

Question #263

Key: B

$$\mu(\lambda) = v(\lambda) = \lambda$$

$$\mu = v = E(\lambda) = 0.1\Gamma(1+1/2) = 0.088623$$

$$\text{VHM} = a = \text{Var}(\lambda) = (0.1)^2\Gamma(1+2/2) - 0.088623^2 = 0.002146$$

$$Z = \frac{500}{500 + 0.088623/0.002146} = 0.92371.$$

The estimate for one insured for one month is $0.92371(35/500) + 0.07629(0.088623) = 0.07142$. For 300 insureds for 12 months it is $(300)(12)(0.07142) = 257.11$.