

72. An investment account earns an annual interest rate R that follows a uniform distribution on the interval $(0.04, 0.08)$. The value of a 10,000 initial investment in this account after one year is given by $V = 10,000e^R$.

Determine the cumulative distribution function, $F(v)$, of V for values of v that satisfy $0 < F(v) < 1$.

(A)
$$\frac{10,000e^{v/10,000} - 10,408}{425}$$

(B)
$$25e^{v/10,000} - 0.04$$

(C)
$$\frac{v - 10,408}{10,833 - 10,408}$$

(D)
$$\frac{25}{v}$$

(E)
$$25 \left[\ln \left(\frac{v}{10,000} \right) - 0.04 \right]$$