

# LaTeX Tutorial

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# 1 COMMON MATHEMATICAL NOTATION

superscripts

$$2x^3$$

$$2x^{[34]}$$

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

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

subscripts

$$x_1$$

$$x_{12}$$

$$x_{1_2}$$

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

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

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.

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

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

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

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

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

$$\frac{dy}{dx}\Big|_{x=1}$$

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