

68. Solution: C

Note that X has an exponential distribution. Therefore, $c = 0.004$. Now let Y denote the claim benefits paid. Then $Y = \begin{cases} x & \text{for } x < 250 \\ 250 & \text{for } x \geq 250 \end{cases}$ and we want to find m such that 0.50

$$= \int_0^m 0.004 e^{-0.004x} dx = -e^{-0.004x} \Big|_0^m = 1 - e^{-0.004m}$$

This condition implies $e^{-0.004m} = 0.5 \Rightarrow m = 250 \ln 2 = 173.29$.