

Question #82

Key: B

If you happen to remember this distribution from the Simulation text (example 4d in third edition), you could use:

$$n = \text{Int} \left(\frac{\log(1-u)}{\log q} \right) + 1 = \text{Int} \frac{\log 0.95}{\log 0.1} + 1 = 0 + 1 = 1$$

For mere mortals, you get the simulated value of N from the definition of the inverse transformation method:

$$f(1) = F(1) = 0.9$$

$$0.05 \leq 0.9 \text{ so } n = 1$$

$$x_1 = \frac{1}{\lambda} \log^{(1-v_1)} = -\frac{1}{0.01} \log 0.7 = 35.67$$

The amount of total claims during the year = 35.67