

$$P(dies) = 0.9962$$

$X = \text{"net gain of the insurance company"}$

$$R_X = \{478, -89522\}$$

PDF of X:

$$p_X(k) = \begin{cases} 0.9962 & k = 478 \\ 0.0038 & k = -89522 \end{cases}$$

Then the expected value for the company is  $\mathbf{E}[X]$ :

$$\mathbf{E}[X] = \sum_{x \in R} x p_X(x) = 478 * 0.9962 - 89522 * 0.0038 = 136$$