

The function  $f(x) = (x - 3)^2 + \frac{1}{2}$  has domain  $D_f : (-\infty, \infty)$  and range  $R_f : [\frac{1}{2}, \infty)$

$$\lim_{x \rightarrow a} f(x)$$

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

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

$$\int_a^b$$

$$\int_{2a}^b$$

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

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

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

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