MA 418 ∼ ACTUARIAL MATHEMATICS I

NAME: _____

CH 6 - PREMIUMS/LOSS FORMULAS HOMEWORK

Define the future loss variables (not their expected value, and use proper notation) and derive the following relationships regarding policy premiums.

1. Fully cont, whole life ins:

    (a) L_0^n

    (b) $P = \frac{\delta \bar{A}_x}{1 - \bar{A}_x} = \frac{1}{\bar{a}_x} - \delta$

    (c) What is P if $\mu_x = \mu$ for all x?

2. Fully cont, n-year endowment ins:

    (a) L_0^n

    (b) $P =$? (find both versions)

    (c) What is P if $\mu_x = \mu$ for all x?

3. Fully cont, n-year term ins:

    (a) L_0^n

    (b) $P =$? (find both versions ???)

    (c) What is P if $\mu_x = \mu$ for all x?

4. Fully discrete, whole life ins:

    (a) L_0^n

    (b) $P =$? (find both versions)

    (c) What is P if $q_x = q$ for all x?

5. Fully discrete, n-year endowment ins:

    (a) L_0^n

    (b) $P =$? (find both versions)

    (c) What is P if $q_x = q$ for all x?

6. Fully discrete, n-year term ins:

    (a) L_0^n

    (b) $P =$? (find both versions ???)

    (c) What is P if $q_x = q$ for all x?