Contents

My First LaTeX Document

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Hello World from Latex
Hello!This is my first LaTeX document.
Rectangle has sides $(x+1)$ and $(x+3)$.
The equation of $A(x) = x^2 + 4x + 3$ gives the area of rectangle. The equation of

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

gives the area of rectangle.

Superscripts

$$2x^3 + 5$$

$$2x^{34} + 5$$

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

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

$$2x^{(3x^{45}+5)} + 1000$$

Subscripts

$$x_1$$

$$x_{12}$$

$$x_{1_2}$$

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

$$x_{1_{2_{35}}}$$

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

Greek Letters

$$\pi$$

$$\Pi$$

$$\alpha$$

$$A = \pi r^2$$

Trigonometric Functions

$$y = \sin x$$

$$y = \cos x$$

$$y = \csc \theta$$

$$y = \cos^{-1} x$$

Log Functions

$$y = \log x$$

$$y = \log_5 x$$

$$y = \ln_5 x$$

Roots

$$\sqrt{4}$$

$$\sqrt[4]{3}$$

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

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

Fraction

$$\frac{2}{5}$$

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

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

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

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

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

Brackets

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

The equivalence class of a is $[a]$.
Set $A = \{1, 2, 3\}$.
Movie Ticketcost $11.25

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

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

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

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

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

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

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

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

Tables

x	1	2	3	4	5
$f(x)$	10	11	12	13	14

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

Table 1: The newly created table.

Table 2: The newly created table.

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

Arrays:

$$5x^2 - 9 = x + 3 \tag{1}$$
$$5x^2 - x - 12 = 0 \tag{2}$$

$$\begin{aligned} 5x^2 - 9 &= x + 3 \\ 5x^2 - x - 12 &= 0 \\ &= 12 + x - 3x^2 \end{aligned}$$

1. pencil
2. calculator
3. ruler
4. notebook
   (a) notes
   (b) assessments
      i. tests
      ii. project
5. highlighters

A. pencil

B. calculator

C. ruler

D. notebook

6. pencil
7. calculator
8. ruler
9. notebook

- pencil
- calculator
- ruler
- notebook

- pencil
- calculator
- ruler
- notebook
  - notes
  - assessments
    - tests
    - project
- highlighters

a) pencil

b) calculator

3 ruler

four notebook

Text Formatting:

This will produce the *italicized* text.
This will produce the **Bold** text.
This will produce the Small Caps text.
This will produce the `Typewriter font` text.
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Please visit google website at `http://www.google.com`
Please visit google website at GOOGLE.

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The line is centered.

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The line is right .

The line is centered.

The line is left .

The line is right .

1 Linear Functions

1.1 Slope Intercept form

1.1.1 Example 1

1.1.2 Example 2

1.1.3 Example 3

1.1.4 Example 4

1.2 Standard form

2 Quadratic Functions

3 Packages, Graphics and Macros

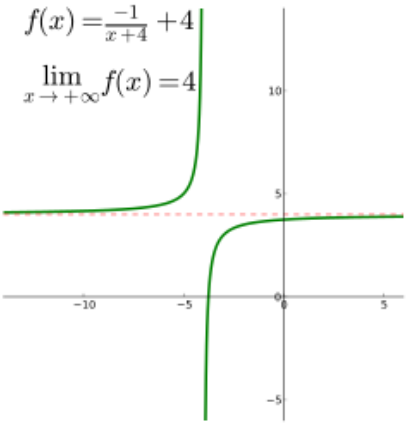

Figure 1: This is a important image.

1. 🖩 The set of all real numbers: $\mathbb{R}$

2. The set of all integers: $\mathbb{Z}$

3. The set of all rational numbers: $\mathbb{Q}$

4. Lets understand the function $y = \dfrac{1}{3x^2 + 5x + 8}$.

Calculus:

The function $f(x) = (x-3)^2 + \frac{1}{2}$ had domain $\mathrm{D}_f : (-\infty, \infty)$ and range $\mathrm{R}_f : \left[\frac{1}{2}, \infty\right)$

$$\lim_{x \to a^{-1}} f(x)$$

$$\lim_{x \to a} \frac{f(x) - f(a)}{x - a} = f'(a)$$

$$\int \sin x \, dx = -\cos x + C$$

$$\int_a^b$$

$$\int_a^b$$

$$\int_a^b x^2 \, dx = \left[\frac{x^3}{3}\right]_a^b = \frac{b^3}{3} - \frac{a^3}{3}$$

$$\sum_{n=1}^{\infty} ar^n = a + ar + ar^2 + \cdots + ar^n$$

$$\int_a^b f(x) \, dx = \lim_{x \to \infty} \sum_{k=1}^{n} f(x_k) \cdot \Delta x$$

$$\vec{v} = v_1 \vec{i} + v_2 \vec{j} = \langle v_1, v_2 \rangle$$

$$\frac{dy}{dx}$$