

$$\int x \cdot \underbrace{\overbrace{\cos x}^{\text{导函数}} \underbrace{d(\overbrace{x}^{\text{原函数}})}_{\text{先做}}}_{\text{先做}} \leftarrow \text{把} \cos x \text{ 拿到 } d \text{ 里面, 就变成 } d(\sin x)$$

其实倒过来想, 就是一个“求微分”的操作: $d(\overbrace{\sin x}^{\text{原函数}}) = \overbrace{\cos x}^{\text{导函数}} dx$

$$= \int \underbrace{x}_{\text{前}} \underbrace{d(\sin x)}_{\text{后}} \leftarrow \text{根据分部积分法 } \int \text{前 } d(\text{后}) = \text{前} \cdot \text{后} - \int \text{后 } d(\text{前})$$

$$= x \sin x - \underbrace{\int \overbrace{\sin x}^{\text{导函数}} d(x)}_{= -\cos x + C} = x \sin x + \cos x + C$$