

方法 1

$$\begin{aligned} I &= \frac{1}{2} \int \sin 2x dx = -\frac{1}{4} \cos 2x + C_1 \\ &= \frac{1 - 2 \cos^2 x}{4} + C_1 \\ &= -\frac{1}{2} \cos^2 x + C \end{aligned}$$

方法 2 (部分積分)

$$\begin{aligned} I &= -\cos x \cos x - \int \cos x \sin x dx \\ &= -\cos^2 x - I \end{aligned}$$

よって

$$I = -\frac{1}{2} \cos^2 x + C$$