

Question #251

Key: D

We have $\mu(\theta) = 4\theta$ and $\mu = 4E(\theta) = 4(600) = 2400$. The average loss for Years 1 and 2 is 1650 and so $1800 = Z(1650) + (1 - Z)(2400)$ which gives $Z = 0.8$. Because there were two years, $Z = 0.8 = 2/(2 + k)$ which gives $k = 0.5$.

For three years, the revised value is $Z = 3/(3 + 0.5) = 6/7$ and the revised credibility estimate (using the new sample mean of 2021), $(6/7)(2021) + (1/7)(2400) = 2075.14$.