Financial Management: The Time Value of Money (Case 2)

Greg and Debra Quilici own a four bedroom home in an affluent neighbourhood just north of San Francisco, California. Greg is a partner in the family owned commercial painting business. Debra now stays home with their child, Brady, who is age 5. Until recently, the Quilicis have felt very comfortable with their financial position.

After visiting Lawrence Krause, a family financial planner, the couple became concerned that they were spending too much and not putting enough funds aside for both their child's future education needs and their own retirement. Greg earns $85,000 per year, but with the rising costs of education, their past contribution efforts have left them short of their financial goals.

To estimate the amount of money the Quilicis need to begin putting away for future security some general information was obtained by their financial planner. The couple felt that the amount of money they currently contribute to their Koegh plan would be sufficient for their retirement needs. What they had not accounted for was Brady's education.

Greg is an alumni of Stanford University, a private school with an extremely high tuition of approximately $20,000 per year. Debra graduated from the University of North Carolina at Chapel Hill. The tuition expense there is only $2,500 per year. When Brady turns 18, the couple wishes to send him to either of these exceptional universities. They have a slight preference for the much more local Stanford University. The problem, however, is that with the rate at which tuition is increasing the Quilicis are not sure they can raise enough money.

To assist in the calculations, assume the tuition at both universities will increase at an annual rate of 5%. Living expenses are currently estimated at $6,000 per year at both schools. This expense is expected to grow at only 3% per year. Further assume the Quilicis can deposit their money into a growth oriented mutual fund at Neuberger & Berman Management, Inc., which has historically earned a 12% return per annum (1% per month).

The couple wishes to have a pre-determined monthly amount automatically drafted from their checking account. When Brady starts college they will slowly liquidate the account by making an annual payment to Brady to cover tuition and living expenses at the beginning of each year for the four years he will be in college.

Questions

1. How much will be the tuition and living expenses per year when Brady is ready to attend? Give an answer for each university.

2. Once Brady starts college what will his total expenses be in each of his four years? Again, give an answer for each university.

3. How much money will Greg and Debra have to deposit per month to allow Brady to attend Stanford University? How much money will have to be deposited per month to allow Brady to attend the University of North Carolina? (HINT: To answer this question you need to consider the costs of ALL four years.)

4. What if the Quilicis feel the Neuberger & Berman mutual fund will only yield 10%. How much will have to be deposited per month in order for Brady to attend each college?

5. What is the relationship between the amount that must be deposited monthly by the parents and the future increases in both tuition and living expenses?