$$\int e^{-pt}dt \quad \leftarrow \text{令} u=-pt,\ (p \text{是常数})$$

$$\frac{d}{dt}(u)=(-pt)'=-p$$

$$\text{即}\ dt=\frac{du}{-p}=-\frac{1}{p}du$$

$$=\int e^{u}\cdot\left(-\frac{1}{p}\right)du$$

$$=-\frac{1}{p}\underbrace{\int e^{u}du}_{=e^{u}+C} \quad \leftarrow \text{然后把} u \text{换回} t,\ \text{因为} u=-pt$$

$$=-\frac{1}{p}\cdot e^{-pt}+C$$