

Question #273

Key: B

For the severity distribution the mean is 5,000 and the variance is $10,000^2/12$. For credibility based on accuracy with regard to the number of claims,

$$2000 = \left(\frac{z}{0.03} \right)^2, \quad z^2 = 1.8$$

where z is the appropriate value from the standard normal distribution. For credibility based on accuracy with regard to the total cost of claims, the number of claims needed is

$$\frac{z^2}{0.05^2} \left(1 + \frac{10000^2 / 12}{5000^2} \right) = 960.$$