Math 696 Homework #3 (with changes in problems)

Sects. 3.1-3.3

3-3.  \( i = .08 \)

3-4.  \( i = .08 \)

3-7. Compare the value of \( a_{n|} + s_{n|} \) with \((a_{2n|} + s_{2n|})/2\). Give an actuarial argument that the two expressions are both equal to \( 2n \) if \( i = 0 \) and show that the second expression is larger than the first if \( i > 0 \).

3-19. \( i^{(4)} = ,09 \)

3-22. \( k \) \( n \)-year annuities \((1)\) beginning after 1 year, 2 years, ..., \( k \) years. Express the PV in terms of \( a_{n|} \).

3-30. a) What is the present value if the payments are made at the beginning of each \( m \)th of the year?

b) An auto loan of $20,000. is being repaid with 36 monthly payments with a nominal interest of 9% per annum convertible monthly. The first payment is due in 6 months. What is the monthly payment?

3-37. assume annual medical payments of \( X \) beginning immediately for five year and annual indemnity payments of \( 2X \) for 10 years beginning in five years, \( i = .04 \), based on an established fund of 500,000. Determine the amounts of the medical and indemnity payments.

3-41. Deposits are made for 20 years and \( i = .05 \).

3-42. The payments of \( 2X \), \( X \), \( 2X \), \( X \), \( 2X \)..., and \( i = .05 \).

3-45. Change the 20 year period to 10 years.