

72. Solution: E

We are given that R is uniform on the interval $(0.04, 0.08)$ and $V = 10,000e^R$

Therefore, the distribution function of V is given by

$$\begin{aligned} F(v) &= \Pr[V \leq v] = \Pr[10,000e^R \leq v] = \Pr[R \leq \ln(v) - \ln(10,000)] \\ &= \frac{1}{0.04} \int_{0.04}^{\ln(v) - \ln(10,000)} dr = \frac{1}{0.04} r \Big|_{0.04}^{\ln(v) - \ln(10,000)} = 25 \ln(v) - 25 \ln(10,000) - 1 \\ &= 25 \left[\ln\left(\frac{v}{10,000}\right) - 0.04 \right] \end{aligned}$$