

# EXAM C QUESTIONS OF THE WEEK

S. Broverman, 2007

## Week of October 8/07

Aggregate claims per period  $S$  has a compound Poisson distribution. You have determined that a sample size of 4000 claims is necessary for full credibility for aggregate claims per period if the severity distribution is constant. If the severity distribution is exponential with mean 1000, find the number of claims needed for full credibility of aggregate claims per period.

**The solution can be found below.**

## **Week of October 8/07 - Solution**

If the severity distribution has variance  $Var[Y] = 0$ , then  $4000 = n_0 \cdot \left[ 1 + \frac{Var[Y]}{(E[Y])^2} \right] = n_0$ .

If  $Var[Y] = 1,000,000$ ,  $E[Y] = 1,000$ , then the standard for full credibility of aggregate claims based on number of claims is  $n_0 \cdot \left[ 1 + \frac{Var[Y]}{(E[Y])^2} \right] = 4000 \cdot \left[ 1 + \frac{1,000,000}{(1000)^2} \right] = 8000$ .