

$$\int \frac{\sin x \cos x}{2 + \cos x} dx$$

$$t = \cos x + 2 \quad \text{とおく}$$

$$dt = -\sin x dx \quad \text{であり} \quad \cos x = t - 2 \quad \text{より}$$

$$(\text{与式}) = \int \frac{t-2}{t} \cdot (-dt)$$

$$= \int \frac{-t+2}{t} dt$$

$$= \int \left(-1 + \frac{2}{t}\right) dt$$

$$= -t + 2 \log |t| + C_1 \quad (C_1 \text{ は定数})$$

$$= -(\cos x + 2) + 2 \log |\cos x + 2| + C_1$$

$$= -\cos x + 2 \log |\cos x + 2| + C$$

$$= \boxed{-\cos x + 2 \log (\cos x + 2) + C} \quad (C \text{ は定数})$$