

Module 2 Section 8 Exercises:

1. A whole life annuity due issued to (35) has annual payments of 1000. Determine the expected present value of the annuity using ILT mortality and an annual effective interest rate of 5% for the first two years and 6% thereafter.
2. A whole life insurance policy issued to (40) pays a death benefit of 100000 at the end of the year of death. Actuarial assumptions follow the ILT except for the first year (a 1-year select period) in which the mortality rate is modified to 75% of standard ILT mortality. Determine the APV of the insurance.
3. You are given:
 $A_{x:\overline{1}|} = .95$
 $q_x = .02$
 $A_x = .4$
 ${}^2A_x = .2$
Determine the variance of the present value random variable for a discrete whole life insurance of 1000 issued to $(x+1)$.
4. Determine the actuarial accumulated value of a 20-year temp annuity due issued to 30 with annual payments of 100, using ILT actuarial assumptions.
5. Determine the actuarial accumulated value of a discrete 20-year endowment insurance of 100 issued to 30, using ILT actuarial assumptions.