Name: _____   Quiz Score: _____ /20

Quiz 3: Thursday, February 5, 2015

1. An insurer issues a whole life insurance policy with sum insured $500,000 to a select life aged 47. Level monthly premiums are payable throughout the term of the policy. The insurer incurs expenses of 10% of the total of the first year's premiums at the issue of the policy. Renewal expenses are 3% of each premium, including those of the first year. The death benefit is payable at the end of the month of death.

   (a) Write down a formula for L_0^g, the present-value-of-gross-future-loss random variable. *(Simplify if possible.)*

   (b) Find an expression for the monthly premium, P, using the equivalence premium principle. *(Write it in terms of actuarial symbols; you don't have enough information to find a numerical answer.)*