

MAP 4176 / 5178  
Test 3

Name: \_\_\_\_\_  
Date: February 3, 2016

Show all work for full credit, use correct notation, and clearly mark your answer.

1. A whole life insurance is issued to  $(30)$  with a benefit of 10,000 payable at the end of the semiannual period of death. Using ILT actuarial assumptions and the UDD assumption between integer ages, determine the expectation of the present value of the benefit random variable.
2. A 30-year term life insurance is issued to  $(20)$  with a benefit of 100,000 payable at the end of the month of death. Using ILT actuarial assumptions and the claims acceleration approach, determine the actuarial present value of the insurance.
3. Given  $\bar{A}_x = 0.688$ ,  $\bar{A}_{x:\bar{n}|} = 0.841$ , and  ${}_nE_x = 0.614$ , determine  ${}_n|\bar{A}_x$ .

4. A 10-year deferred whole life insurance of 30,000 issued to (35) pays the death benefit at the end of the month of death. Using DML( $\omega = 95$ ) mortality,  $i = .06$ , and the UDD assumption between integer ages, determine the expected present value of this insurance.

5. A 20-year endowment insurance of 5,000 is issued to (40). The death benefit is payable at the end of the quarter of death. Using CF( $\mu = .02, \delta = .03$ ) and the claims acceleration approach, determine the actuarial present value of this insurance.