

MATH 3631 - Actuarial Mathematics II
Spring 2018 - Valdez
Quiz No. 3
Monday, 26 February 2018

Name: _____ Student ID: _____

An insurance company issues 500 fully discrete whole life insurance policies of \$100,000 to individuals age 55 with independent future lifetimes. You are given:

- The following actual and expected experience in year 11:

Experience	actual	expected
Gross annual premium	\$ 6000	\$ 6000
Maintenance expenses per policy (payable b.o.y.)	425	300
Claim expenses per policy (payable at death)	125	200
q_{65}	0.06	0.04
Annual effective rate of interest	0.062	0.050

- Profits are calculated based on the following (per policy) gross premium reserves:

$${}_{10}V^g = 30,000 \quad {}_{11}V^g = 34,872$$

- At the end of the 10th year, 325 (of these) insurances remain in force.

Calculate the total gain or loss for the 11th year on this portfolio.