Hello! This is my first LaTeX document.

A rectangle has side lengths $(x + 2)$ and $(x + 3)$.The equation

$$A(x) = x^2 + 4x + 3$$

gives the area of the rectangle.

Superscripts:

$$2x^3$$

$$2x^{34}$$

$$2x^{3x+4}$$

$$2x^{3x+4+5}$$

Subscripts:

$$x_1$$

$$x_{12}$$

$$x_{1_2}$$

$$x_{1_{2_3}}$$

$$a_0, a_1, a_2, \ldots, a_{100}$$

Greek Letters:

$$\pi$$

$$\Pi$$

$$\alpha$$

$$A = \pi r^2$$

Trig Functions:

$$y = \sin\theta$$

$$y = \cos(x)$$

$$y = \tan(x)$$

$$y = \sin^{-1}\theta$$

$$y = \arcsin\theta$$

Log Functions:

$$y = \log x$$

$$y = \log_5 x$$

$$y = \ln x$$

Roots:

$$\sqrt{2}$$

$$\sqrt[3]{2}$$

$$\sqrt{x^2 + y^2}$$

$$\sqrt{1 + \sqrt{x}}$$

Fractions:

$$\frac{2}{3}$$

About $\frac{2}{3}$ of the glass is full.

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$$\frac{\sqrt{x+1}}{\sqrt{x+2}}$$

$$\frac{1}{1 + \frac{1}{x}}$$

Brackets, Tables and Arrays:

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

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

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

The movie ticket cost $11.50.

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

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

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

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

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

$$\left.\frac{dy}{dx}\right|_{x=1}$$