

解：

$$\begin{aligned} I &= \frac{1}{2} \int 2x \mathrm{d}e^{2x} \\ &= \frac{1}{2} [2xe^{2x} - \int e^{2x} \mathrm{d}2x] \\ &= \frac{1}{2} [2xe^{2x} - e^{2x}] + C \\ &= (x - \frac{1}{2})e^{2x} + C \end{aligned}$$