superscripts

$$2x^3$$

$$2x^{34}$$

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

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

Subscript

$$x_1$$

$$x_{123}$$

$$x_{1_2}$$

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

lower dots

$$a_0, a_1, a_3, \ldots, a_{100}$$

centre dots

$$a_0, a_1, a_3, \cdots, a_{100}$$

Greek Letters

$$\alpha$$

$$A = \pi r^2$$

Trig Functions

$$y = \sin x$$

$$y = \cos x$$

$$y = \csc \theta$$

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

$$y = \arcsin x$$

Log Function

$$y = \log x$$

$$y = \log_{10} x$$

$$y = \ln x$$

Roots

$$\sqrt{2}$$

$$\sqrt[3]{9}$$

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

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

Fractions

$$\frac{3}{5}$$

Without Displaystyle :About $\frac{2}{3}$ of the Glass is full.

With Displaystyle :About $\displaystyle\frac{2}{3}$ of the Glass is full

With dfrac : About $\dfrac{2}{3}$ of the Glass is full[11pt]

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

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