

MATH 3631 - Actuarial Mathematics II

Spring 2020 - Valdez

Quiz No. 2

Wednesday, 10 February 2020

Name: Emil

Student ID: Suggested Solutions

For a fully discrete whole life insurance issued to (x) , you are given:

- The only expenses are 25 at the beginning of the first year and 5 each year thereafter.
- Expenses are payable at the beginning of each year the policyholder is alive.
- $\ddot{a}_x = 12.1$ $\ddot{a}_{x+15} = 8.3$

Calculate the expense reserve at the end of 15 years.

Expense reserve is the difference between gross and net premium reserves

Recmp extra first year expenses 5 follows

$${}_{15}V^e = \frac{-20 \ddot{a}_{x+15}}{\ddot{a}_x} = \frac{-20 (8.3)}{12.1} = -13.71901$$
$$\approx \underline{\underline{-13.72}}$$