

MATH 3630 - Actuarial Mathematics I
Fall 2012 - Valdez
Homework No. 4
due Wednesday, 6:15 PM, 7 November 2012

Please return this page with your signature. Please write your name and student number at the spaces provided:

Name: _____ **Student ID:** _____

I certify that this is my own work, and that I have not copied the work of another student.

Signature: _____ **Date:** _____

Circle your class lecture: 3–4:15 PM 5–6:15 PM

For a special whole life insurance policy issued to (40) , you are given:

- Benefits are payable at the end of the year of death.
- The death benefit is \$100,000 during the first 25 years and reduces to \$50,000 thereafter.
- $i = 6\%$

Calculate the Actuarial Present Value (APV) of the benefits based on each of the following assumptions:

1. Mortality follows the **Illustrative Life Table**.
2. Mortality follows De Moivre's law with $\omega = 110$.
3. Mortality follows a constant force $\mu_x = 0.009$ for all $x > 0$.