

Question #107

Key: C

X = losses on one life

$$\begin{aligned} E[X] &= (0.3)(1) + (0.2)(2) + (0.1)(3) \\ &= 1 \end{aligned}$$

S = total losses

$$E[S] = 3E[X] = 3$$

$$\begin{aligned} E[(S - 1)_+] &= E[S] - 1(1 - F_s(0)) \\ &= E[S] - (1)(1 - f_s(0)) \\ &= 3 - (1)(1 - 0.4^3) \\ &= 3 - 0.936 \\ &= 2.064 \end{aligned}$$