

Rules for Antiderivatives

The Power Rule for Integrals (Theorem):

- Suppose that $n \neq -1$. Then,

$$\int x^n dx = \frac{x^{n+1}}{n+1} + C. \quad (1)$$

The Constant Multiple Rule for Integrals (Theorem):

- If a is a real number, then

$$\int a f(x) dx = a \int f(x) dx. \quad (2)$$

The Sum Rule for Integrals (Theorem):

- For two functions, $f(x)$ and $g(x)$,

$$\int (g(x) \pm f(x)) dx = \int g(x) dx \pm \int f(x) dx. \quad (3)$$