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

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

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

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

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$$\int_a^b$$

$$\int\limits_a^b$$

$$\int\limits_a^b$$

$$\int\limits_{2a}^{2b}$$

$$\int\limits_a^b x^2 \, dx = [\frac{x^3}{3}]$$

$$\int\limits_a^b x^2 \, dx = \left[\frac{x^3}{3}\right]_a^b = \frac{b^3}{3} - \frac{a^3}{3}$$

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

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

$$\vec{v} = v_1 \vec{i} + v_2 \vec{j} = \langle v_1, v_2 \rangle$$