Activity 5

Time Value of Money: Lump Sums

Group:

Section:

1. You walk into the bank and see a sign advertising a CD special offering 5.5% per year on any 4-year investment. You check your bank account balance and decide that you can afford to invest $500 and you buy the CD. What is the total value of the account—including interest—after 4 years? Assume that interest is re-invested.

2. Your best friend graduated last year and now sells investment products for an insurance company. He was asked to find out what people might be willing to offer for a new product that the insurance company hopes will be attractive to young investors that wish to start with simple investments until they get older and acquire more investing experience. He wants you to indicate what you are willing to pay for this product that promises a $15,000 payout 7 years from today. You consider carefully and decide that over the next 7 years you would require a return of 4.5% per year. What price should you tell your friend you would pay?

3. Your rich aunt sadly just passed, but she left you $10,000. You are hoping to buy a house someday and know that you will need $40,000 to make the down payment on the home. You are perusing investment opportunities and find one offering 9.0508% per year over any maturity (i.e. as long as you like). (a) If you invest the full $10,000 your aunt left you in this opportunity, how long must you wait for it to be sufficiently large to meet your down payment needs? (b) What if you only needed $20,000 for the down payment – how long will you have to wait?

4. In the previous problem, why does it take the same amount of time to get from $10k to $20k, as it takes to get from $20k to $40k? You waited just as long, but you increased your "balance" by twice as much during the second period.