

## Basic Integration Rules

$$\bullet \int 0 \, dx = C$$

$$\bullet \int k \, dx = kx + C$$

$$\bullet \int k f(x) \, dx = k \int f(x) \, dx$$

$$\bullet \int f(x) \pm g(x) \, dx = \int f(x) \, dx \pm \int g(x) \, dx$$

$$\bullet \int x^n \, dx = \frac{x^{n+1}}{n+1} + C \quad \text{for } n \neq -1 \quad \leftarrow \text{Power rule}$$

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

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

$$\bullet \int \sec^2 x \, dx = \tan x + C$$

$$\bullet \int \csc^2 x \, dx = -\cot x + C$$

$$\bullet \int \sec x \tan x \, dx = \sec x + C$$

$$\bullet \int \csc x \cot x \, dx = -\csc x + C$$

in Future:

$$\bullet \int e^x \, dx = e^x + C$$

$$\bullet \int \frac{1}{x} \, dx = \ln|x| + C$$