

$$\int \frac{e^{2x}}{1-e^x} dx \quad \begin{array}{l} \text{1. 変数 } t=e^x \text{ とおくと} \\ dt=e^x \cdot dx \text{ より} \end{array}$$

$$\int \frac{e^{2x}}{1-e^x} dx = \int \frac{t}{1-t} dt$$

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

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

$$= -t - \log |1-t| + C$$

$$= -e^x - \log |1-e^x| + C$$

(Cは定数)