

$$[f(g(h(x)))]' = f'(g(h(x))) \cdot g'(h(x)) \cdot h'(x).$$

$$\left[\int_a^x f(t) dt \right]' = f(x).$$

$$\left[\int_{h(x)}^{g(x)} f(t) dt \right]' = f(g(x)) \cdot g'(x) - f(h(x)) \cdot h'(x).$$

$$\sec x = \frac{1}{\cos x}.$$

$$[\arcsin x]' = \frac{1}{\sqrt{1-x^2}}.$$

$$[\arccos x]' = \frac{-1}{\sqrt{1-x^2}}.$$

$$[\arctan x]' = \frac{1}{1+x^2}.$$

求完后：将 x 代回 u .

加上常数 C .

$$u = g(x).$$

$$du = g'(x) dx.$$

注意定域 \rightarrow 加绝对值.

$$u = f(t).$$

$$du = f'(t) dt.$$

系数!!! 系数!!! 系数!!!

1. 系数

2. \int 代入时应代入未知数本身.



$$\text{绕 } x \text{ 轴: } V = \pi \int_a^b [f(x)]^2 dx.$$

$$\text{绕 } y \text{ 轴: } V = 2\pi \int_a^b [f(x)]^2 x dx.$$

与 \sin/\cos 有关极限 \Rightarrow 想想 Squeeze.

$$\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$$

$$\lim_{x \rightarrow 0} \frac{e^x - 1}{x} = 1.$$

$$\lim_{x \rightarrow 0} \frac{\cos x}{x} = 0.$$