>	ok
<code>\sharp</code>	<code>\sharp</code>	ng

16 LLNonASCII

The following line contains non-ASCII characters.

! " # \$ % & ' () * + , - . /

日本語の文章は、upLaTeX でフツウに書けます。

(You can write Japanese sentences as usual with upLaTeX.)

17 LLSI

Example: 10 KB, 3.5MiB, 500 GB.

Some Awesome Command.This is not ExaByte..

This 1EB is one ExaByte.

18 LLT

$$X^T \quad X^\top \quad X^\top$$

19 LLTitle

19.1 The quick brown fox jumps over the lazy dog

19.1.1 This Is a Correct Title

SubParagraph: Test With Ref 1

20 LLUserDefined

You can define your own rule, such as prohibiting the use of a f^a.

$$f^a(X) \quad f^a(X)$$