Calculus – notations

The function $f(x) = (x-3)^2 + \frac{1}{2}$ has domain $\mathrm{D}_f : (-\infty, +\infty)$ and range $\mathrm{R}_f : \left[\frac{1}{2}, +\infty\right)$

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

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

$$\int \sin x \, \mathrm{d}x = -\cos x + C$$

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$$\int_a^b$$

$$\int_0^{50} x^2 \, \mathrm{d}x$$

$$or, \left[\frac{x^3}{3}\right]_0^{50} + C$$

$$or, \left[\frac{(50^3) - (0^3)}{3}\right] + C$$

$$\sum_{n=1}^{\infty} ar^n = a + ar + ar^2 + \cdots + ar^n$$

$$\int_a^b f(x)\,dx = \lim_{x \to \infty} \sum_{k=1}^{n} f(x_k) \cdot \Delta x$$

$$\vec{A} = A_1\vec{i} + A_2\vec{j} + A_3\vec{k} = \langle A_1, A_2, A_3 \rangle$$