Stat 346 Homework #7

Homework Questions

1. The full credibility standard for the total amount of claims is set so that the observed claim severity would be within 5% of the true value with probability 0.95. The distribution of claim severities follows the pdf:
$$f(x) = \frac{100 - x}{5000}, \quad 0 \le x \le 100.$$
   Determine the expected number of claims necessary to obtain full credibility.

2. The standard for full credibility of 1000 claims has been selected so that the actual pure premium will be within 10% of the expected pure premium 95% of the time. The number of claims follows a Poisson distribution. Determine the coefficient of variation of the severity distribution. [1.266]

3. The full credibility standard for the total amount of claims is set so that the observed amount of claims would be within 5% of the true value with probability 0.95. Suppose 15 past years' losses are available from a policyholder. Over those 15 years they have had 10 years of 0 losses, 3 years of losses equal to 500, and two years of losses equal to 1000. Using limited fluctuation credibility theory, calculate the partial credibility for this individual assuming the manual rate is $M = 220$.