

MA (ST) 412 Supplement to 7.4

1. (Continuation of Example 6.3.3) Consider a \$10,000 fully discrete whole life insurance. Let π denote an annual premium for this policy and $L(\pi)$ denote the loss-at-issue random variable for one such policy on the basis of the Illustrative Life Table, 6% interest and issue age 35.
 - (a) Determine the premium π_a such that the distribution of $L(\pi_a)$ has mean 0. Calculate the variance of $L(\pi_a)$. (The solution is on page 184, and was discussed in class.)
 - (b) Determine the the fully discrete benefit reserves ${}_kV_{35}$ and $Var({}_kL)$ for $k = 1, 2, 3, 4$. (The solution for this problem was presented in class. Some sample values are

$${}_1V_{35} = 68.6437$$

$$Var({}_1L) = 2,517,785$$

$${}_3V_{35} = 215.0601$$

$$Var({}_3L) = 2,740,226$$