

$$1 \mid \int_1^2 \frac{e^{\frac{1}{x}}}{x^2} dx$$

$$\begin{aligned}\int -e^u du &= -e^u + C \\ &= -e^{\frac{1}{2}} + e^1 \\ &= e - e^{\frac{1}{2}}\end{aligned}$$

$$2 \mid \int_0^1 r e^{\frac{r}{2}} dr$$

$$\begin{aligned}\int_0^1 r e^{\frac{r}{2}} dx &\implies \int r \frac{2}{r} e^{\frac{r}{2}} dx \\ &= \frac{2}{r} e^{\frac{r}{2}}\end{aligned}$$