

$$\begin{aligned} 34. \int \frac{2}{7e^x + 4} dx &= 2 \int \frac{1}{7e^x + 4} \frac{e^{-x}}{e^{-x}} dx = 2 \int \frac{e^{-x}}{7 + 4e^{-x}} dx \\ &= 2 \left( -\frac{1}{4} \right) \int \frac{1}{(7 + 4e^{-x})} (-4e^{-x}) dx \\ &= -\frac{1}{2} \ln |7 + 4e^{-x}| + C \end{aligned}$$