

Calculus

Tristan Slater

September 26, 2022

1 Fundamental Theorem of Calculus

$$\frac{d}{dx} \int_a^x f(t) dt = f(x) \quad (1)$$

$$\int_a^b f(x) dx = F(b) - F(a) \quad (2)$$

2 Riemann Sums

$$\int_a^b f(t) dt = \sum_{k=1}^{\infty} \Delta x f(x_k) \quad (3)$$

$$\Delta x = \frac{b-a}{n} \quad (4)$$

$$x_k = a + k\Delta x \quad (5)$$

3 Antiderivative

$$\int f(t) dt = \int_{F^{-1}(0)}^x f(t) dt \quad (6)$$