

## Life Insurance II

### HW 5: Expense-loaded premium reserve

Compute, plot, and compare the net premium reserves and the expense-loaded premium reserves for:

- 1) The **pure endowment** insurance until 65 years with the net annual premium collected during the whole period with  $SI = 1\,000\,000$ .
- 2) The **term insurance** until 65 years with the net annual premium collected during the whole period with  $SI = 1\,000\,000$ .
- 3) The **life annuity due** deferred until the age 65 years with the net annual premium collected during the deferment period with  $SI = 120\,000$ .

Consider the input ages  $x = 20, 25,$  and  $30$  years. Use the unisex life tables (TIR=1.2%) and the corresponding commutation functions. The expenses values are

Alpha = 4%,  
Beta = 5%,  
Gamma = 0.4%,  
Delta = 0.5%.

**Please send a PDF file with the results in the format *surname\_name\_hw5.pdf* to my e-mail.**

**DEADLINE: May 14, 2020**