Life assignment

What is the value of an ordinary annuity at the end of 10 years if $300 is deposited each quarter into an account earning 7 % compounded quarterly? Also, of this total value, how much did you contribute and how much is from the interest? For 40 deposits of $300 each with [pick], we find the accumulated value as [pick] The total interest earned is the difference between the amount in the account and what you actually deposited: 17170. 24 $5170. 24.

An individual deposits $600 per month into an account paying 7. % compounded monthly. How much money will be in the account in 5 years? These 60 deposits have an accumulated value of A person wishes to have $300, 000 in an account 16 years from now. How much should be deposited each quarter in an account paying 8 % compounded quarterly in order to achieve this goal. For 64 deposits of $X each, we are given the accumulated value [pick]. Thus, solving for X we find Changing the deposit size: What if the size of the deposits changes at some point?

For example, suppose 12 monthly deposits of $100 each during the first year are followed by 24 monthly opposite of $150 each over the next two years. If the nominal interest is [pick], find the accumulated value at the end of the 3 years. Consider the following two ways of thinking about these deposits. Approach #1 We may consider and sum the first 12 deposits separately from the final 24 deposits. E TLS 12 deposits yield but taking this forward (with interest) to time t = 36 gives a value of The next 24 deposits yield as of the final deposit at time t = 36.

Thus taken together, the accumulated value at time t Approach #2 = 36 We may consider the extra $50 a month during the final 24 deposits as a separate annuity and sum these $50 deposits separately. The 36 deposits of $100 each yield an accumulated value of The 24 deposits of $50 each yield an accumulated value of as of the final deposit at t = 36. Thus taken together, the accumulated value at time t = 36 is $3898. 51 + 1264. 20 = 5162. 71, Just as in approach #1 . See problem 2. 1. In Overran for another illustration of these two equivalent approaches. Typical problem from Overran: Read problem 2. 1. 3 in the text. Consider the deposits as annuities of n deposits each. This meaner that We're given that [pick] and so [pick]. Hence, r simply, But since [pick], we find that [pick] MAT 450 Assignment: Work the following problems. Submit solutions this Friday. Problem AAA: An individual deposits $750 per month into an account with a nominal rate of [pick]. Determine the accumulated value at the end of 4 years.

Problem AAA: An individual deposits $100 per week into an account with an effective annual rate of [pick]. Determine the accumulated value at the end of 3 years. Problem AAA: An individual deposits $400 per month into an account with a nominal rate of [pick]. Determine the number of deposits required to achieve an accumulated alee of $46580. 75. Problem 2. 1. 2 (see text) Compute [pick] and determine I TTS value 3 periods later (IEEE, upon the 33rd deposit) Compute [pick] and determine its value 4 periods later (IEEE, upon the 33rd deposit).

Compute [pick]. The sum of these values is the account balance upon the 33rd deposit. The account will be credited with interest of 1% of this balance the following month. Problem 2. 1. 7 (see text) Determine each individuals

accumulated value after n years. For Smith, we have For Brown, we have For Brown, there are n – 10 years of dividends and so his total value is [pick] For the suggested values of n, set Smith’s and Brown’s totals equal to each other and solve for p. Problem 2. . 9 (see text) Here the deposits are $1 per year but the interest changes after m years. So treat 35 36 the first m deposits separately from the last n deposits. Thus the sum of these two accumulated totals may be computed using Compute this total. 100 100 150 150150 13 14 12 100 150150 100 100100 50 50 98 2 12 13 98196 14 196 19 100 . 10 20 196 196 28 150 150 29 deposit: 1 years 100 1100100100100 dividends: 80 80 sale proceeds: dividends: 80 80 200 11 40 m m+l 1 pop n+m