LaTeX Tutorial 3: Brackets, Tables and Arrays

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April 23, 2023

1 Brackets:

The distributive property states that $a(b+c) = ab + ac$ for all $a, b, c \in \mathbb{R}$.

The equvalence class of a is $[a]$.

The set A is defined to be $\{1, 2, 3\}$.

The ticket costs \$15.45

This Looks Bad:

$$2(\frac{1}{x^2+1})$$

Scaling Parenthesis Larger For Proper Format:

$$2\left(\frac{1}{x^2+1}\right)$$

Other Examples:

Square Brackets:

$$2\left[\frac{1}{x^2+1}\right]$$

Curly Braces:

$$2\left\{\frac{1}{x^2+1}\right\}$$

Angle (Vector) Brackets:

$$2\left\langle\frac{1}{x^2+1}\right\rangle$$

Absolute Value:

$$2\left|\frac{1}{x^2+1}\right|$$

Evaluation:

$$\left.\frac{\mathrm{d}y}{\mathrm{d}x}\right|_{x=1}^{x=5}$$

Complex Fractions:

$$\left(\frac{1}{1+\left(\frac{1}{1+x}\right)}\right)$$

2 Tables:

Notice this doesn't look right:

x	1	2	3	4	5
$f(x)$	$\frac{1}{2}$	11	12	13	14

Table 1: Values For $f(x)$

x	1	2	3	4	5
$f(x)$	$\frac{1}{2}$	11	12	13	14

Table 2: Values For $f(x)$

$f(x)$	$f'(x)$
$x > 0$	The Function $f(x)$ is increasing.

Table 3: Description of $f(x)$

$f(x)$	$f'(x)$
$x > 0$	The Function $f(x)$ is increasing as long as the function does not cross the $y = 0$ boundary, in which case it becomes undefined. This happens once at the value of $x = 3\pi$.

Table 4: Example Derivatives

$f(x)$	$f'(x)$
x^2	$2x$
x^3	$3x^2$
x^4	$4x^3$
$x^5 + 4x^4$	$5x^4 + 16x^3$

3 Arrays:

$$5x^2 + 13x + 3 \text{ Example text in math mode: place some text here.} \tag{1}$$

Here are aligned numbered equations:

$$\begin{align}
5x^2 + 13x + 3 &= 12x + 4 \tag{2}\\
5x^2 - 9 &= x + 3 \tag{3}\\
15x^3 + 14x^2 - 3x + 3 &= 8x^2 \tag{4}
\end{align}$$

Here are aligned non-numbered equations:

$$\begin{align*}
5x^2 + 13x + 3 &= 12x + 4\\
5x^2 - 9 &= x + 3\\
15x^3 + 14x^2 - 3x + 3 &= 8x^2
\end{align*}$$