This is the symbol for the set of all real numbers: $\mathbb{R}$

This is the symbol for the set of all integers: $\mathbb{Z}$

This is the symbol for the set of all rational numbers: $\mathbb{Q}$

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

$$y = \sin x$$

$$y = \csc \theta$$

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

Log functions:

$$\log x$$

Fractions:

$$\frac{1}{2}$$

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

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Calculus:

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

$$\lim_{x \to \infty} f(x)$$

$$\lim_{x \to a} \frac{f(x) - f(a)}{x - a}$$

$$\int_a^b f(x)dx$$

$$\int \sin x dx = -\cos x + C$$

$$displaystyle \int_a^b x^2 dx = \left[\frac{x^3}{3}\right]_a^b$$

Align:

$$5x^2 - 9 = x + 3 \tag{1}$$
$$5x^2 - 9x + 4 = 0 \tag{2}$$

$$\begin{aligned} 5x^2 - 9 &= x + 3 \\ 5x^2 - 9x + 4 &= 0 \end{aligned}$$

$$5x^2 - 9 = x + 3 \tag{3}$$
$$5x^2 - 9x + 4 = 0 \tag{4}$$

Sum:

$$\sum_{i=1}^{n} i = \frac{n(n+1)}{2}$$

Vector:

$$\vec{v} = \langle 1, 2, 3 \rangle$$