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## Chapter Project: Funding a College Education

A college education is expensive, and its cost continues to rise as time passes. Paying for a college education can be difficult if you wait too long. Financial planning with a savings program makes the task of providing the money needed to pay for college much easier. In this project, you will build a model to determine what your needs will be in a few years, and how to address them.

The biggest costs involved in going to college are the tuition and fees, and the room and board. As a way of simplifying the problem, as well as considering an inexpensive scenario, assume that you will be living at home. Also, assume that you will receive your degree in 4 years. You will assume a budget of \$800 per year for books, and that transportation costs will be an additional \$1000 per year. (The College Board provided these figures as the 2001–2002 national average.) So, you already need \$7200 to cover those costs *before* you consider tuition and fees!

One task will be to describe the cost of tuition and fees over time, mathematically. With that, you can predict how much your four years of education will cost you at the college you plan to attend. The other task will be to determine how much money must be put into a financial investment *now*, so that you will have enough money in future years to pay for those costs. Hopefully, this model will be useful to you, as well as an opportunity to show off your mathematical prowess.

### Data Collection

There is some information that you will need for this project. Here are the things you need to research:

1. The current tuition and fees for going to various four-year colleges and universities (you can use either an average cost for all public or private institutions or the cost for the college of your choice).
2. How tuition and fees have changed over the past 10–12 years. Determine the average annual percent of increase in these costs.
3. The average annual rate of return for various investments, such as savings accounts, certificates of deposit or others.

For college data, you may want to contact the college of your choice or the College Board. For investment data, try calling a bank or brokerage firm. You may also find information on various Websites.

### Cost and Savings Calculations

You want to start a savings plan to pay for a college education in the future. The basic goal of the project is to model the cost of the education

and the growth of the savings plan. This can be by equations, graphs, tables, or spreadsheets (a convenient way to do this project!). Then you can determine how far in advance to begin the financial investment.

In addition, you must test the effectiveness of your model by considering three specific planning options. In each case, you want the account balance to equal the total of your costs by the time you start college.

1. Make a large initial investment of \$15,000 in a certificate of deposit (CD), which earns an annual interest rate equal to the market rate from your research. How far in advance should the deposit be made?
2. Make an initial investment in a savings account, earning an annual interest rate equal to the market rate from your research, 12 years before it is needed. How much money should be deposited in the savings account?
3. Make a lump-sum investment of \$15,000 into a mutual fund investment 6 years before it is needed. What rate of return (percent of increase) would be required to meet your financial goal?

### **Evaluation**

For the basic project goal and the three planning options, your written report must have a description of the situation and its solution. Use tables, graphs, and equations to support your work. If you use spreadsheets, provide a hardcopy of all tables and graphs. Be sure to include all the research data that was collected, in an organized way. Finally, you will need to make a recommendation on which of the four investment scenarios would be best for most people to use.