BUSS207
Financial Management
Fall, 2016

Assignment 1
(Due by Oct. 5, 2016)

Please solve the following questions. If you prefer to work in a group in completing this assignment, you may do so. Groups are limited to a maximum size of 3 students. If you work in a group, the group will turn in one solution to the assignment and everyone in the group will receive the same grade on the assignment. If you work in a group, please make sure that you write down the names of all of your group members. If more than one group works together and turns in, substantially, the same work, this violates the rules of the course and the rules on academic integrity, and penalties will be assessed. The assignment is due at the beginning of class on the due date. Please show all the intermediate steps and calculations when solving the problems and state your assumptions (if any). Please type your answers.

1. You and your spouse just had a baby. Ecstatic with the outstanding education you received at Korea University, you want to send baby to college in 18 years and be able to pay for the baby's college education. You need to estimate cost of each year of college (you're only paying for the 4 years necessary to complete a bachelor's degree) for when your baby starts college 18 years from today. Also, you want to estimate how much you need to save in order to be able to pay these future college costs. Here are some assumptions to help you with your analysis.

   - You want your baby to enjoy the same quality education at the Korea University that you received. The current annual cost estimate to cover all student expenses at the Korea University today is $25,000.
   - You anticipate that college costs will continue to rise at the recent college cost inflation rate of 3 percent annually.
   - Your baby will need annual college money at the beginning of each year. This means 4 withdrawals from baby's college fund at the beginning of her freshman year (18 years from today), sophomore year, junior year, and senior year.
   - Any money saved in baby's college fund will earn an after-tax return of 7 percent annually.
   - After the last withdrawal from the college fund for her senior year, you also want to leave some money in the fund to help her to start her career after the graduation. Thus, the balance of baby's college fund should be $10,000 after the withdrawal at the beginning of baby's senior year of college (21 years from today).

   Answer the following questions to help finalize your savings goals for baby's college fund.

   A. What will be the expected cost of each year of baby's college?

   B. One way you can fund your baby's future college costs (from the previous question) is by making a single deposit today in the college fund that pays a 7% annual rate. How large of a deposit do you need to make today?

   C. After determining the single deposit that you would need to make from the last question and sharing it with the grandparents, you get sticker shock and decide that is too much to

handle all at once today. To help you get started, the grandparents decide to deposit $2,000 today in baby's college fund. You decide to cover the rest of baby's future college costs by making 18 annual equal deposits at 7% into baby's college fund starting a year from today (the last deposit will be made when your baby starts college). How large does this annual deposit need to be in addition to the grandparents' $2,000 initial gift to baby's college fund?

D. After finding out the annual savings amount from C, you figure that you cannot save that much each year. Instead, you find that you can save only $3,500 each year. How much higher investment return should you have each year to prepare for the college fund?

2. Let's examine more thoroughly the Mariners situation of trying to be able to sign their future free agent superstars of Ken Griffey, Jr. and Alex Rodriguez in light of Kevin Brown's recent $105 million seven-year deal with the Los Angeles Dodgers. The Jan. 20 issue of Baseball Weekly reports the Mariners intend to try to sign both players after their current contracts expires after the 2000 baseball season. Let's call that 2 years from now. Speculation is that these athletes will be able to command seven-year contracts totaling $150 to $200 million. This is because Ken Griffey, Jr. has a good chance of breaking Hank Aaron's career homerun record of 755 and will only be 30 years old when he signs a new contract. Alex Rodriguez, who at 23 has already established himself as one of the best hitting (average and power) shortstops in the history of baseball, might command even more than Griffey, Jr. since he will only be 25 when he signs a new contract. Gee, the Mariners' fans will need to flock to their new ballpark in record numbers if they are going to be able to swing these deals!

   Now, I will give you a set of future contract features for each player that will be signed two years from today, and I want you to figure out today's present value cost of each contract to the Mariners at a 10 percent APR. I will assume each will demand a 7-year contract with a signing bonus two years from today. Assume the annual contract salaries will be paid at the end of each contract year, and naturally, the signing bonus will be paid at the beginning of the contract two years from today.

   A. Ken Griffey, Jr. will demand a $160 million 7-year contract that calls for a signing bonus of $20 million, $16 million annually in each of the first 3 contract years, and $23 million annually in the last 4 contract years.

   B. Alex Rodriguez will demand a $180 million 7-year contract that calls for a signing bonus of $10 million, $20 million annually in each of the first 4 contract years, and $30 million annually in the last 3 contract years.

3.

   A. Help Prof Kim on the following questions he has. Assume $1,000 has been deposited into Prof. Kim's IRA (Individual Retirement Account) at the end of each month for the past 25 years at 10% APR. How much does he have in his IRA account now? Imagine Prof. Kim is now 65 and wants to make equal monthly withdrawals from his IRA at the beginning of each month (beginning today), for the next 25 years. How large can this monthly withdrawal be?

   B. Continuing from Question A, if Prof. Kim wants to make 20% higher monthly withdrawals from his IRA account after his retirement but keeping all other information the same, how earlier should have he started his savings?

4. In this section, answer the following questions.

   A. Prof. Finance is thinking about trading cars. After using the remaining equity from his trade in as a down payment, he will still have to borrow $22,000 to pay for his new car. How large will Prof. Finance's monthly car loan payment be if he can get a 5-year (60 equal monthly payments) car loan from the National City Bank at 6.5% APR?

   B. Gateway Computer's television ads say you can get a computer that sells for $1,599 for $45 a month for 48 months. What is the APR for this computer loan?

      If the APR on this loan is 12% APR, what is the number of months that makes you indifferent in buying this computer between by paying the lump sum $1,599 and by making $45 monthly payment?

   C. Ford's recent commercials advertise $750 cash back and 0.9% APR financing for 48 months or just $1,500 cash back on an Escort or ZX2. Let's assume Suzie wants to buy the ZX2, which costs $15,000 and she has no down payment other than the cash back from Ford. If she chooses the $1,500 cash back, Suzie can borrow from the National City Bank at 7.9% APR for 48 months. What will Suzie's monthly payment be under each option? Which option should she choose?

      To make the two options indifferent to her, how lower or higher should the interest rate Suzie pays to the National City Bank be?

   D. Ronnie Rental plans to invest $100 at the beginning of each month for 3 years into an account that pays 8% APR compounded monthly. He will use this money as a down payment on a new home in 3 years. How large will his down payment be three years from today? What is the effective annual rate of this account?

   E. Your Grandma asks for your help in choosing a Certificate of Deposit (CD). CD #1 pays 5.95% APR compounded daily. CD #2 pays 6.0% APR compounded monthly. What is the effective annual rate of each CD, and which CD do you recommend to your Grandma?

   F. Dennis Rodman has a $5,000 debt balance on his Visa card that charges 23.9% APR compounded monthly. Dennis' current minimum monthly payment is 3% of his debt balance, which is $150. How many months (round up) will it take Dennis Rodman to pay off his credit card if he pays the current minimum payment of $150 at the end of each month?