Superscripts

$$2x^3$$

$$2x^{34}$$

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

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

Subscripts

$$x_1$$

$$x_1 2$$

$$x_{12}$$

$$x_{1_2}$$

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

$$x_0, x_1, x_2, \ldots, x_{100}$$

Greek letters

$$\pi$$

$$\Pi$$

$$\alpha$$

$$A = \pi r^2$$

Trigonometric Functions

$$y = sinx$$

$$y = \sin x$$

$$y = \cos x$$

$$y = \csc x$$

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

$$y = \arcsin x$$

Logarithmic Functions

$$y = logx$$

$$y = \log x$$

$$y = \log_3 x$$

$$y = \log_e x$$

Roots

$$\sqrt{2}$$
$$\sqrt[3]{2}$$
$$\sqrt{x^2}$$
$$\sqrt{x^2+y^2}$$
$$\sqrt{1+\sqrt{x}}$$

Fractions

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

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

About $\dfrac{2}{3}$ of the glass is empty.

About $\dfrac{2}{3}$ of the glass is empty.

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