

82. N is the random variable for the number of accidents in a single year. N follows the distribution:

$$\Pr(N = n) = 0.9(0.1)^{n-1}, \quad n = 1, 2, \dots$$

X_i is the random variable for the claim amount of the i th accident. X_i follows the distribution:

$$g(x_i) = 0.01 e^{-0.01x_i}, \quad x_i > 0, \quad i = 1, 2, \dots$$

Let U and V_1, V_2, \dots be independent random variables following the uniform distribution on $(0, 1)$. You use the inverse transformation method with U to simulate N and V_i to simulate X_i with small values of random numbers corresponding to small values of N and X_i .

You are given the following random numbers for the first simulation:

u	v_1	v_2	v_3	v_4
0.05	0.30	0.22	0.52	0.46

Calculate the total amount of claims during the year for the first simulation.

- (A) 0
- (B) 36
- (C) 72
- (D) 108
- (E) 144