superscripts:

$$2x^3$$

$$2x^{34}$$

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

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

subscripts:

$$x_1$$

$$x_{12}$$

$$x_{12}$$

greek letters:

$$\pi$$

$$\alpha$$

$$A = \pi r^2$$

trig functions

$$y = \sin x$$

log functions:

$$\log_{10} x$$

$$\ln x$$

square roots:

$$\sqrt{2}$$

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

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

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

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

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

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

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

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