LaTeX Tutorial

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1 COMMON MATHEMATICAL NOTATION

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

$$y = \sin x$$

$$y = \cos x$$

$$y = \csc \theta$$

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

$$y = \arcsin x$$

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

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

2 BRACKETS, TABLES, ARRAYS

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

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

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

The movie ticket costs $11.50.

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

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

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

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

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

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

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

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: These values represent the function $f(x)$.

Table 2: These values represent the function $f(x)$.

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

Arrays:

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

$$5x^2 - x - 12 = 0 \tag{2}$$

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

3 Creating Lists

1. pencil
2. calculator
3. ruler
4. notebook
    (a) notes
    (b) homework
    (c) assessments
        i. tests
        ii. quizzes
        iii. journal entries
5. highligthers

- pencil
- calculator
- ruler
- notebook

A. pencil

B. calculator

C. ruler

D. notebook

i. pencil

ii. calculator

iii. ruler

iv. notebook

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