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

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

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

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