

$$\int \cos^2 x \sin^3 x \, dx$$

$$= \int \cos^2 x (1 - \cos^2 x) \sin x \, dx$$

$$\text{ここで } t = \cos x \text{ とおくと}$$

$$dt = -\sin x \, dx.$$

$$\text{したがって (5式)} = \int t^2 (1 - t^2) \times (-dt)$$

$$= \int (t^4 - t^2) \, dt$$

$$= \frac{1}{5} t^5 - \frac{1}{3} t^3 + C$$

$$= \frac{1}{5} \cos^5 x - \frac{1}{3} \cos^3 x + C \quad (C \text{ は任意})$$