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

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

$$\Downarrow$$

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

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

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

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

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

$\lim\limits_{x\to 0} \frac{\sin x}{x} = 1$

$\lim\limits_{x\to 0} \frac{e^x - 1}{x} = 1$.

$\lim\limits_{x\to \infty} \frac{\cos x}{x} = 0$.

求完后：将 x 代回 u.

加上常数 C.

$u = g(x)$.

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

$u = f(t)$.

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

注意定义域 -> 加绝对值.

系数!!! 系数!!! 系数!!!

1. 求导系数

2. $\int$ 代入时 应代入未知数本身.

绕x轴：$V = \pi \int_a^b [f(x)]^2\,dx$.

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

与 sin/cos 有关极限 => 想想 squeeze.