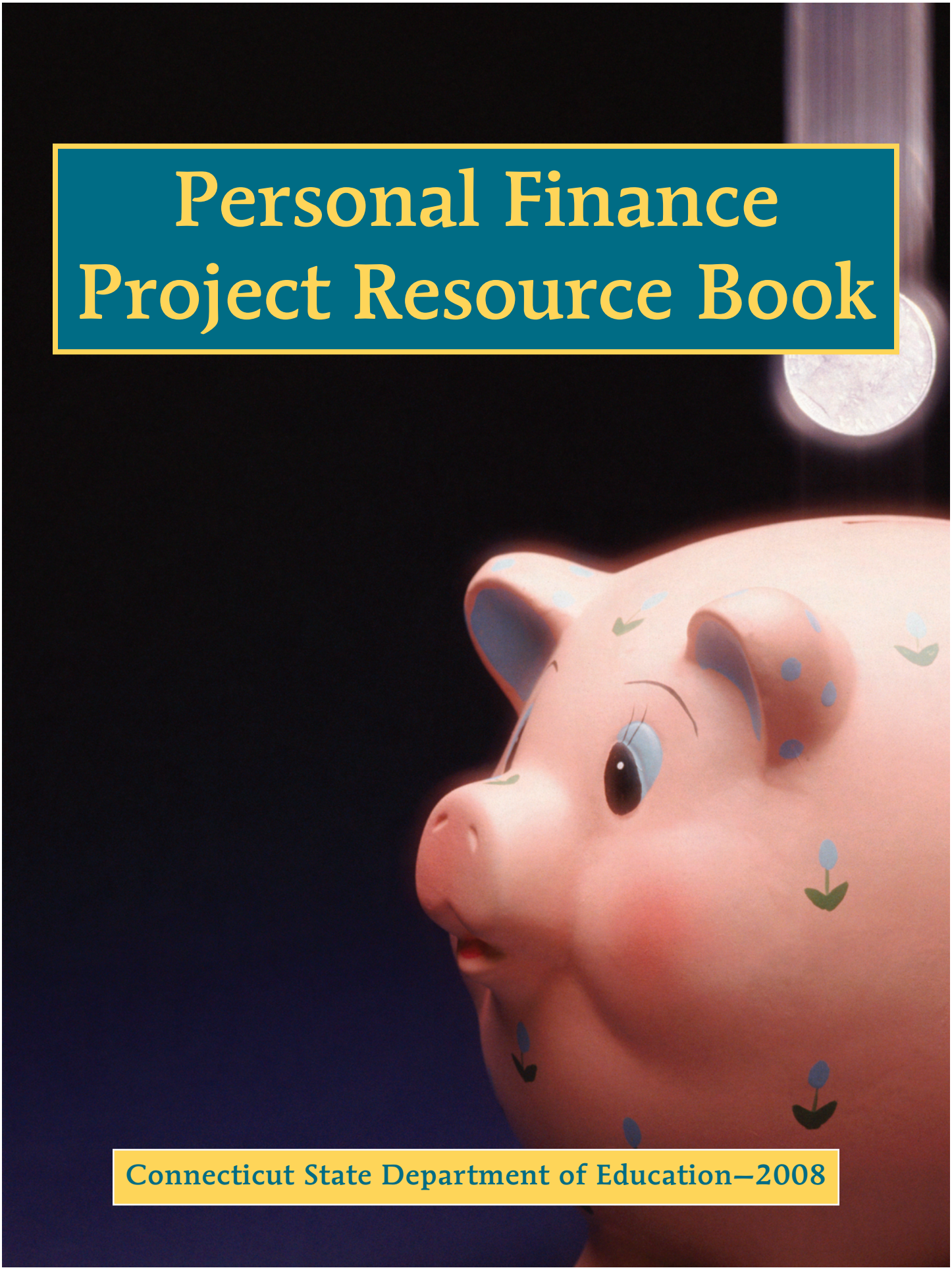
Personal Finance Project Resource Book



Connecticut State Department of Education—2008

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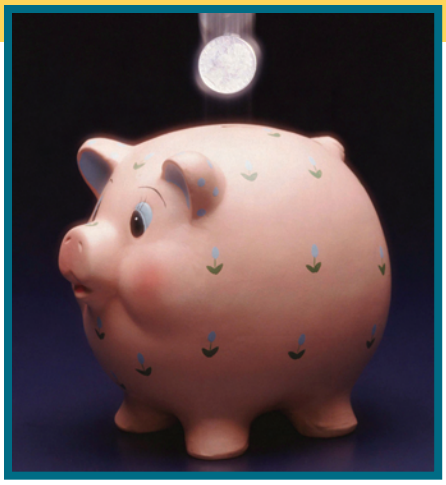
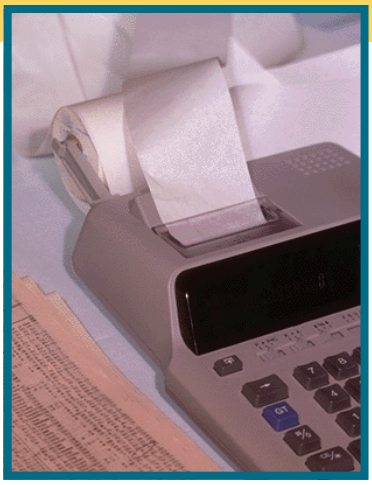
Personal Finance Project Resource Book





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Introduction

This *Personal Finance Project Resource Book* has been developed to provide high school teachers of business and mathematics with lesson plans that are designed to simulate five types of business decisions that most adults face on a regular basis. Incorporated into this document are separate student projects in the areas of federal income tax filing, budgets, credit cards, mortgages and loans, and saving and investing.

With personal debt levels continuing to rise and responsibility increasing for funding one's own retirement, it is vital that students leave high school with a strong foundation in the major components of personal finance. Students who have been exposed to these projects are reported to have returned after graduation to tell their teachers that they refer to the exercises in this five-part portfolio during adulthood.

Two Connecticut teachers – Diane Jakobsen and Kathy Deasy of Northwestern Regional High School in Winsted – developed and have co-taught this set of student projects and are hereby acknowledged by the State Department of Education for their contributions to this document.

Individuals with questions or comments about these five projects are invited to contact Lee Marcoux, business and finance technology education consultant at the Connecticut State Department of Education, by telephone at 860-713-6768, or by e-mail at lee.marcoux@ct.gov.

Federal Income Tax

Our Federal Income Tax Plan

Tax reform can be approached in a variety of ways. Some people worry that new tax plans may only help the rich and not the poor or the middle class. To understand proposed changes in tax plans, we must first understand our current tax plan.

The income tax that you pay is not a *flat tax* but a *graduated tax* based on your income level. The six tax brackets (for single taxpayers) are summarized in the table below.

CURRENT TAX TABLE

If your taxable income is	Your federal income tax bracket is
$0 ≤ x < $7,550	10 %
$ 7,550 ≤ x < $ 30,650	15 %
$ 30,650 ≤ x < $ 74,200	25 %
$ 74,200 ≤ x < $154,800	28 %
$154,800 ≤ x <$336,550	33 %
$336,550 ≤ x	35 %

Calculate the federal income tax if your taxable income was:
(show your work)

1. $5,000

2. $21,150

3. $63,940

4. $120,000

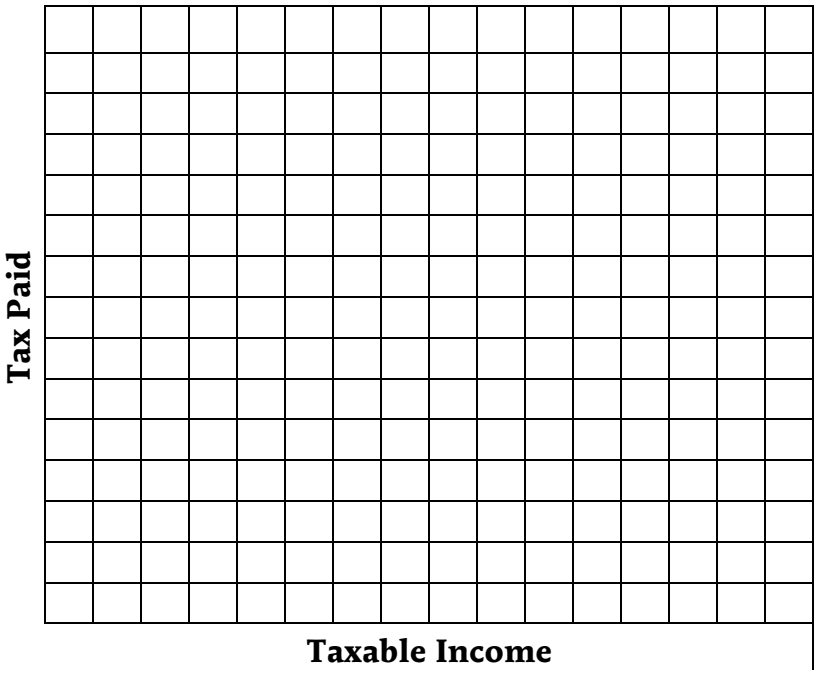
5. $300,000

6. $450,000

7. Compare the tax paid by someone who earns $74,199 to that paid by someone who earns $74,200.

8. Sketch the graph of Tax Paid vs. Taxable Income for the first two income brackets. Complete the table and plot the points to form the graph.

Taxable Income	Tax Paid
$0	
$ 3,000	
$ 6,000	
$ 7,549	
$ 7,550	
$ 9,000	
$ 12,000	
$ 15,000	
$ 18,000	
$ 21,000	
$ 24,000	
$ 30,649	
$ 30,650	



9. Use the results from #7 and #8 to explain why this tax plan is open to criticism and debate.

10. Explain how the tax rate (percentage) is related to the graph above.

11. How our taxes are actually calculated is a bit complicated, but it is done this way in the interests of fairness. Explore our current tax plan by graphing taxable income and tax paid from the chart on problem #8. The first line segment drawn, corresponding to the 10 percent bracket, is the same. Trace this line with a colored pencil or marker. To get the second line, draw the line that attaches to the endpoint of the first line and has the same slope as the second. Continue this with the remaining segments until you have one connected graph.

Federal Income Tax

12. Explain why our actual tax tables are more fair than the first plan presented.

13. Calculate the amount we pay in taxes for our current income levels. To do this you must divide your income into the different tax brackets. Suppose you earn $20,000. Then your income falls into the second tax bracket (l5 percent). You pay 15 percent on the amount of your income that is over $7,550. You pay 10 percent on the first $7,550 of your income. Here's how we would calculate the tax you would pay:

$$(0.10)(\$7{,}550) = \$755$$
$$(0.15).(\$20{,}000 - \$7{,}550) = (0.15)(\$12{,}450) = \$1{,}867.50$$

Your tax = 10 percent amount + 15 percent amount
= $755 + $1,867.50 = $2,622.50

Calculate the percentage of your income that is paid in taxes.

Explain why this percentage is not exactly 10 percent and not exactly 15 percent.

14. Calculate the actual tax paid by someone who earns $50,000.

15. When a person pays taxes on the $450,000 that he or she earns, he or she does not actually pay 35 percent on all $450,000 of the income. Ten percent of the amount that falls in the first tax bracket and 15 percent that falls in the second tax bracket are the calculations used. Complete the chart and check to see if your answer is reasonable on the modified graph.

My $450,000	**Income in the tax bracket**	**Tax paid on that income**
Income over $336,550		
Income between $154,800 and $336,550		
Income between $74,200 and $154,800		
Income between $30,650 and $74,200		
Income between $7,550 and $30,650		
Income between $0 and $7,550		
	Total Tax Paid:	

16. Complete the table below that represents the values for our actual tax plan. Show how you calculated your answers.

Taxable Income	Tax Paid
$0	
$ 7,550	
$ 30,650	
$ 74,200	
$154,800	
$336,550	
$450,000	

17. The graph that represents the tax that is paid is made up of six different segments. Find the equation of each segment in y = m x + b form.

Recall that: $$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Summarize your formulas in the table below.

If your taxable income is	The tax paid is
$ 0 $\leq$ x< $7,550	
$ 7,550 $\leq$ x < $ 30,650	
$ 30,650 $\leq$ x< $ 74,200	
$74,200 $\leq$ x < $154,800	
$154,800 $\leq$ x< $ 336,550	
$336,550 $\leq$ x	

18. Use your formulas to calculate the federal income tax if your taxable income was: (show your work)

- $5,000
- $21,150
- $63,940
- $120,000
- $300,000
- $450,000

Name: _____ Date: _____

Our Federal Income Tax Plan
Homework Questions

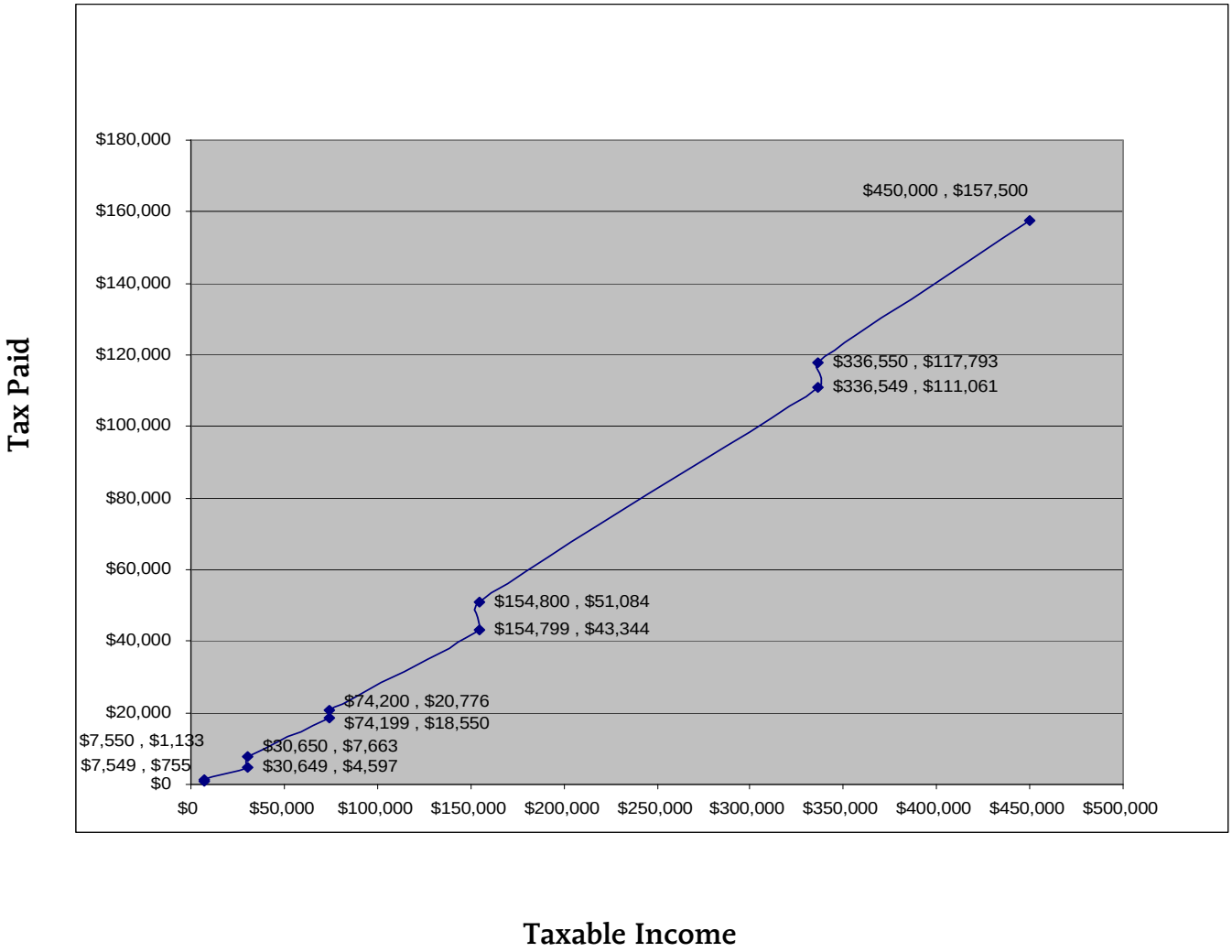
1. Explain the difference between a flat tax and a graduated income tax.

2. What is a tax bracket?

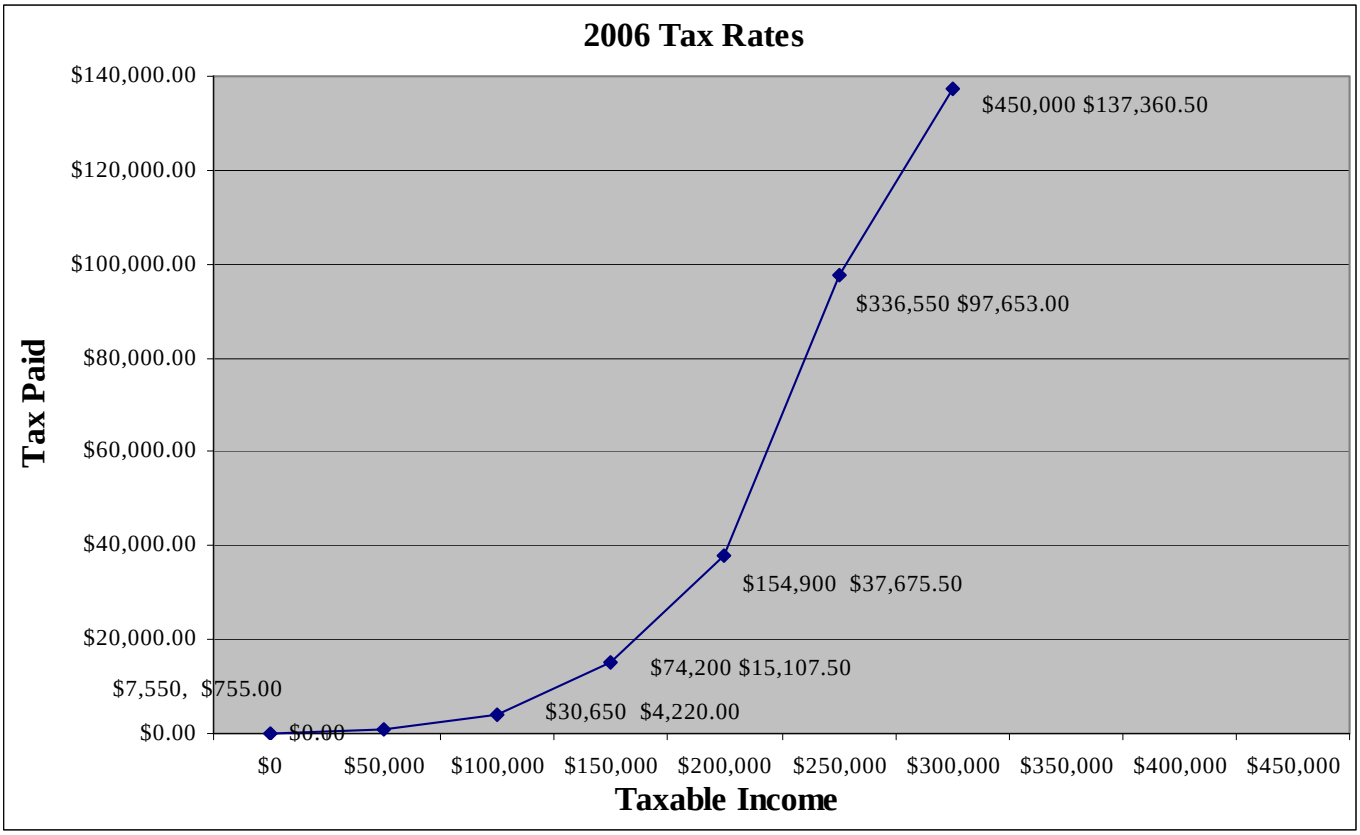
3. Explain why the income tax graph has different slopes. What is the meaning of each slope? The slope will represent the tax paid for a particular income bracket.

4. Why do we have a graduated income tax?

2006 Tax Rates
Solution #8



Solution #11


2006 Tax Rates
Tax Paid
$140,000.00
$120,000.00
$100,000.00
$80,000.00
$60,000.00
$40,000.00
$20,000.00
$0.00
$450,000 $137,360.50
$336,550 $97,653.00
$154,900 $37,675.50
$74,200 $15,107.50
$30,650 $4,220.00
$7,550, $755.00
$0.00
$0
$50,000
$100,000
$150,000
$200,000
$250,000
$300,000
$350,000
$400,000
$450,000
Taxable Income

Our Federal Income Tax Plan

Solutions

Tax reform can be approached in a variety of ways. Some people worry that new tax plans may only help the rich and not the poor or the middle class. To understand proposed changes in tax plans, we must first understand our current tax plan.

The income tax that you pay is not a *flat tax* but a *graduated tax* based on your income level. The six tax brackets (for single taxpayers) are summarized in the table below.

If your taxable income is	Your federal income tax bracket is
$0 ≤ x < $7,550	10%
$7,550≤ x < $30,650	15%
$ 30,650 ≤ x < $74,200	25%
$74,200 ≤ x < $154,800	28%
$154,800 ≤ x < $336,550	33%
$336,550 ≤ x	35%

Calculate the federal income tax if your taxable income was: (show your work)

1. $5,000 $15,000.10 = $1,500.00

2. $21,150 $27,150.15 = $3,172.50

3. $63,940 $63,940.25 = $15,985.00

4. $120,000 $120,000.28 = $33,600.00

5. $300,000 $300,000.33 = $99,000.00

6. $450,000 $450,000.35 = $157,500.00

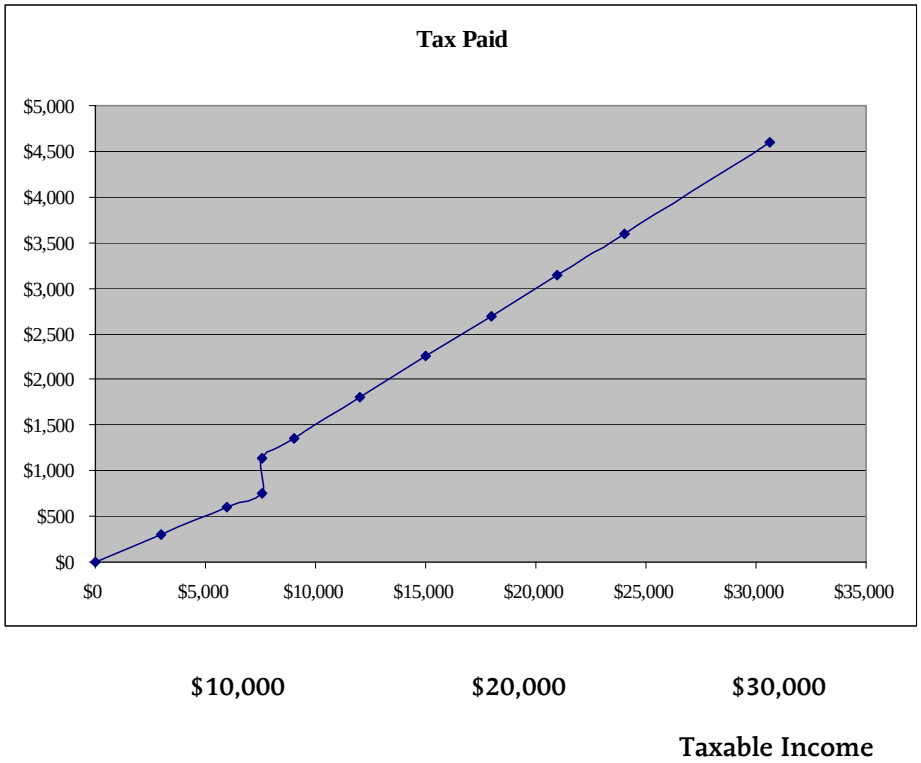
7. Compare the tax paid by someone who earns $74,199 to that paid by someone who earns $74,200.

   $74,199.25*.25 = $18,549.75
   $74,200.28*.28 = $20,776.00

   By earning $1 more, you end up paying $2,226.25 more in taxes.

8. Sketch the graph of Tax Paid vs. Taxable Income for the first two income brackets. Complete the table and plot the points to form the graph.

Taxable Income	Tax Paid
$0	$0
$3,000	$300
$6,000	$600
$7,549	$754.90
$7,550	$1,132.50
$9,000	$1,350
$12,000	$1,800
$15,000	$2,250
$18,000	$2,700
$21,000	$3,150
$24,000	$3,600
$30,649	$4,597.35
$30,650	$7,662.50



9. Use the results from #7 and #8 to explain why this tax plan is open to criticism and debate. Someone who is at the beginning of a tax bracket pays quite a bit more in tax than someone who is at the end of the previous bracket. Someone could have more gross income and end up with less net income.

10. Explain how the tax rate (percentage) is related to the graph above.

The tax rate is the slope of the graph. For the first segment, the line passes through (0, 0) and ($6,000, $600). Using the slope formula: $\frac{y_2 - y_1}{x_2 - x_1} = \frac{600-0}{6,000-0} = \frac{660}{6,000} = 0.10$ the second line segment passes through ($9,000, $1,350) and ($24,000, $3,600). $= \frac{y_2 - y_1}{x_2 - x_1} = \frac{3,600 - 1,350}{24,000 \quad 9,000} = \frac{2,250}{15,000} = 0.15$ and 15 percent is the tax rate for the second bracket.

11. How our taxes are actually calculated is a bit complicated, but it is done this way so in the interests of fairness. Explore our current tax plan by graphing taxable income and tax paid from the chart on problem #8. The first line segment drawn, corresponding to the 10 percent bracket, is the same. Trace this line with a colored pencil or marker. To get the second line, draw the line that attaches to the endpoint of the first line and has the same slope as the second. Continue this with the remaining segments until you have one connected graph.

    Show the class how to shift the line segments vertically to create a continuous graph that maintains the same slopes as the first graph (page 3, #8 and the solution on page 7).

12. Explain why our actual plan is more fair than the first plan presented.

    The tax you pay does not increase dramatically when you enter the next tax bracket. So if you earn more, your taxes increase proportionately.

13. Calculate the amount we pay in taxes in our current tax plan. To do this you must divide your income into the different tax brackets. Suppose you earn $20,000. Then your income falls into the second tax bracket (15 percent). You pay 15 percent on the amount of your income that is over $7,550. You pay 10 percent on the first $7,550 of your income. Here's how we would calculate the tax you would pay:

    (0.10)($7,550) = $755
    (0.15).($20,000 -$7,550) = (0.15).($12,450) = $1,867.50

    Your tax = 10 percent amount + 15 percent amount
    = $755 + $1,867.50 = $2,622.50

    Calculate the percentage of your income that is paid in taxes.

    $2,622.50/$20,000.00 = .113125 = 11.3125 percent

    Explain why this percentage is not exactly 10 percent and not exactly 15 percent.

    Part of your income is taxed at the 10 percent rate and the part over $7,550 is taxed at the 15 percent rate.

14. Calculate the actual tax paid by someone who earns $50,000.

    (0.10).($7,550) = $755
    (0.15).($30,650 -$7,550) = (0.15).($23,100) = $3,465
    (0.25).($50,000-$30,650) = (0.25).($19,350) = $4,837.50

    $755 + $3,465 + $4,837.50 = $9,057.50

15. When a person pays taxes on the $450,000 that he or she earns, he or she does not actually pay 35 percent on all $450,000 of the income. Ten percent on the amount of income that falls in the first tax bracket and 15 percent that falls in the second tax bracket are the calculations used. Complete the chart and check if your answer is reasonable on the modified graph.

My $450,000	Income in the tax bracket	Tax paid on that income
Income over $336,550	$113,450	$39,707.50
Income between $154,800 and $336,550	$181,750	$59,977.50
Income between $74,200 and $154,800	$80,600	$22,568
Income between $30,650 and $74,200	$43,550	$10,887.50
Income between $7,550 and $30,650	$23,100	$3,465
Income between $0 and $7,550	$7,550	$1,755
	Total Tax Paid:	**$137,360.50**

Complete the table below that represents the values for our actual tax plan. Show how you calculated your answers.

Taxable Income	Tax Paid
$0	$0.00
$7,550	$755.00
$30,650	$4,220.00
$74,200	$15,107.50
$154,800	$37,675.50
$336,550	$97,653.00
$450,000	$137,360.50

16. The graph that represents the tax that is paid is made up of six different segments. Find the equation of each segment in y = mx + b form.

Recall that: $$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Sample: segment 3 passes through (30,650, 4,220) and (74,200, 15,107.50)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{15{,}107.50 - 4{,}220}{74{,}200 - 30{,}650} \quad \frac{10{,}887.50}{43{,}550} = 0.25$$

y = mx + b
4,220 = 0.25*30,650+b
4,220 = 7,662.50 + b
b = 3,442.50
y = 0.25x -3,442.50

Summarize your formulas in the table below.

If your taxable income is	The tax paid is
$0≤x<$7,550	y=.10x
$ 7,550 ≤ x < $ 30,650	y = .15x - 377.50
$ 30,650 ≤ x < $ 74,200	y = .25x – 3,442.50
$ 74,200 ≤ x < $154,800	y = .28x – 5,668.50
$154,800 ≤ x < $ 336,550	y = .33x – 13,408.50
$ 336,550 ≤ x	y= .35x – 20,139.50

18. Use your formulas to calculate the federal income tax if your taxable income was: (show your work)

- $5,000 .10*5,000 = $500
- $21,150 .15*21,150 - 377.50 = $2,795
- $63,940 .25*63,940 – 3,442.50 = $12,542.50
- $120,000 .28*120,000 – 5,668.50 = $27,931.50
- $300,000 .33*300,000 – 13,408.50 = $85,591.50
- $450,000 .35*450,000 — 20,139.50 = $137,360.50

Name _____ Date _____

Our Federal Income Tax Plan
Homework Questions

1. Explain the difference between a *flat tax* and a *graduated income tax*.

   In a flat tax system, everyone pays tax at the same rate. In a graduated income tax, the more money you make, the higher the percentage of income you pay in taxes.

2. What is a *tax bracket*?

   A tax bracket is an interval of incomes that is charged tax at a particular rate. We have six tax brackets.

3. Explain why the income tax graph has different slopes. What is the meaning of each slope?

   Each segment has a slope that corresponds to a tax rate. The first segment has the slope 0.10 or 10 percent, the second has the slope 0.15 or 15 percent, and so on.

4. Why do we have a graduated income tax?

   People in the lowest tax brackets cannot afford to pay taxes at the higher percentages. As an individual's income goes up, he or she would have more money available for tax payments after covering necessary living expenses.

Create Your Own Tax Plan

Taxes affect all of us. Everyone who works or spends money pays taxes that support the programs of the federal government. If you were a member of Congress, what changes would you make to our current income tax plan?

- Compare your proposed tax plan to our current plan using equations, a graph and calculations for a sample person in each of the current tax brackets.
- What do you project might happen to the total revenue the government receives from income tax under your proposal? Support your projected revenue with calculations.
- What impact might your new tax plan have on federally funded programs? Research the current revenues and how they are allocated to programs. How would you modify this funding? Would you work on the federal budget deficit? (This must be aligned with your projected total income tax revenues.)

Create a poster for use in helping to present your ideas to the class.

The poster and presentation will count as a 100-point test grade.

Extra Credit Opportunities:

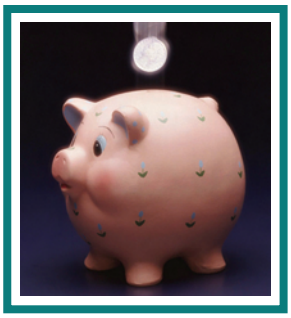
- If we had a flat tax, what rate would be required to match the current total income tax revenue?
- Create a tax plan that eliminates the current budget deficit.

Create Your Own Tax Plan
Grading Rubric

	Possible Points	Your Points
1. The poster includes a paragraph describing details of your plan. Your plan has sufficient mathematical sophistication, but is not too complicated to understand.	20	
2. The poster includes three representations of your plan: a. a chart comparing sample individuals from each tax bracket; b. a graph of federal income tax vs. taxable income; and c. the equation for computing taxes (showing the work of finding the equations).	30	
3. The poster includes a projection of the total income tax revenue. Work is shown to support the figure.	20	
4. The poster shows the current allocation of revenue to federal programs and explains how this will be modified by your new tax plan.	20	
5. A professional presentation is made in the form of an elected official's speech, in which you try to convince the audience (your fellow voting Americans) that you have the best tax plan and are looking out for their interests.	10	
Total	100	

Budgets

The Budget Project



Create a budget for your anticipated household expenses. Set this up for your first few years, either straight out of high school or just out of college. Try to be as realistic as possible so that you can use this when you graduate.

1. Research the occupation you think you will enter after graduation from either high school or college. Find a reference of starting salaries for that job — print a copy of your reference.

2. Save copies of the bills that your family receives. You will use these to estimate your own expenses.

3. Use the classified ads and/or Internet to find an apartment. Consider the monthly rent, utilities and deposit required when selecting a place to live. Print a copy of the ad and include a picture of the apartment, if available.

4. Check Internet sites that provide budgeting advice. List your sources. Write two paragraphs summarizing helpful strategies and tips you used in creating your budget.

5. Using Excel software, prepare a monthly and yearly budget based on what you've learned. Use Excel to calculate the totals for each category of your budget. Write a formula in the spreadsheet to convert the monthly figures to yearly figures. Share your proposed budget with an adult and ask for their suggestions.

Use word processing software to prepare your report. Include the following:

- An explanation of your employment plans after graduation — include why you want the job, what training is required for it, and project how much money you'll earn each month from the starting pay.
- Two paragraphs summarizing helpful strategies and tips you used in creating your budget
- The Excel spreadsheet of your monthly and yearly budget, pasted electronically into your report
- A signed statement from the adult who reviewed your budget
- Copies of your sources for starting pay, your apartment and bills (you may omit any personal information.
- A bibliography of the Internet addresses and other sources you referenced.

This budget project will be included in your financial portfolio.

Project due date _____

The Budget Project
Grading Rubric

	Possible Points	Your Points
Job Plans • Your employment plans are explained (in a paragraph) and are realistic. • Appropriate training/education has been considered.	15	
Apartment • You have selected an apartment in your price range close to where you would like to work. • You have used word processing software to prepare a description of your apartment.	15	
Monthly & Yearly Budget • Two paragraphs that summarize budgeting advice. • Your monthly and yearly budget has been calculated on a spreadsheet and pasted electronically into your report. • Your expense estimates are complete and reasonable.	40	
Adult Statement • A parent or other adult has signed a statement on the final draft of your report saying that he or she has reviewed your work and agrees with its content.	10	
Documentation • Evidence of an average starting salary has been justified. • Documentation for your apartment is included. • Ample evidence has been provided for your expenses. • Your sources are cited in a bibliography.	20	
Total Points:	**100**	

Sample Project
My First Budget

I would like to pursue a career in accounting. I chose this field because I enjoy math and am very organized. The starting salary ranges from $40,000 to $47,500. I will use the number in the middle of that range, $43,750, as my starting salary for this project. I will go to a four-year school to get a bachelor's degree in accounting. Once I start my first job, I plan to take more courses toward a master's degree.

I found a one-bedroom apartment in West Hartford for $795 a month. The apartment has a balcony, dishwasher, air conditioning and a fireplace. I plan to work in Hartford, so this will be an easy commute. Gas, water and trash pick up are included in the rent. I found my apartment using http:/www.apartments.com.

It is important for me to set up and follow a budget so that I can avoid getting into debt and so I can plan for short-and long-term savings. My first step in setting up a budget is to list and estimate my necessary living expenses. These include things such as rent, food and utilities. Then I will determine how much of my salary I will need to cover these expenses. I will need to subtract things such as state and federal income taxes, Medicare and Social Security. I will then determine how to allocate the remainder into my savings and discretionary spending. I want to save for retirement, a down payment on a house and build an emergency fund. If I have enough money, I would like to take a vacation.

Once a budget is carefully written, it is important to track your spending to make sure that you are actually following your budget. You may have overestimated some expenses and will be able to use that surplus elsewhere. If any necessary expenses have been underestimated, you will need to find other areas where you can reduce spending. By keeping track of where your money goes, you can see how small, everyday spending can quickly add up. Buying a cup of gourmet coffee each morning can add up to $1,400 a year! Seeing where your money goes makes you more mindful of the little things and keeps you focused on your larger goals.

Budgeting Information

http://financialplan.about.com/cs/budgeting/1/b/budget.htm

http://www.consumerdebtservices.com/articles/bd-article4.sbtml

http://www.kiplinger.com/personal/finance/basics/archives/2003/02/budjet.html

Note: The student would also submit evidence for his or her expense estimates.

My Budget

First-Year Accountant			
	Monthly	**Yearly**	**Notes**
Starting Salary	**$3,645.83**	**$43,750.00**	I used the federal income tax packet we did in class. From the CT tax site, I used the formula (income – 10,000)*0.05 + 300
Payroll Deductions			
Federal Tax	$633.54	$7,602.50	
State Tax	$165.63	$1,987.50	
Medicare and Social Security	$278.91	$3,346.88	Online, I found the rate is 7.65 percent.
Total Deductions	**$1,078.08**	**$12,936.88**	
Take-Home Pay	**$2,567.75**	**$30,813.12**	I first had clothing at $150 and setting up my apartment at $250. I found I was $1,000 over budget for the year so I cut back in these two areas.
Necessary Expenses			
Rent	$795.00	$9,540.00	
Food	$225.00	$2,700.00	
Electricity	$65.00	$780.00	
Phone	$30.00	$360.00	
Car Payment	$200.00	$2,400.00	
Car Insurance	$85.00	$1,020.00	
Gas	$85.00	$1,020.00	
Car Maintenance	$40.00	$480.00	
Discretionary Expenses			
Internet	$25.00	$300.00	
Clothing	$100.00	$1,200.00	
Entertainment	$75.00	$900.00	
Setting up my apartment	$200.00	$2,400.00	
Vacation	$125.00	$1,500.00	
Total Expenses	**$2,050.00**	**$24,600.00**	
Savings			
Emergency Fund	$100.00	$1,200.00	
Retirement	$300.00	$3,600.00	
House Down Payment	$100.00	$1,200.00	
Total Savings	**$500.00**	**$6,000.00**	
Expenses + Savings	**$2,550.00**	**$30,600.00**	

Salary Source

Below are starting salary ranges for selected disciplines. The ranges are provided to give you a rough idea of salary potential for a variety of majors, but keep in mind the factors that affect salary offers—and remember, your starting salary may be higher or lower than the figures reported here.

By profession for all types of employers	Yearly salary ranges in $
Business	
Accounting	40,000 - 47,500
Business Administration/Management	32,500 - 46,000
Management Information Systems	38,700 - 49,400
Marketing/Marketing Management	31,200- 42,000
Computer Sciences	
Computer Science	45,000 - 56,500
Information Sciences & Systems	38,000 - 51,000
Engineering	
Chemical	52,000 - 57,600
Civil	40,000 - 47,000
Computer	50,000 - 56,000
Electrical/Electronic	49,000 - 56,000
Mechanical	47,000 - 54,240
Humanities & Social Sciences	
Liberal Arts & Sciences	27,000 - 40,000
Psychology	24,000 - 35,000
Sociology	25,000 - 37,000

Source: NACE Salary Survey, Fall 2005 report. Data are starting salary offers reported to NACE by colleges and universities nationwide.

Apartment Information

http://www.apartments.com/

More Photos

Westwood Apartments
106 Kane St
West Hartford, CT 06119

Save to Favorites | Email a Friend

Call Toll Free:
(866) 609-6976
Contact by E-mail

Printable Brochure

Floor Plans
Name: Model 1A

Sq. Ft: 803
Bedrooms: 1
Bathrooms: 1

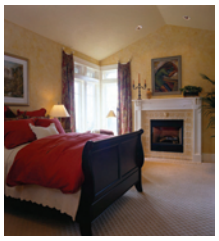
Deposit: Varies
Rent Range: $795
Utilities included: Gas, Water, Trash Pickup

Back to Floor plan list

Floor Plan Photos

Living Room

Kitchen



Bedroom

Dining Room

Floor Plan Details

Heat: Electric
Air Conditioning: Central Air Conditioning
Range: Electric
Floors: Carpet
Bathroom Set Up: Combined Shower & Bathtub
Fireplace: Decorative
Outdoor Area: Balcony, Deck, Patio or Porch

Community Amenities

Dishwasher
Dining Area/Room
Cable-ready
Disposal
Separate Kitchen
Window Coverings

Unique Community Features
Marble floors in some units
Floor Plan Description

Credit Cards

Paying the Minimum

If you are not paying off your credit card balance in full every month, your money is slowly going down the "interest drain." In this project you will select a credit card, use it to purchase a "big ticket" item, and see what happens when you make only the minimum payment on the card.

Step 1: Find a credit card that is right for you. (25 points)

There are many different credit cards with many different benefits available. Compare the important features of three different cards (assume you are a first-year college student). Create a chart that summarizes the key rates and terms for the three cards. Write a paragraph about each card. Discuss in detail which card is best for you and why. This is the card that you will use for your big purchase.

Step 2: Purchase a "big ticket" item. (10 points)

Find an expensive item that you would like to purchase ($2,000 minimum). It could be a big-screen TV, furniture for your new apartment, a cruise in the Caribbean, etc. Get a picture of the item and calculate the total cost to purchase it (include tax and shipping, if applicable).

Step 3: Enjoy your big purchase, paying only the minimum! Assume that the minimum payment is 2 percent of your account balance or $10, whichever number is higher. (50 points)

Using your first choice card and the regular annual percentage rate (APR) determine the account balance and finance charge for the first three months (showing all your work).

b. On a spreadsheet, chart the account balance and finance charges for five years. How much do you still owe after five years? Calculate the total amount spent in payments and finance charges over the five-year period.
c. How long does it take to pay off the item completely? Calculate the total amount spent in payments and finance charges. Show how you arrived at your answer.
d. If you had to use the default APR, how long would it take you to pay off the item? Calculate the total amount spent in payments and finance charges. Show how you arrived at your answer.
e. Some cards have increased the minimum payment from 2 to 4 percent. Does this make a big difference in the time it takes to pay off the balance and the amount of interest paid over time? Create a spreadsheet and use calculations to support your answer. Explain why there is or is not a significant difference.

Step 4: Create a poster and present your project. (15 points)

Include the credit card comparison, your "big ticket" item and your work from Step 3. Write a paragraph that summarizes the pros and cons of credit cards. Include a second a paragraph summarizing what you've learned from this project. (Print out a copy of each part of the project to include in your notebook.)

Credit Card Analysis

		Card A	Card B	Card C
Card Name				
Web Site Used				
Describe Special Features				
Annual Fee				
Grace Period				
Purchases	Regular APR			
	Intro APR and period			
Balance Transfers	Regular APR			
	Intro APR and period			
	Fee			
Cash Advances	Regular APR			
	Intro APR and period			
	Fee			
Late Fees (include all levels)				
Over the Credit Limit Fee				
Default APR				
Transactions in Foreign Currency				
When would you get bumped to the default rate?				
Eligibility Requirements for the Card				

Notes on Using Excel for Paying the Minimum

1. Open Excel and title the columns. Enter the beginning balance as month 0.

	A	B	C	D	E	F
1	Month	Finance Charge	Payment	Balance		
2				$2,170.88		
3	1					
4	2					
5						

2. Recall the calculations used to find the finance charge, minimum payment and new balance.

   <u>Month 1</u>

   Beginning Balance: $2,170.88
   Finance Charge: $2,170.88 * 0.1774/12 = $32.09
   Minimum Payment: $2,170.88 * 0.02 = $43.42
   New Balance: $2,170.88 + $32.09 - $43.42 = $2,159.55

   Write these as formulas in the spreadsheet. Instead of typing in the number, use the name of the cell where the number lives. For example, $2,170.88 is in D2. Start each formula with **an "="**. When you hit enter, the value will appear. Check to see if it is the same as that calculated by hand.

	A	B	C	D	E	F
1	Month	Finance Charge	Payment	Balance		
2	0			$2,170.88		
3	1	=D2*0.1774/12	=D2*0.02	=D2+B3-C3		
4	2					
5						

3. Then write the formulas for the next row.

	A	B	C	D	E	F
1	Month	Finance Charge	Payment	Balance		
2	0			$2,170.88		
3	1	$32.09	$43.42	$2,159.55		
4	2	=D3 *0.1774/12	=D3 *0.02	=D3+B4-C4		
5						

   Notice that the formulas are the same, but each row was moved down one. We can copy the formulas by "filtering down" for many months. Excel will automatically change the rows. To copy, highlight the cells that contain the formulas. Select *copy* from the menu. Highlight the cells where you would like the calculations continued. Select *paste* from the menu. Continue until you have a zero balance.

Note that the minimum payment is never less than $10. Once it reaches that number, keep it a constant value until the item is paid off. Adjust the final payment to make the ending balance zero.

Do not show the students how to do this; just tell them they need a zero balance at the end. They can figure out how to get the balance to zero.

For lower-level students, explain how to set this up by using a computer projection unit, and then let them work on it in the computer lab. Middle-track students usually are able to figure it out without showing them. They have had some experience with Excel in other classes.

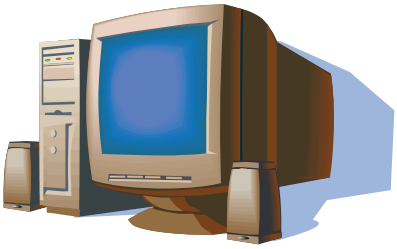
Sample Project

Paying the Minimum

Step One: Find a credit card that is right for you.

The chart on page 40 shows the information for one credit card. The students can find this information online. Have them click on *terms and conditions* to find out the details of the card. Review an offer with them and together discuss the meaning of the various fees and charges. In addition to completing the chart for three cards, the students will write a paragraph describing each card and explaining which card they think is best.

Step Two: Purchase a "big ticket" item.



I chose to purchase a Dell Notebook Computer, the XPS M170. The price of the item is:

Notebook:	$1,999.00
Shipping:	$49.00
Tax:	$122.88
Total:	$2,170.88

Step Three: Paying the minimum

a. The account balance and finance charge for the first three months.

Month 1

Beginning Balance:	$2,170.88
Finance Charge:	$2,170.88 * 0.1774/12 = $32.09
Minimum Payment:	$2,170.88 * 0.02 = $43.42
New Balance:	$2,170.88 + $32.09 - $43.42 = $2,159.55

Month 2

Beginning Balance:	$2,159.55
Finance Charge:	$2,159.55 * 0.1774/12 = $31.93
Minimum Payment:	$2,159.55 * 0.02 = $43.19
New Balance:	$2,159.55 + $31.93 - $43.19 = $2,148.29

Month 3

Beginning Balance:	$2,148.29
Finance Charge:	$2,148.29 * 0.1774/12 = $31.76
Minimum Payment:	$2,148.29 * 0.02 = $42.97
New Balance:	$2,148.29 + $31.76 - $42.97 = $2,137.08

b. On a spreadsheet, chart the account balance and finance charges for five years. How much do you still owe after five years? Calculate the total amount spent in payments and finance charges over the five-year period.

APR 17.74 percent

Month	Interest	Payment	Balance		Month	Interest	Payment	Balance
0			$2,170.88		33	$27.15	$36.73	$1,826.74
1	$32.09	$43.42	$2,159.56		34	$27.01	$36.53	$1,817.21
2	$31.93	$43.19	$2,148.29		35	$26.86	$36.34	$1,807.73
3	$31.76	$42.97	$2,137.08		36	$26.72	$36.15	$1,798.30
4	$31.59	$42.74	$2,125.93		37	$26.58	$35.97	$1,788.92
5	$31.43	$42.52	$2,114.84		38	$26.45	$35.78	$1,779.59
6	$31.26	$42.30	$2,103.81		39	$26.31	$35.59	$1,770.30
7	$31.10	$42.08	$2,092.84		40	$26.17	$35.41	$1,761.07
8	$30.94	$41.86	$2,081.92		41	$26.03	$35.22	$1,751.88
9	$30.78	$41.64	$2,071.06		42	$25.90	$35.04	$1,742.74
10	$30.62	$41.42	$2,060.25		43	$25.76	$34.85	$1,733.65
11	$30.46	$41.21	$2,049.51		44	$25.63	$34.67	$1,724.61
12	$30.30	$40.99	$2,038.82		45	$25.50	$34.49	$1,715.61
13	$30.14	$40.78	$2,028.18		46	$25.36	$34.31	$1,706.66
14	$29.98	$40.56	$2,017.60		47	$25.23	$34.13	$1,697.76
15	$29.83	$40.35	$2,007.07		48	$25.10	$33.96	$1,688.90
16	$29.67	$40.14	$1,996.60		49	$24.97	$33.78	$1,680.09
17	$29.52	$39.93	$1,986.19		50	$24.84	$33.60	$1,671.32
18	$29.36	$39.72	$1,975.83		51	$24.71	$33.43	$1,662.61
19	$29.21	$39.52	$1,965.52		52	$24.58	$33.25	$1,653.93
20	$29.06	$39.31	$1,955.27		53	$24.45	$33.08	$1,645.30
21	$28.91	$39.11	$1,945.07		54	$24.32	$32.91	$1,636.72
22	$28.75	$38.90	$1,934.92		55	$24.20	$32.73	$1,628.18
23	$28.60	$38.70	$1,924.83		56	$24.07	$32.56	$1,619.69
24	$28.46	$38.50	$1,914.78		57	$23.94	$32.39	$1,611.24
25	$28.31	$38.30	$1,904.80		58	$23.82	$32.22	$1,602.84
26	$28.16	$38.10	$1,894.86		59	$23.70	$32.06	$1,594.47
27	$28.01	$37.90	$1,884.97		60	$23.57	$31.89	$1,586.16
28	$27.87	$37.70	$1,875.14					
29	$27.72	$37.50	$1,865.36					
30	$27.58	$37.31	$1,855.63					
31	$27.43	$37.11	$1,845.95					
32	$27.29	$36.92	$1,836.32					

After 60 Months

You still owe: $1,586.16
Total Interest: $1,656.03
Total Payments: $2,241.75

c. How long will it take to pay off the item completely? Calculate the total amount spent in payments and finance charges. Show how you arrived at your answer.

See pages 33-39. To completely pay off the item, it will take 373 months (more than 31 years!). I would end up spending $5,150.80 in interest and $7,321.68 in total payments. The laptop computer would have been obsolete for over 20 years!

d. If you had to use the default APR, how long would it take you to pay off the item? Calculate the total amount spent in payments and finance charges. Show how you arrived at your answer.

The APR was changed to 31.74 percent.

2 percent of the Balance: $2,170.88 * 0.02 = $43.42
Finance Charge: $2,170.88 * 0.3174/12 = $57.42

The credit card company would have to increase the minimum payment so that I could keep up with the finance charges.

If we increase the payment to 3 percent of the balance, my first payment would be $65.13. It would take 609 months to pay off. That's almost 51 years! I would spend $14,175.22 in interest and $16,346.10 in total payments.

e. Some credit card companies have increased the minimum payment from 2 to 4 percent. Does this make a big difference in the time it takes to pay off the balance and the amount of interest paid? Create a spreadsheet to support your answer. Use calculations to support your answer. Explain why there is or is not a significant difference.

See attached spreadsheet (pages 33-39).
Is doubling the minimum payment advantageous for consumers?

	2 percent Minimum Pmt.	**4 percent Minimum Pmt.**
Months to Pay:	373	$117
Interest:	$5,150.80	$1,190.50
Total Paid:	$7,321.68	$3,361.38

This is a savings of $3,960.30! This is much more advantageous for consumers. Even though it doubles the minimum payment, more of the payment would go toward paying down the balance. With the 2 percent payment, it would barely cover the finance charge.

The Pros and Cons of Credit

Examples of some pros and cons of credit are listed below.

• Good credit leads to lower rates • Cash back and other rewards • Convenient • Safer than carrying cash • Helpful in tracking expenses • Can afford emergency expenses • Necessary for online purchases, hotel and car rentals	• Bad credit leads to high rates or not being able to get a loan or mortgage • Can pay high finance charges and fees • Too convenient • More vulnerable to identity theft • Easy to make impulse purchases • Can lead to debt • Introductory rates can lead you to spend more

Students should come away from this project with a respect for the huge responsibility that carrying a credit card requires. It is easy for people to say that they will pay the minimum just this one time and then take care of their balance in the following month. This opens their eyes to what happens if they repeatedly carry a balance on their card. In reality it could be worse, because many consumers continue to spend with their card even when they can't afford to pay off what they've already charged.

For Part C: Paying Off the Entire Balance

Month	Interest	Payment	Balance	Month	Interest	Payment	Balance
0			$2,170.88	42	$25.90	$35.04	$1,742.74
1	$32.09	$43.42	$2,159.56	43	$25.76	$34.85	$1,733.65
2	$31.93	$43.19	$2,148.29	44	$25.63	$34.67	$1,724.61
3	$31.76	$42.97	$2,137.08	45	$25.50	$34.49	$1,715.61
4	$31.59	$42.74	$2,125.93	46	$25.36	$34.31	$1,706.66
5	$31.43	$42.52	$2,114.84	47	$25.23	$34.13	$1,697.76
6	$31.26	$42.30	$2,103.81	48	$25.10	$33.96	$1,688.90
7	$31.10	$42.08	$2,092.84	49	$24.97	$33.78	$1,680.09
8	$30.94	$41.86	$2,081.92	50	$24.84	$33.60	$1,671.32
9	$30.78	$41.64	$2,071.06	51	$24.71	$33.43	$1,662.61
10	$30.62	$41.42	$2,060.25	52	$24.58	$33.25	$1,653.93
11	$30.46	$41.21	$2,049.51	53	$24.45	$33.08	$1,645.30
12	$30.30	$40.99	$2,038.82	54	$24.32	$32.91	$1,636.72
13	$30.14	$40.78	$2,028.18	55	$24.20	$32.73	$1,628.18
14	$29.98	$40.56	$2,017.60	56	$24.07	$32.56	$1,619.69
15	$29.83	$40.35	$2,007.07	57	$23.94	$32.39	$1,611.24
16	$29.67	$40.14	$1,996.60	58	$23.82	$32.22	$1,602.84
17	$29.52	$39.93	$1,986.19	59	$23.70	$32.06	$1,594.47
18	$29.36	$39.72	$1,975.83	60	$23.57	$31.89	$1,586.16
19	$29.21	$39.52	$1,965.52	61	$23.45	$31.72	$1,577.88
20	$29.06	$39.31	$1,955.27	62	$23.33	$31.56	$1,569.65
21	$28.91	$39.11	$1,945.07	63	$23.20	$31.39	$1,561.46
22	$28.75	$38.90	$1,934.92	64	$23.08	$31.23	$1,553.32
23	$28.60	$38.70	$1,924.83	65	$22.96	$31.07	$1,545.21
24	$28.46	$38.50	$1,914.78	66	$22.84	$30.90	$1,537.15
25	$28.31	$38.30	$1,904.80	67	$22.72	$30.74	$1,529.13
26	$28.16	$38.10	$1,894.86	68	$22.61	$30.58	$1,521.16
27	$28.01	$37.90	$1,884.97	69	$22.49	$30.42	$1,513.22
28	$27.87	$37.70	$1,875.14	70	$22.37	$30.26	$1,505.33
29	$27.72	$37.50	$1,865.36	71	$22.25	$30.11	$1,497.47
30	$27.58	$37.31	$1,855.63	72	$22.14	$29.95	$1,489.66
31	$27.43	$37.11	$1,845.95	73	$22.02	$29.79	$1,481.89
32	$27.29	$36.92	$1,836.32	74	$21.91	$29.64	$1,474.16
33	$27.15	$36.73	$1,826.74	75	$21.79	$29.48	$1,466.47
34	$27.01	$36.53	$1,817.21	76	$21.68	$29.33	$1,458.82
35	$26.86	$36.34	$1,807.73	77	$21.57	$29.18	$1,451.21
36	$26.72	$36.15	$1,798.30	78	$21.45	$29.02	$1,443.64
37	$26.58	$35.97	$1,788.92	79	$21.34	$28.87	$1,436.11
38	$26.45	$35.78	$1,779.59	80	$21.23	$28.72	$1,428.62
39	$26.31	$35.59	$1,770.30	81	$21.12	$28.57	$1,421.16
40	$26.17	$35.41	$1,761.07	82	$21.01	$28.42	$1,413.75
41	$26.03	$35.22	$1,751.88	83	$20.90	$28.28	$1,406.38

Month	Interest	Payment	Balance		Month	Interest	Payment	Balance
84	$20.79	$28.13	$1,399.04		128	$16.52	$22.35	$1,111.43
85	$20.68	$27.98	$1,391.74		129	$16.43	$22.23	$1,105.64
86	$20.57	$27.83	$1,384.48		130	$16.34	$22.11	$1,099.87
87	$20.47	$27.69	$1,377.26		131	$16.26	$22.00	$1,094.13
88	$20.36	$27.55	$1,370.07		132	$16.17	$21.88	$1,088.42
89	$20.25	$27.40	$1,362.93		133	$16.09	$21.77	$1,082.75
90	$20.15	$27.26	$1,355.82		134	$16.01	$21.65	$1,077.10
91	$20.04	$27.12	$1,348.74		135	$15.92	$21.54	$1,071.48
92	$19.94	$26.97	$1,341.71		136	$15.84	$21.43	$1,065.89
93	$19.83	$26.83	$1,334.71		137	$15.76	$21.32	$1,060.33
94	$19.73	$26.69	$1,327.75		138	$15.68	$21.21	$1,054.30
95	$19.63	$26.55	$1,320.82		139	$15.59	$21.10	$1,049.29
96	$19.53	$26.42	$1,313.93		140	$15.51	$20.99	$1,043.82
97	$19.42	$26.28	$1,307.07		141	$15.43	$20.88	$1,038.38
98	$19.32	$26.14	$1,300.26		142	$15.35	$20.77	$1,032.96
99	$19.22	$26.01	$1,293.47		143	$15.27	$20.66	$1,027.57
100	$19.12	$25.87	$1,286.73		144	$15.19	$20.55	$1,022.21
101	$19.02	$25.73	$1,280.01		145	$15.11	$20.44	$1,016.88
102	$18.92	$25.60	$1,273.34		146	$15.03	$20.34	$1,011.57
103	$18.82	$25.47	$1,266.69		147	$14.95	$20.23	$1,006.30
104	$18.73	$25.33	$1,260.09		148	$14.88	$20.13	$1,001.05
105	$18.63	$25.20	$1,253.51		149	$14.80	$20.02	$995.82
106	$18.53	$25.07	$1,246.97		150	$14.72	$19.92	$990.63
107	$18.43	$24.94	$1,240.47		151	$14.64	$19.81	$985.46
108	$18.34	$24.81	$1,234.00		152	$14.57	$19.71	$980.32
109	$18.24	$24.68	$1,227.56		153	$14.49	$19.61	$975.21
110	$18.15	$24.55	$1,221.16		154	$14.42	$19.50	$970.12
111	$18.05	$24.42	$1,214.78		155	$14.34	$19.40	$965.06
112	$17.96	$24.30	$1,208.45		156	$14.27	$19.30	$960.02
113	$17.86	$24.17	$1,202.14		157	$14.19	$19.20	$955.02
114	$17.77	$24.04	$1,195.87		158	$14.12	$19.10	$950.03
115	$17.68	$23.92	$1,189.63		159	$14.04	$19.00	$945.08
116	$17.59	$23.79	$1,183.43		160	$13.97	$18.90	$940.15
117	$17.50	$23.67	$1,177.25		161	$13.90	$18.80	$935.24
118	$17.40	$23.55	$1,171.11		162	$13.83	$18.70	$930.36
119	$17.31	$23.42	$1,165.00		163	$13.75	$18.61	$925.51
120	$17.22	$23.30	$1,158.93		164	$13.68	$18.51	$920.68
121	$17.13	$23.18	$1,152.88		165	$13.61	$18.41	$915.88
122	$17.04	$23.06	$1,146.87		166	$13.54	$18.32	$911.10
123	$16.95	$22.94	$1,140.88		167	$13.47	$18.22	$906.35
124	$16.87	$22.82	$1,134.93		168	$13.40	$18.13	$901.62
125	$16.78	$22.70	$1,129.01		169	$13.33	$18.03	$896.92
126	$16.69	$22.58	$1,123.12		170	$13.26	$17.94	$892.24
127	$16.60	$22.46	$1,117.26		171	$13.19	$17.84	$887.58

Month	Interest	Payment	Balance
172	$13.12	$17.75	$882.95
173	$13.05	$17.66	$878.35
174	$12.98	$17.57	$873.77
175	$12.92	$17.48	$869.21
176	$12.85	$17.38	$864.67
177	$12.78	$17.29	$860.16
178	$12.72	$17.20	$855.68
179	$12.65	$17.11	$851.21
180	$12.58	$17.02	$846.77
181	$12.52	$16.94	$842.35
182	$12.45	$16.85	$837.96
183	$12.39	$16.76	$833.59
184	$12.32	$16.67	$829.24
185	$12.26	$16.58	$824.91
186	$12.19	$16.50	$820.61
187	$12.13	$16.41	$816.33
188	$12.07	$16.33	$812.07
189	$12.01	$16.24	$807.83
190	$11.94	$16.16	$803.62
191	$11.88	$16.07	$799.43
192	$11.82	$15.99	$795.26
193	$11.76	$15.91	$791.11
194	$11.70	$15.82	$786.98
195	$11.63	$15.74	$782.88
196	$11.57	$15.66	$778.79
197	$11.51	$15.58	$774.73
198	$11.45	$15.49	$770.69
199	$11.39	$15.41	$766.67
200	$11.33	$15.33	$762.67
201	$11.27	$15.25	$758.69
202	$11.22	$15.17	$754.73
203	$11.16	$15.09	$750.80
204	$11.10	$15.02	$746.88
205	$11.04	$14.94	$742.98
206	$10.98	$14.86	$739.11
207	$10.93	$14.78	$735.25
208	$10.87	$14.71	$731.42
209	$10.81	$14.63	$727.60
210	$10.76	$14.55	$723.80
211	$10.70	$14.48	$720.03
212	$10.64	$14.40	$716.27
213	$10.59	$14.33	$712.54
214	$10.53	$14.25	$708.82
215	$10.48	$14.18	$705.12

Month	Interest	Payment	Balance
216	$10.42	$14.10	$701.44
217	$10.37	$14.03	$697.78
218	$10.32	$13.96	$694.14
219	$10.26	$13.88	$690.52
220	$10.21	$13.81	$686.92
221	$10.15	$13.74	$683.34
222	$10.10	$13.67	$679.77
223	$10.05	$13.60	$676.23
224	$10.00	$13.52	$672.70
225	$9.94	$13.45	$669.19
226	$9.89	$13.38	$665.70
227	$9.84	$13.31	$662.22
228	$9.79	$13.24	$658.77
229	$9.74	$13.18	$655.33
230	$9.69	$13.11	$651.91
231	$9.64	$13.04	$648.51
232	$9.59	$12.97	$645.13
233	$9.54	$12.90	$641.77
234	$9.49	$12.84	$638.42
235	$9.44	$12.77	$635.09
236	$9.39	$12.70	$631.77
237	$9.34	$12.64	$628.48
238	$9.29	$12.57	$625.20
239	$9.24	$12.50	$621.94
240	$9.19	$12.44	$618.69
241	$9.15	$12.37	$615.47
242	$9.10	$12.31	$612.26
243	$9.05	$12.25	$609.06
244	$9.00	$12.18	$605.88
245	$8.96	$12.12	$602.72
246	$8.91	$12.05	$599.58
247	$8.86	$11.99	$596.45
248	$8.82	$11.93	$593.34
249	$8.77	$11.87	$590.25
250	$8.73	$11.80	$587.17
251	$8.68	$11.74	$584.10
252	$8.63	$11.68	$581.06
253	$8.59	$11.62	$578.02
254	$8.55	$11.56	$575.01
255	$8.50	$11.50	$572.01
256	$8.46	$11.44	$569.03
257	$8.41	$11.38	$566.06
258	$8.37	$11.32	$563.10
259	$8.32	$11.26	$560.17

Month	Interest	Payment	Balance		Month	Interest	Payment	Balance
260	$8.28	$11.20	$557.24		304	$6.38	$10.00	$428.16
261	$8.24	$11.14	$554.34		305	$6.33	$10.00	$424.49
262	$8.19	$11.09	$551.45		306	$6.28	$10.00	$420.76
263	$8.15	$11.03	$548.57		307	$6.22	$10.00	$416.98
264	$8.11	$10.97	$545.71		308	$6.16	$10.00	$413.14
265	$8.07	$10.92	$542.86		309	$6.11	$10.00	$409.25
266	$8.03	$10.86	$540.03		310	$6.05	$10.00	$405.30
267	$7.98	$10.80	$537.21		311	$5.99	$10.00	$401.29
268	$7.94	$10.74	$534.41		312	$5.93	$10.00	$397.23
269	$7.90	$10.69	$531.62		313	$5.87	$10.00	$393.10
270	$7.86	$10.63	$528.85		314	$5.81	$10.00	$388.91
271	$7.82	$10.58	$526.09		315	$5.75	$10.00	$384.66
272	$7.78	$10.52	$523.34		316	$5.69	$10.00	$380.35
273	$7.74	$10.47	$520.61		317	$5.62	$10.00	$375.97
274	$7.70	$10.41	$517.90		318	$5.56	$10.00	$371.53
275	$7.66	$10.36	$515.20		319	$5.49	$10.00	$367.02
276	$7.62	$10.30	$512.51		320	$5.43	$10.00	$362.45
277	$7.58	$10.25	$509.84		321	$5.36	$10.00	$357.80
278	$7.54	$10.20	$507.18		322	$5.29	$10.00	$353.09
279	$7.50	$10.14	$504.53		323	$5.22	$10.00	$348.31
280	$7.46	$10.09	$501.90		324	$5.15	$10.00	$343.46
281	$7.42	$10.04	$499.28		325	$5.08	$10.00	$338.54
282	$7.38	$10.00	$496.66		326	$5.00	$10.00	$333.54
283	$7.34	$10.00	$494.00		327	$4.93	$10.00	$328.48
284	$7.30	$10.00	$491.31		328	$4.86	$10.00	$323.33
285	$7.26	$10.00	$488.57		329	$4.78	$10.00	$318.11
286	$7.22	$10.00	$485.79		330	$4.70	$10.00	$312.81
287	$7.18	$10.00	$482.97		331	$4.62	$10.00	$307.44
288	$7.14	$10.00	$480.11		332	$4.54	$10.00	$301.98
289	$7.10	$10.00	$477.21		333	$4.46	$10.00	$296.45
290	$7.05	$10.00	$474.27		334	$4.38	$10.00	$290.83
291	$7.01	$10.00	$471.28		335	$4.30	$10.00	$285.13
292	$6.97	$10.00	$468.24		336	$4.22	$10.00	$279.35
293	$6.92	$10.00	$465.17		337	$4.13	$10.00	$273.47
294	$6.88	$10.00	$462.04		338	$4.04	$10.00	$267.52
295	$6.83	$10.00	$458.87		339	$3.95	$10.00	$261.47
296	$6.78	$10.00	$455.66		340	$3.87	$10.00	$255.34
297	$6.74	$10.00	$452.39		341	$3.77	$10.00	$249.11
298	$6.69	$10.00	$449.08		342	$3.68	$10.00	$242.80
299	$6.64	$10.00	$445.72		343	$3.59	$10.00	$236.38
300	$6.59	$10.00	$442.31		344	$3.49	$10.00	$229.88
301	$6.54	$10.00	$438.85		345	$3.40	$10.00	$223.28
302	$6.49	$10.00	$435.34		346	$3.30	$10.00	$216.58
303	$6.44	$10.00	$431.77		347	$3.20	$10.00	$209.78

Month	Interest	Payment	Balance
348	$3.10	$10.00	$202.88
349	$3.00	$10.00	$195.88
350	$2.90	$10.00	$188.78
351	$2.79	$10.00	$181.57
352	$2.68	$10.00	$174.25
353	$2.58	$10.00	$166.83
354	$2.47	$10.00	$159.29
355	$2.35	$10.00	$151.65
356	$2.24	$10.00	$143.89
357	$2.13	$10.00	$136.02
358	$2.01	$10.00	$128.03
359	$1.89	$10.00	$119.92
360	$1.77	$10.00	$111.69
361	$1.65	$10.00	$103.35
362	$1.53	$10.00	$94.87
363	$1.40	$10.00	$86.28
364	$1.28	$10.00	$77.55
365	$1.15	$10.00	$68.70
366	$1.02	$10.00	$59.71
367	$0.88	$10.00	$50.60
368	$0.75	$10.00	$41.34
369	$0.61	$10.00	$31.95
370	$0.47	$10.00	$22.43
371	$0.33	$10.00	$12.76
372	$0.19	$10.00	$2.95
373	$0.04	$2.99	$0.00

Part E: Paying 4 Percent of the Balance using the 17.74 percent APR

Month	Interest	Payment	Balance	Month	Interest	Payment	Balance
0			$2,170.88	42	$11.26	$30.47	$742.64
1	$32.09	$86.84	$2,116.14	43	$10.98	$29.71	$723.91
2	$31.28	$84.65	$2,062.78	44	$10.70	$28.96	$705.65
3	$30.49	$82.51	$2,010.76	45	$10.43	$28.23	$687.86
4	$29.73	$80.43	$1,960.05	46	$10.17	$27.51	$670.51
5	$28.98	$78.40	$1,910.63	47	$9.91	$26.82	$653.61
6	$28.25	$76.43	$1,862.45	48	$9.66	$26.14	$637.12
7	$27.53	$74.50	$1,815.48	49	$9.42	$25.48	$621.06
8	$26.84	$72.62	$1,769.70	50	$9.18	$24.84	$605.40
9	$26.16	$70.79	$1,725.08	51	$8.95	$24.22	$590.13
10	$25.50	$69.00	$1,681.58	52	$8.72	$23.61	$575.25
11	$24.86	$67.26	$1,639.17	53	$8.50	$23.01	$560.74
12	$24.23	$65.57	$1,597.84	54	$8.29	$22.43	$546.60
13	$23.62	$63.91	$1,557.55	55	$8.08	$21.86	$532.82
14	$23.03	$62.30	$1,518.27	56	$7.88	$21.31	$519.38
15	$22.45	$60.73	$1,479.98	57	$7.68	$20.78	$506.29
16	$21.88	$59.20	$1,442.66	58	$7.48	$20.25	$493.52
17	$21.33	$57.71	$1,406.29	59	$7.30	$19.74	$481.08
18	$20.79	$56.25	$1,370.82	60	$7.11	$19.24	$468.94
19	$20.27	$54.83	$1,336.26	61	$6.93	$18.76	$457.12
20	$19.75	$53.45	$1,302.56	62	$6.76	$18.28	$445.59
21	$19.26	$52.10	$1,269.71	63	$6.59	$17.82	$434.36
22	$18.77	$50.79	$1,237.70	64	$6.42	$17.37	$423.40
23	$18.30	$49.51	$1,206.49	65	$6.26	$16.94	$412.73
24	$17.84	$48.26	$1,176.06	66	$6.10	$16.51	$402.32
25	$17.39	$47.04	$1,146.41	67	$5.95	$16.09	$392.17
26	$16.95	$45.86	$1,117.50	68	$5.80	$15.69	$382.28
27	$16.52	$44.70	$1,089.32	69	$5.65	$15.29	$372.64
28	$16.10	$43.57	$1,061.85	70	$5.51	$14.91	$363.25
29	$15.70	$42.47	$1,035.07	71	$5.37	$14.53	$354.09
30	$15.30	$41.40	$1,008.97	72	$5.23	$14.16	$345.16
31	$14.92	$40.36	$983.53	73	$5.10	$13.81	$336.45
32	$14.54	$39.34	$958.73	74	$4.97	$13.46	$327.97
33	$14.17	$38.35	$934.55	75	$4.85	$13.12	$319.70
34	$13.82	$37.38	$910.98	76	$4.73	$12.79	$311.64
35	$13.47	$36.44	$888.01	77	$4.61	$12.47	$303.78
36	$13.13	$35.52	$865.62	78	$4.49	$12.15	$296.12
37	$12.80	$34.62	$843.79	79	$4.38	$11.84	$288.65
38	$12.47	$33.75	$822.51	80	$4.27	$11.55	$281.37
39	$12.16	$32.90	$801.77	81	$4.16	$11.25	$274.28
40	$11.85	$32.07	$781.56	82	$4.05	$10.97	$267.36
41	$11.55	$31.26	$761.85	83	$3.95	$10.69	$260.62

Month	Interest	Payment	Balance
84	$3.85	$10.42	$254.05
85	$3.76	$10.16	$247.64
86	$3.66	$10.00	$241.30
87	$3.57	$10.00	$234.87
88	$3.47	$10.00	$228.34
89	$3.38	$10.00	$221.72
90	$3.28	$10.00	$215.00
91	$3.18	$10.00	$208.17
92	$3.08	$10.00	$201.25
93	$2.98	$10.00	$194.23
94	$2.87	$10.00	$187.10
95	$2.77	$10.00	$179.86
96	$2.66	$10.00	$172.52
97	$2.55	$10.00	$165.07
98	$2.44	$10.00	$157.51
99	$2.33	$10.00	$149.84
100	$2.22	$10.00	$142.06
101	$2.10	$10.00	$134.16
102	$1.98	$10.00	$126.14
103	$1.86	$10.00	$118.01
104	$1.74	$10.00	$109.75
105	$1.62	$10.00	$101.37
106	$1.50	$10.00	$92.87
107	$1.37	$10.00	$84.24
108	$1.25	$10.00	$75.49
109	$1.12	$10.00	$66.61
110	$0.98	$10.00	$57.59
111	$0.85	$10.00	$48.44
112	$0.72	$10.00	$39.16
113	$0.58	$10.00	$29.74
114	$0.44	$10.00	$20.18
115	$0.30	$10.00	$10.47
116	$0.15	$10.00	$0.63
117	$0.01	$0.64	$0.00

Credit Card Solution

		Card A	Card B	Card C
Card Name		Citi Dividend Cash Back Student Card		
Web Site Used		http://www.creditcards.com		
Describe Special Features		5 percent cash back at supermarkets, drugstores, gas stations 1 percent cash back on other purchases 1 percent cash back on balance transfers		
Annual Fee		None		
Grace Period		20 days minimum		
Purchases	Regular APR	17.74 percent		
	Intro APR and period	0 percent for 6 months		
Balance Transfers	Regular APR	17.74 percent		
	Intro APR and period	0 percent for 6 months		
	Fee	3 percent, $5 minimum $75 maximum		
Cash Advances	Regular APR	22.74 percent		
	Intro APR and period	0 percent for 6 months		
	Fee	3 percent, $5 minimum		
Late Fees (include all levels)		$15/$29/$39		
Over the Credit Limit Fee		$35		
Default APR		31.74 percent		
Transactions in Foreign Currency		3 percent		
When would you get bumped to the default rate?		Late payment, exceed credit limit, make a payment that is not honored		
Eligibility Requirements for the Card		18 years old college or graduate student		

Mortgages and Loans

Buying Your First Home

Few people have enough money saved to buy a house without getting a mortgage — particularly for their first home. In this project you will select a house that you would like to buy and investigate the total costs involved in owning that home.

1. (10 points) Use the Internet to select a house to be purchased. Choose a house that is within your budget and is close to where you would like to work. Determine the salary required to afford the mortgage for this house. Show evidence of this work. Include a picture of your house and write a paragraph describing your reasons for choosing this house.

2. (25 points) Decide on a down payment and find a mortgage for the remainder of the cost. List the source of the loan and your reference (which Web site or newspaper). Explain why you chose the loan you did. Compare your choice of a 15-year versus a 30-year mortgage, and address your decision about whether or not to pay points. Justify your choice of mortgage by calculating the monthly payment and the total paid over time for each option. Clearly explain the reasons for your final mortgage choice.

3. (10 points) List the expenses that you'll need to pay at closing and estimate the cost for each. Determine the total amount that you will have to bring to the closing.

4. (25 points) Determine the total cost of your monthly mortgage payment — including real estate tax, homeowner's insurance and private mortgage insurance (PMI). To calculate your real estate tax, you'll need to research the assessment rate and mill rate for your town or city (attach a printout of this information to your report). Show evidence supporting your estimate for each portion of your monthly payment.

5. (20 points) Create an amortization table charting the payments, interest, principal and balance for the duration of the mortgage. Calculate the total spent in the *first year* in interest, principal and repayment of the loan. Calculate the total spent in the *last year* in interest, principal and repayment of the loan. Calculate the total spent during the *entire length* of the loan in interest, principal and repayment of the loan.

6. (10 points) Evaluate your financial decision to obtain a mortgage to make this purchase. Was it worth the interest you had to pay? Include a discussion of good debt vs. bad debt in your evaluation.

Present your findings in a typed report.

Sample Project

Buying Your First Home

Finding My House

Using http://www.lewisandbeth.com/, I found a house in East Hartland, CT for $216,500. This house has four bedrooms and two bathrooms. It sits on 0.7 acres and features hardwood floors and a basement. I chose this house because I like Cape Cod style homes and it is in a good school district. There is enough land for me to have a garden and some pets.

The Web site estimates that my monthly mortgage payment will be $1,095. I then used the home affordability calculator from http://cgi.money.cnn.com/tools/houseafford/houseafford.html. From the budget project, I project that I will earn about $35,000 a year and that my husband will earn a similar salary. This makes our total gross income $70,000 per year. These are the inputs that I entered into the calculator:

Gross annual income: $ 70,000

Down payment amount: $ 15,000

Monthly debt: (e.g., student loan, credit card payments) $ 150

Mortgage rate: 6%

Annual property taxes: $ 3,500

Annual homeowner's insurance: $ 481

The calculator indicated that I could afford a $232,093.19 home and make a $1,301.58 monthly mortgage payment. This house is within those limits.

Getting a Mortgage

I decided to make a down payment of $15,000. This leaves me with $201,500 that I must mortgage. I compared different mortgage options at Bank of America. With good credit, I could qualify for the following rates:

Mortgage Type	Current Rate	Points	Monthly Payment
30-Year Fixed-Rate Mortgage	6.250	1.153	$1,241.85
	6.625	-0.173	$1,291.37
	7.000	-0.984	$1,341.68
15-Year Fixed-Rate Mortgage	5.875	1.209	$1,692.68
	6.250	0.066	$1,733.54
	6.625	-1.053	$1,774.94

Getting a Mortgage, continued

With the 15-year mortgage, I would spend $304,682.40 ($1,692.68*180) in total monthly payments. With the 30-year mortgage, I would have to spend $447,066 (1,241.85*360). Although I could save $142,383.60 ($447,066-$304,682.40) in the long run if I choose a 15-year mortgage, the monthly payment would be difficult for me to afford.

According to the home affordability calculator I used earlier, only the first two 30-year mortgage options are within my monthly budget. The difference between these two options is the amount you must pay up front in points. One point is 1 percent of the mortgaged amount. The first option requires me to pay $2,323.30 at the closing, in addition to my closing costs and down payment. The second option offers negative points (they pay me money at the closing!). I would receive $348.60 at the time of the closing to offset some of my fees. Paying points affects my interest rate, which affects how much money I will pay in the long run. A difference of $2,671.90 ($2,323.30-(-$348.60)) paid at closing results in a $49.52 ($1,291.37-$1,241.85) difference in my monthly payment. Over 360 payments, this can save me $17,827.20, making the $2,671.90 difference well worth it. This will help me only if I keep this mortgage long enough. Saving $49.52 per month, I will need to keep the mortgage for 54 ($2,671.90 / $49.52) months to break even. This is only four years and nine months. Even if I move or refinance in seven years, I will benefit from paying the points.

Conclusion: I will go with a 30-year fixed-rate mortgage and pay 1.153 points.

Closing Costs

On the Bank of America Web site, I found a list of closing costs I would expect to pay for my mortgage.

	Standard Fees
Items payable in connection with the loan — HUD Series 800	
MUD 802 Loan discount fee	$2,323.30
HUD 808 Tax lien service fee	$75.00
HUD 811 Application fee	$200.00
HUD 815 Flood hazard determination fee	$11.00
MUD 875 Lender closing fee	$619.00
Subtotal	$3,228.30
Items to be paid in advance (premiums) — MUD Series 900	
HUD 901 Prepaid interest	$1,035.10
MUD 903 Hazard insurance premiums (l2 mos)	$705.25
Subtotal	$1,740.35
Items used for escrow/impound reserves — MUD Series 1000	
HUD 1001 Hazard insurance reserves (1 month)	$58.77
HUD 1003 City property taxes (5 months)	$4,902.08
Subtotal	$4,960.85
Additional title charges — HUD Series 1100	
HUD1102 Abstract or title search	$200.00
HUD 1107 Attorney's settlement/abstract/title fee	$700.00
HUD 1110 Owner's coverage	$811.05
HUD 1125 Courier fee - settlement agent	$ 30.00
Subtotal	$1,741.05
Total Estimated Costs	$11,670.55

Although other banks may charge you, this bank offers the following services for free: loan origination, application or appraisal, credit report and flood determination.

In total, I will need to bring $22,670.55 to the closing. This includes points, all closing costs and my down payment.

Total Monthly Payment

Each month, my payment will reduce my loan balance and pay interest to my lender. I will also pay my property taxes and homeowner's insurance into an escrow account. Yearly property taxes = Assessed Value * Mill Rate. The assessment value is 70 percent of the market value of the home. The mill rate is the amount paid for every $1,000 of assessed value. Hartland's mill rate was $26.50 in 2004. The assessed value of my home is 0.70 * $216,500 = $151,550. I divide this by 1000 and multiply by the mill rate. Property tax = 151,550 / 1000 * 26.50 $4,016.08. The monthly share paid into escrow is $4,016.08 / 12 = $334.67.

According to http://www.naic.org/, the average premium paid by Connecticut residents for homeowners insurance in 2003 was $714. Based on this, I would expect to pay $59.50 per month into escrow. Until I own 20 percent of the home, I will need to pay private mortgage insurance (PMI). To estimate my PMI, I used a calculator I found at http://www.hsh.com/calculators.html. They projected my PMI would cost me $130.98 per month for 122 months. As the value of my house increases, I can have my home reassessed and hopefully cancel PMI before this time.

This brings my total monthly payment to $130.98 + $334.67 + $59.50 + $1,241.85 = $1,767.

Amortization Table

When I checked the monthly payment using the TI calculator's TVM Solver, I found that the rate was 6.259 percent, not 6.250 percent. I used 6.259 percent to create my amortization table.

Month	Payment	Interest	Principal	Balance
				$201,500.00
1	$1,241.85	$1,050.99	$190.86	$201,309.14
2	$1,241.85	$1,049.99	$191.86	$201,117.29
3	$1,241.85	$1,048.99	$192.86	$200,924.43
4	$1,241.85	$1,047.99	$193.86	$200,730.57
5	$1,241.85	$1,046.98	$194.87	$200,535.70
6	$1,241.85	$1,045.96	$195.89	$200,339.81
7	$1,241.85	$1,044.94	$196.91	$200,142.89
8	$1,241.85	$1,043.91	$197.94	$199,944.96
9	$1,241.85	$1,042.88	$198.97	$199,745.99
10	$1,241.85	$1,041.84	$200.01	$199,545.98
11	$1,241.85	$1,040.80	$201.05	$199,344.93
12	$1,241.85	$1,039.75	$202.10	$199,142.83
13	$1,241.85	$1,038.70	$203.15	$198,959.67
14	$1,241.85	$1,037.64	$204.21	$198,735.46
15	$1,241.85	$1,036.57	$205.28	$198,530.18
16	$1,241.85	$1,035.50	$206.35	$198,323.83
17	$1,241.85	$1,034.42	$207.43	$198,116.40
18	$1,241.85	$1,033.34	$208.51	$197,907.90
19	$1,241.85	$1,032.25	$209.60	$197,698.30
20	$1,241.85	$1,031.16	$210.69	$197,487.61
21	$1,241.85	$1,030.06	$211.79	$197,275.82
22	$1,241.85	$1,028.96	$212.89	$197,062.93
23	$1,241.85	$1,027.85	$214.00	$196,848.93
24	$1,241.85	$1,026.73	$215.12	$196,633.81
25	$1,241.85	$1,025.61	$216.24	$196,417.57
26	$1,241.85	$1,024.48	$217.37	$196,200.20
27	$1,241.85	$1,023.35	$218.50	$195,981.70
28	$1,241.85	$1,022.21	$219.64	$195,762.06
29	$1,241.85	$1,021.06	$220.79	$195,541.27
30	$1,241.85	$1,019.91	$221.94	$195,319.33
31	$1,241.85	$1,018.75	$223.10	$195,096.23
32	$1,241.85	$1,017.59	$224.26	$194,871.97
33	$1,241.85	$1,016.42	$225.43	$194,646.54
34	$1,241.85	$1,015.24	$226.61	$194,419.94
35	$1,241.85	$1,014.06	$227.79	$194,192.15
36	$1,241.85	$1,012.87	$228.98	$193,963.17
37	$1,241.85	$1,011.68	$230.17	$193,733.00
38	$1,241.85	$1,010.48	$231.37	$193,501.63
39	$1,241.85	$1,009.27	$232.58	$293,269.05
40	$1,241.85	$1,008.06	$233.79	$193,035.26
41	$1,241.85	$1,006.84	$235.01	$192,800.25
42	$1,241.85	$1,005.61	$236.24	$192,564.02
43	$1,241.85	$1,004.38	$237.47	$192,326.55
44	$1,241.85	$1,003.14	$238.71	$192,087.84
45	$1,241.85	$1,001.90	$239.95	$191,847.89

Month	Payment	Interest	Principal	Balance
46	$1,241.85	$1,000.65	$241.20	$191,606.69
47	$1,241.85	$999.39	$242.46	$191,364.22
48	$1,241.85	$998.12	$243.73	$191,120.50
49	$1,241.85	$996.85	$245.00	$190,875.50
50	$1,241.85	$995.57	$246.28	$190,629.23
51	$1,241.85	$994.29	$247.56	$190,381.67
52	$1,241.85	$993.00	$248.85	$190,132.81
53	$1,241.85	$991.70	$250.15	$189,882.67
54	$1,241.85	$990.40	$251.45	$189,631.21
55	$1,241.85	$989.08	$252.77	$189,378.45
56	$1,241.85	$987.77	$254.08	$189,124.36
57	$1,241.85	$986.44	$255.41	$188,868.95
58	$1,241.85	$985.11	$256.74	$188,612.21
59	$1,241.85	$983.77	$258.08	$188,354.13
60	$1,241.85	$982.42	$259.43	$188,094.71
61	$1,241.85	$981.07	$260.78	$187,853.93
62	$1,241.85	$979.71	$262.14	$187,571.79
63	$1,241.85	$978.34	$263.51	$187,308.28
64	$1,241.85	$976.97	$264.88	$187,043.40
65	$1,241.85	$975.59	$266.26	$186,777.14
66	$1,241.85	$974.20	$267.65	$186,509.49
67	$1,241.85	$972.80	$269.05	$186,240.44
68	$1,241.85	$971.40	$270.45	$185,969.99
69	$1,241.85	$969.99	$271.86	$185,898.13
70	$1,241.85	$968.57	$273.28	$185,424.85
71	$1,241.85	$967.15	$274.70	$185,150.14
72	$1,241.85	$965.71	$276.14	$184,874.00
73	$1,241.85	$964.27	$277.58	$184,596.43
74	$1,241.85	$962.82	$279.03	$184,317.40
75	$1,241.85	$961.37	$280.48	$184,036.92
76	$1,241.85	$959.91	$281.94	$183,754.97
77	$1,241.85	$958.44	$283.41	$183,471.56
78	$1,241.85	$956.96	$284.89	$183,186.67
79	$1,241.85	$955.47	$286.38	$182,900.29
80	$1,241.85	$953.98	$287.87	$182,612.42
81	$1,241.85	$952.48	$289.37	$182,323.04
82	$1,241.85	$950.97	$290.88	$182,032.16
83	$1,241.85	$849.45	$292.40	$181,739.76
84	$1,241.85	$947.92	$293.93	$181,445.83
85	$1,241.85	$946.39	$295.46	$181,150.37
86	$1,241.85	$944.85	$297.00	$180,853.37
87	$1,241.85	$943.30	$298.55	$180,554.82
88	$1,241.85	$941.74	$300.11	$180,254.72
89	$1,241.85	$940.18	$301.67	$179,953.05
90	$1,241.85	$938.61	$303.24	$179,649.80

Month	Payment	Interest	Principal	Balance
91	$1,241.85	$937.02	$304.83	$179,344.98
92	$1,241.85	$935.43	$306.42	$179,038.56
93	$1,241.85	$933.84	$308.01	$178,730.54
94	$1,241.85	$932.23	$309.62	$178,420.92
95	$1,241.85	$930.61	$311.24	$178,109.69
96	$1,241.85	$928.99	$312.86	$177,796.83
97	$1,241.85	$927.36	$314.49	$177,482.34
98	$1,241.85	$925.72	$316.13	$177,166.20
99	$1,241.85	$924.07	$317.78	$176,848.42
100	$1,241.85	$922.41	$319.44	$176,528.99
101	$1,241.85	$920.75	$321.10	$176,207.88
102	$1,241.85	$919.07	$322.78	$175,885.10
103	$1,241.85	$917.39	$324.46	$175,560.64
104	$1,241.85	$915.70	$326.15	$175,234.48
105	$1,241.85	$913.99	$327.86	$174,906.63
106	$1,241.85	$912.28	$329.57	$174,577.06
107	$1,241.85	$910.56	$331.29	$174,245.78
108	$1,241.85	$908.84	$333.01	$173,912.76
109	$1,241.85	$907.10	$334.75	$173,578.01
110	$1,241.85	$905.35	$336.50	$173,241.52
111	$1,241.85	$903.60	$338.25	$172,903.27
112	$1,241.85	$901.83	$340.02	$172,563.25
113	$1,241.85	$900.06	$341.79	$172,221.46
114	$1,241.85	$898.28	$343.57	$171,877.89
115	$1,241.85	$896.49	$345.36	$171,532.53
116	$1,241.85	$894.69	$347.16	$171,185.36
117	$1,241.85	$892.87	$348.98	$170,836.39
118	$1,241.85	$891.05	$350.80	$170,485.59
119	$1,241.85	$889.22	$352.63	$170,132.97
120	$1,241.85	$887.39	$354.46	$169,778.50
121	$1,241.85	$885.54	$356.31	$169,422.19
122	$1,241.85	$883.68	$358.17	$169,064.01
123	$1,241.85	$881.81	$360.04	$168,703.97
124	$1,241.85	$879.93	$361.92	$168,342.06
125	$1,241.85	$878.04	$363.81	$167,978.25
126	$1,241.85	$876.15	$365.70	$167,612.55
127	$1,241.85	$874.24	$367.61	$167,244.94
128	$1,241.85	$872.32	$369.53	$166,875.41
129	$1,241.85	$870.39	$371.48	$166,503.95
130	$1,241.85	$868.46	$373.39	$166,130.56
131	$1,241.85	$866.51	$375.34	$165,755.22
132	$1,241.85	$864.55	$377.30	$165,377.92
133	$1,241.85	$862.58	$379.27	$164,998.65
134	$1,241.85	$860.61	$381.24	$164,617.41
135	$1,241.85	$858.62	$383.23	$164,234.18

Month	Payment	Interest	Principal	Balance
136	$1,241.85	$856.62	$385.23	$163,848.94
137	$1,241.85	$854.61	$387.24	$163,461.70
138	$1,241.85	$852.59	$389.26	$163,072.44
139	$1,241.85	$850.56	$391.29	$162,681.15
140	$1,241.85	$848.52	$393.33	$162,287.82
141	$1,241.85	$846.47	$395.38	$161,892.43
142	$1,241.85	$844.40	$397.45	$161,494.99
143	$1,241.85	$842.33	$399.52	$161,095.47
144	$1,241.85	$840.25	$401.60	$160,693.87
145	$1,241.85	$838.15	$403.70	$160,290.17
146	$1,241.85	$836.05	$405.80	$159,884.87
147	$1,241.85	$833.93	$407.92	$159,476.45
148	$1,241.85	$831.80	$410.05	$159,066.40
149	$1,241.85	$829.66	$412.19	$158,654.21
150	$1,241.85	$827.51	$414.34	$158,239.88
151	$1,241.85	$825.35	$416.50	$157,823.38
152	$1,241.85	$823.18	$418.67	$157,404.71
153	$1,241.85	$821.00	$420.85	$156,988.86
154	$1,241.85	$818.80	$423.05	$156,560.81
155	$1,241.85	$816.60	$425.25	$156,135.55
156	$1,241.85	$814.38	$427.47	$155,708.08
157	$1,241.85	$812.15	$429.70	$155,278.38
158	$1,241.85	$809.91	$431.94	$154,846.43
159	$1,241.85	$807.65	$434.20	$154,412.24
160	$1,241.85	$805.39	$436.46	$153,975.77
161	$1,241.85	$803.11	$438.74	$153,537.04
162	$1,241.85	$800.82	$441.03	$153,096.01
163	$1,241.85	$798.52	$443.33	$152,652.68
164	$1,241.85	$796.21	$445.64	$152,207.04
165	$1,241.85	$793.89	$447.96	$151,759.08
166	$1,241.85	$791.55	$450.30	$151,308.78
167	$1,241.85	$789.20	$452.65	$150,856.13
168	$1,241.85	$786.84	$455.01	$150,401.12
169	$1,241.85	$784.47	$457.38	$149,943.74
170	$1,241.85	$782.08	$459.77	$149,483.97
171	$1,241.85	$779.68	$462.17	$149,021.81
172	$1,241.85	$777.27	$464.58	$148,557.23
173	$1,241.85	$774.85	$467.00	$148,090.23
174	$1,241.85	$772.41	$469.44	$147,620.79
175	$1,241.85	$769.97	$471.88	$147,148.91
176	$1,241.85	$767.50	$474.35	$146,674.56
177	$1,241.85	$765.03	$476.82	$146,197.74
178	$1,241.85	$762.54	$479.31	$145,718.43
179	$1,241.85	$760.04	$481.81	$145,236.63
180	$1,241.85	$757.53	$484.32	$144,752.31

Month	Payment	Interest	Principal	Balance
181	$1,241.85	$755.00	$486.85	$144,265.46
182	$1,241.85	$752.46	$489.39	$143,776.08
183	$1,241.85	$749.91	$491.94	$143,284.14
184	$1,241.85	$747.35	$494.50	$142,789.63
185	$1,241.85	$744.77	$497.08	$142,292.55
186	$1,241.85	$742.17	$499.68	$141,792.88
187	$1,241.85	$739.57	$502.28	$141,290.59
188	$1,241.85	$736.95	$504.90	$140,785.69
189	$1,241.85	$734.31	$507.54	$140,278.16
190	$1,241.85	$731.67	$510.18	$139,767.97
191	$1,241.85	$729.01	$512.84	$139,255.13
192	$1,241.85	$726.33	$515.52	$138,139.61
193	$1,241.85	$723.64	$518.21	$138,221.41
194	$1,241.85	$720.94	$520.91	$137,700.49
195	$1,241.85	$718.22	$523.63	$137,176.87
196	$1,241.85	$715.49	$526.36	$136,650.51
197	$1,241.85	$712.75	$529.10	$136,121.41
198	$1,241.85	$709.99	$531.86	$135,589.54
199	$1,241.85	$707.21	$534.64	$135,054.90
200	$1,241.85	$704.42	$537.43	$134,517.48
201	$1,241.85	$701.62	$540.23	$133,977.25
202	$1,241.85	$698.80	$543.05	$133,434.20
203	$1,241.85	$695.97	$545.88	$132,888.32
204	$1,241.85	$693.12	$548.73	$132,339.60
205	$1,241.85	$690.26	$551.59	$131,788.01
206	$1,241.85	$687.38	$554.47	$131,233.54
207	$1,241.85	$684.49	$557.36	$130,676.18
208	$1,241.85	$681.59	$560.26	$130,115.92
209	$1,241.85	$678.66	$563.19	$129,552.73
210	$1,241.85	$675.73	$566.12	$128,986.61
211	$1,241.85	$672.77	$569.08	$128,417.53
212	$1,241.85	$669.80	$572.05	$127,845.48
213	$1,241.85	$666.82	$575.03	$127,270.46
214	$1,241.85	$663.82	$578.03	$126,692.43
215	$1,241.85	$660.81	$581.04	$126,111.38
216	$1,241.85	$657.78	$584.07	$125,527.31
217	$1,241.85	$654.73	$587.12	$124,940.19
218	$1,241.85	$651.67	$590.18	$124,350.01
219	$1,241.85	$648.59	$598.26	$123,756.75
220	$1,241.85	$645.49	$596.36	$123,160.39
221	$1,241.85	$642.38	$599.47	$122,560.92
222	$1,241.85	$639.26	$602.59	$121,958.33
223	$1,241.85	$636.11	$605.74	$121,352.60
224	$1,241.85	$632.95	$608.90	$120,743.70
225	$1,241.85	$629.78	$612.07	$120,131.63

Month	Payment	Interest	Principal	Balance
226	$1,241.85	$626.59	$615.26	$119,516.37
227	$1,241.85	$623.38	$618.47	$118,897.89
228	$1,241.85	$620.15	$621.70	$118,276.19
229	$1,241.85	$616.91	$624.94	$117,651.25
230	$1,241.85	$613.65	$628.20	$117,025.05
231	$1,241.85	$610.37	$631.48	$116,391.58
252	$1,241.85	$607.08	$634.77	$115,756.80
233	$1,241.85	$603.77	$638.08	$115,118.72
234	$1,241.85	$600.44	$641.41	$114,477.31
235	$1,241.85	$597.09	$644.76	$113,832.56
236	$1,241.85	$593.73	$648.12	$113,184.44
237	$1,241.85	$590.35	$651.50	$112,532.94
238	$1,241.85	$586.95	$654.90	$111,878.04
239	$1,241.85	$583.54	$658.31	$111,219.73
240	$1,241.85	$580.10	$661.75	$110,557.98
241	$1,241.85	$576.65	$665.20	$109,892.79
242	$1,241.85	$573.18	$668.67	$109,224.12
243	$1,241.85	$569.69	$672.16	$108,551.96
244	$1,241.85	$566.19	$675.66	$107,876.30
245	$1,241.85	$562.66	$679.19	$107,197.12
246	$1,241.85	$559.12	$682.73	$106,514.39
247	$1,241.85	$555.56	$688.29	$105,828.10
248	$1,241.85	$551.98	$689.87	$105,138.23
249	$1,241.85	$548.38	$693.47	$104,444.77
250	$1,241.85	$544.77	$697.08	$103,747.68
251	$1,241.85	$541.13	$700.72	$103,046.96
252	$1,241.85	$537.48	$704.37	$102,342.59
253	$1,241.85	$533.80	$708.05	$101,634.54
254	$1,241.85	$530.11	$711.74	$100,922.80
255	$1,241.85	$526.40	$715.45	$100,207.35
256	$1,241.85	$522.66	$719.19	$99,488.16
257	$1,241.85	$518.91	$722.94	$98,765.23
258	$1,241.85	$515.14	$726.71	$98,038.52
259	$1,241.85	$511.35	$730.50	$97,308.02
260	$1,241.85	$507.54	$734.31	$96,573.71
261	$1,241.85	$503.71	$738.14	$95,835.58
262	$1,241.85	$499.86	$741.99	$95,093.59
263	$1,241.85	$495.99	$745.86	$94,347.73
264	$1,241.85	$492.10	$749.75	$93,597.98
265	$1,241.85	$488.19	$753.66	$92,844.32
266	$1,241.85	$484.26	$757.59	$92,086.73
267	$1,241.85	$480.31	$761.54	$91,325.19
268	$1,241.85	$476.34	$765.51	$90,559.68
269	$1,241.85	$472.34	$769.51	$89,790.17
270	$1,241.85	$468.33	$773.52	$89,016.65

Month	Payment	Interest	Principal	Balance
271	$1,241.85	$464.30	$777.55	$88,239.10
272	$1,241.85	$460.24	$781.61	$87,457.49
273	$1,241.85	$456.16	$785.69	$86,671.81
274	$1,241.85	$452.07	$789.78	$85,882.02
275	$1,241.85	$447.95	$793.90	$85,088.12
276	$1,241.85	$443.81	$798.04	$84,290.07
277	$1,241.85	$439.64	$802.21	$83,487.87
278	$1,241.85	$435.46	$806.39	$82,681.47
279	$1,241.85	$431.25	$810.60	$81,870.88
280	$1,241.85	$427.02	$814.83	$81,056.05
281	$1,241.85	$422.77	$819.08	$80,236.98
282	$1,241.85	$418.50	$823.35	$79,413.63
283	$1,241.85	$414.21	$827.64	$78,585.99
284	$1,241.85	$409.89	$831.96	$77,754.03
285	$1,241.85	$405.55	$836.30	$76,917.73
286	$1,241.85	$401.19	$840.66	$76,077.07
287	$1,241.85	$396.81	$845.04	$75,232.03
288	$1,241.85	$392.40	$849.45	$74,382.57
289	$1,241.85	$387.97	$853.88	$73,528.69
290	$1,241.85	$383.51	$858.34	$72,670.35
291	$1,241.85	$379.04	$862.81	$71,807.54
292	$1,241.85	$374.54	$867.31	$70,940.23
293	$1,241.85	$370.01	$871.84	$70,068.39
294	$1,241.85	$365.47	$876.38	$69,192.00
295	$1,241.85	$360.89	$880.96	$68,311.05
296	$1,241.85	$356.30	$885.55	$67,425.50
297	$1,241.85	$351.68	$890.17	$66,535.33
298	$1,241.85	$347.04	$894.81	$65,640.52
299	$1,241.85	$342.37	$899.48	$64,741.04
300	$1,241.55	$337.68	$904.17	$63,836.86
301	$1,241.85	$332.96	$908.89	$62,927.98
302	$1,241.85	$328.22	$913.63	$62,014.35
303	$1,241.85	$323.46	$918.39	$61,095.95
304	$1,241.85	$318.67	$923.18	$60,172.77
305	$1,241.85	$313.85	$928.00	$59,244.77
306	$1,241.85	$309.01	$932.84	$58,311.93
307	$1,241.85	$304.15	$937.70	$57,374.23
308	$1,241.85	$299.25	$942.60	$56,431.63
309	$1,241.85	$294.34	$947.51	$55,484.12
310	$1,241.85	$289.40	$952.45	$54,531.67
311	$1,241.85	$284.43	$957.42	$53,574.24
312	$1,241.85	$279.43	$962.42	$52,611.83
313	$1,241.85	$274.41	$967.44	$51,644.39
314	$1,241.85	$269.37	$972.48	$50,671.91
315	$1,241.85	$264.30	$977.55	$49,694.36

Month	Payment	Interest	Principal	Balance
316	$1,241.85	$259.20	$982.65	$48,711.71
317	$1,241.85	$254.07	$987.78	$47,723.93
318	$1,241.85	$248.92	$992.93	$46,731.00
319	$1,241.85	$243.74	$998.11	$45,732.89
320	$1,241.85	$238.54	$1,003.31	$44,729.57
321	$1,241.85	$238.30	$1,008.55	$43,721.03
322	$1,241.85	$228.04	$1,013.81	$42,707.22
323	$1,241.85	$222.75	$1,019.10	$41,688.12
324	$1,241.85	$217.44	$1,024.41	$40,663.71
325	$1,241.85	$212.10	$1,029.75	$39,638.85
326	$1,241.85	$206.72	$1,035.13	$38,898.83
327	$1,241.85	$201.33	$1,040.52	$37,558.30
328	$1,241.85	$195.90	$1,045.95	$36,512.35
329	$1,241.85	$190.44	$1,051.41	$35,460.94
330	$1,241.85	$184.96	$1,056.89	$34,404.05
331	$1,241.85	$179.45	$1,062.40	$33,341.65
332	$1,241.85	$173.90	$1,067.95	$32,273.70
333	$1,241.85	$168.33	$1,073.52	$31,200.19
334	$1,241.85	$162.73	$1,079.12	$30,121.07
335	$1,241.85	$157.11	$1,084.74	$29,036.33
336	$1,241.85	$151.45	$1,090.40	$27,945.93
337	$1,241.85	$145.76	$1,096.09	$26,849.84
338	$1,241.85	$140.04	$1,101.81	$25,748.03
339	$1,242.85	$134.30	$1,107.55	$24,640.48
340	$1,241.85	$128.52	$1,113.33	$23,527.15
341	$1,241.85	$122.71	$1,119.14	$22,408.01
342	$1,241.85	$116.88	$1,124.97	$21,283.04
343	$1,241.85	$111.01	$1,130.84	$20,152.20
344	$1,241.85	$105.11	$1,136.74	$19,015.46
345	$1,241.85	$99.18	$1,142.67	$17,872.79
346	$1,241.85	$93.22	$1,148.63	$16,724.16
347	$1,241.85	$87.23	$1,154.62	$15,569.54
348	$1,241.85	$81.21	$1,160.64	$14,408.90
349	$1,241.85	$75.15	$1,166.70	$13,242.21
350	$1,241.85	$69.07	$1,172.78	$12,069.43
551	$1,241.85	$62.95	$1,178.90	$10,890.53
352	$1,241.85	$56.80	$1,185.05	$9,705.48
353	$1,241.85	$50.62	$1,191.23	$8,514.25
354	$1,241.85	$44.41	$1,197.44	$7,316.81
355	$1,241.85	$38.16	$1,203.69	$6,113.13
356	$1,241.85	$31.89	$1,209.96	$4,903.16
357	$1,241.85	$25.57	$1,216.28	$3,686.88
358	$1,241.85	$19.23	$1,222.62	$2,464.26
359	$1,241.85	$12.85	$1,229.00	$1,235.27
360	$1,241.71	$6.44	$1,235.27	$0.00

The Total Spent

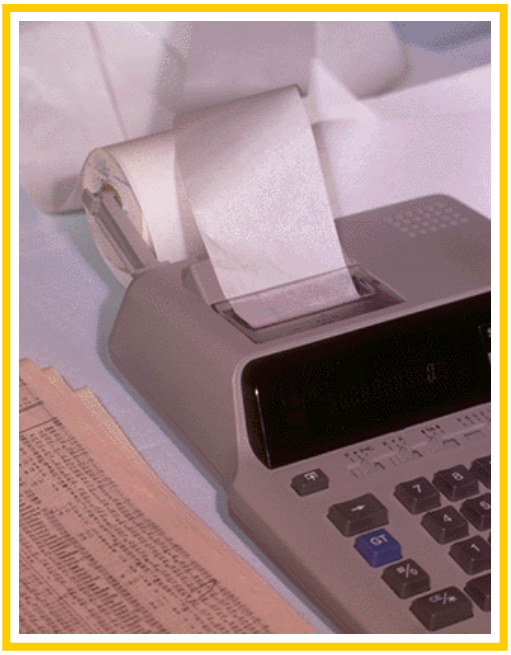
	Payment	Interest	Principal
First Year	$14,902.20	$12,545.03	$2,357.17
Last Year	$14,902.08	$493.16	$14,408.90
All 30 Years	$447,065.86	$245,585.86	$201,500.00

The Financial Decision

Is it worth it to take on so much debt? We live in a day when so many carry so much debt, we have to consider carefully whether all the interest we must pay over time is really worth it. Although $245,565.86 is a huge amount of interest, taking on debt to buy a home is a very sound financial decision. The value of the home increases over time, unlike the value of a car. You can draw on the equity you've built in your home if an emergency arises. And if you downsize later in life you can use the proceeds to help with retirement expenses.

You have to pay money for a place to live whether you rent or take on a mortgage. With a house, you have more freedom to do with it what you like. Is it not better to build an investment than just hand money to a landlord? It would be nice if you could buy the house outright and not have to pay interest, but who has that kind of cash? And if you tried to save for the entire purchase price, the value of the home would increase faster than you could save.

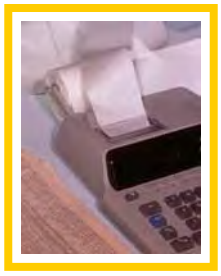
Saving and Investing



Sample Project

Saving for Retirement

How much do you need to save?



Step 1: Create a budget

Decide how much you'll spend in your retirement years (using today's dollars). List your major expenses and estimate their amounts. Total your yearly expenses.

Step 2: Convert to future dollars

Let's assume that you'll need to spend the amount of money you calculated from ages 65 to 95. Convert your total yearly expenses into future dollars.

Step 3: Withdraw from your retirement account

Subtract your expenses from your account each year. Remember to account for the interest you'll earn on the remaining balance. Try several different scenarios. Adjust the initial amount in the account and the assumed interest rate(s).

Step 4: Plan your yearly savings

Start in your first year out of school and continue to age 64. List the amount that you will save for retirement each year. Increase this amount for inflation and anticipated salary increases. List the amount that you'll have in your retirement account, assuming different rates of return. Make sure that you are able to meet the goal for your retirement account balance at age 65.

Step 5: Check out retirement calculators online

Go to http://personal.fidelity.com/retirement/retcalcframe.html and use the Retirement Planning Calculator. Assume that you are married and have a working spouse, you plan to retire at 65 and live until you are 90 (you could try out a life expectancy calculator if you like). Assume you'll receive no money from Social Security or a pension plan. Use the annual retirement expenses you calculated in Step 1. If you say that you invest $0, it will tell you how much money you'll need to invest to reach your goal. Report the estimated surplus (shortfall) in today's dollars. How much must you save each year to reach your goal? Experiment with the inputs until you are satisfied with the results. Print the graph.

Step 6: Conclusions

Write a paragraph explaining what you've learned from using the retirement calculator. Are their results in line with the conclusions you made in Step 4? Outline your retirement budget based on the results of this investigation.

Saving for Retirement

Excel Solutions

Step 1

Yearly Retirement Budget	In Today's Dollars
Food	$ 4,000
Car Expenses	$ 6,000
Property Tax	$ 4,000
Health Care	$10,000
Utilities	$ 3,000
Entertainment	$ 5,000
Travel	$10,000
Total	$42,000

Step 2

Age	Income Required *(assumes 3% inflation increase)*
65	$149,709.70
66	$154,201.00
67	$158,827.03
68	$163,591.84
69	$168,499.59
70	$173,554.58
71	$178,761.22
72	$184,124.05
73	$189,647.77
74	$195,337.21
75	$201,197.32
76	$207,233.24
77	$213,450.24
78	$219,853.75
79	$226,449.36
80	$233,242.84
81	$240,240.13
82	$247,447.33
83	$254,870.75
84	$262,516.87
85	$270,392.38
86	$278,504.15
87	$286,859.27
88	$295,465.05
89	$304,329.00
90	$313,458.87
91	$322,862.64
92	$332,548.52
93	$342,524.98
94	$352,800.73
95	$363,384.75
	$7,485,886.17

Step 3

Age	Income Required *(assumes 3% inflation increase)*	Retirement Account Balance *(includes variable fluctuation in both interest and expenses)*
		$3,000,000.00
65	$149,709.70	$3,030,290.30
66	$154,201.00	$3,057,906.72
67	$158,827.03	$3,082,554.10
68	$163,591.84	$3,103,915.51
69	$168,499.59	$3,121,650.84
70	$173,554.58	$3,135,395.32
71	$178,761.22	$3,144,757.82
72	$184,124.05	$3,149,319.24
73	$189,647.77	$3,148,630.61
74	$195,337.21	$3,142,211.24
75	$201,197.32	$3,129,546.59
76	$207,233.24	$3,110,086.15
77	$213,450.24	$3,083,241.08
78	$219,853.75	$3,048,381.79
79	$226,449.36	$3,004,835.34
80	$233,242.84	$2,951,882.62
81	$240,240.13	$2,888,755.45
82	$247,447.33	$2,814,633.44
83	$254,870.75	$2,728,640.70
84	$262,516.87	$2,629,842.27
85	$270,392.38	$2,517,240.43
86	$278,504.15	$2,389,770.70
87	$286,859.27	$2,246,297.67
88	$295,465.05	$2,085,610.48
89	$304,329.00	$1,906,418.10
90	$313,458.87	$1,707,344.31
91	$322,862.64	$1,486,922.33
92	$332,548.52	$1,243,589.15
93	$342,524.98	$975,679.52
94	$352,800.73	$681,419.57
95	$363,384.75	$358,920.00

Step 2		Step 3		
Age	Income Required	Age	Income Required	Retirement Account Balance
				$3,000,000
65	=42000* l.03^(65-22)	65	=42000*103^(65-22)	=F4*1.06-E5
66	=B5*1.03	66	=E5*l.03	=F5*1.06-E6
67	=B6*1.03	67	=E6*1.03	=F6*1.06-E7
68	=B7*1.03	68	=E7*1.03	=F7*1.06-E8
69	=B8*1.03	69	=E8*1.03	=F8*1.06-E9
70	=B9*1.03	70	=E9*1.03	=F9*1.06-E10
71	=B10*1.03	71	=E10*1.03	=F10*1.06-E11
72	=B11*1.03	72	=E11*1.03	=F11*1.06-E12
73	=B12*1.03	73	=1112*1.03	=F12*1.06-E13
74	=B13*1.03	74	=1113*1.03	=F13*1.06-E14
75	=B14*1.03	75	=1114*1.03	=F14*1.06-E15
76	=B15*1.03	76	=1315*1.03	=F15*1.06-E16
77	=B16*1.03	77	=1316*1.03	=F16*1.06-E17
78	=B17*1.03	78	=1317*1.03	=F17*1.06-E18
79	=B18*1.03	79	=1318*1.03	=F18*1.06.E19
80	=B19*1.03	80	=1319*1.03	=F19*1.06-E20
81	=B20*1.03	81	=1320*1.03	=F20*1.06.E21
82	=B21*1.03	82	=1321*1.03	=F21*1.06-E22
83	=B22*1.03	83	=1322*1.03	=F22*1.06.E23
84	=B23*1.03	84	=1323*1.03	=F23*1.06.E24
85	=B24*1.03	85	=1324*1.03	=F24*1.06-E25
86	=B25*1.03	86	=1325*1.03	=F25*1.06-E26
87	=B26*1.03	87	=1326*1.03	=F26*1.06-E27
88	=B27*1.03	88	=1327*1.03	=F27*1.06-E28
89	=B28*1.03	89	=1328*1.03	=F28*1.06-E29
90	=B29*1.03	90	=1329*1.03	=F29*1.06-E30
91	=B30*1.03	91	=1330*1.03	=F30*1.06-E31
92	=B31*1.03	92	=1331*1.03	=F31*1.06-E32
93	=B32*1.03	93	=1332*1.03	=F32*1.06-E33
94	=B33*1.03	94	=1333*1.03	=F33*1.06-E34
95	=B34*1.03	95	=1334*1.03	=F34*1.06-E35
	SUM-$5:B35)			

Step 3

Age	Contribution	Account Balance	Age	Contribution	Account Balance	Age	Contribution	Account Balance
22	$3,300.00	$3,300.00	35	$12,700.00	$12,700.00	45	$39,700.00	$39,700.00
23	$3,432.00	$7,062.00	36	$13,208.00	$27,178.00	46	$41,288.00	$84,958.00
24	$3,569.26	$11,337.48	37	$13,738.32	$43,632.12	47	$42,939.52	$136,393.32
25	$3,712.05	$16,183.28	38	$14,285.77	$62,281.10	48	$44,657.10	$194,689.75
26	$3,860.53	$21,662.14	39	$14,857.20	$83,366.42	49	$46,443.36	$260,602.11
27	$4,014.95	$27,843.31	40	$15,451.49	$107,154.55	50	$48,301.12	$334,963.44
28	$4,175.55	$34,803.19	41	$16,059.55	$133,939.56	51	$50,233.17	$418,692.95
29	$4,342.57	$42,626.09	42	$16,712.33	$164,045.85	52	$52,242.49	$512,804.74
30	$4,516.26	$51,404.97	43	$17,380.83	$197,831.26	53	$54,332.19	$618,417.41
31	$4,690.93	$61,242.40	44	$16,016.06	$235,690.45	54	$56,505.48	$736,764.63
32	$4,884.81	$72,251.45	45	$18,799.10	$278,058.59	55	$58,765.70	$869,206.79
33	$5,080.20	$84,556.79	46	$19,551.07	$325,415.52	56	$61,116.33	$1,017,243.79
34	$5,283.41	$98,295.67	47	$20,333.11	$378,290.18	57	$63,560.98	$1,182,529.15
35	$5,494.74	$113,620.20	48	$21,148.43	$437,265.63	58	$66,103.42	$1,366,885.48
36	$5,714.53	$130,696.76	49	$21,992.29	$502,984.49	59	$68,747.55	$1,572,321.59
37	$5,943.11	$149,709.55	50	$22,871.98	$576,154.92	60	$71,497.46	$1,801,051.20
38	$6,180.84	$170,861.34	51	$23,786.86	$657,557.27	61	$74,357.36	$2,055,513.68
39	$6,428.07	$194,375.54	52	$24,738.34	$748,051.34	62	$77,331.65	$2,338.396.69
40	$6,685.19	$220,498.29	53	$25,727.87	$848,584.34	63	$80,424.92	$2,652,661.28
41	$6,952.60	$249,500.72	54	$26,756.98	$960,199.76	64	$83,641.91	$3,001,569.32
42	$7,230.71	$281,681.50	55	$27,827.26	$1,084,047.00		$1,182,189.72	
43	$7,519.93	$317,369.59	56	$28,940.35	$1,221,392.05			
44	$7,820.73	$356,927.28	57	$30,097.97	$1,373,629.22			
45	$8,133.56	$400,753.57	58	$31,301.89	$1,542,294.03			
46	$8,458.90	$449,287.83	59	$32,553.96	$1,729,077.40			
47	$8,797.26	$503,013.87	60	$33,856.12	$1,935,841.26			
48	$9,149.15	$562,464.41	61	$35,210.37	$2,164,635.76			
49	$9,515.12	$628,225.97	62	$36,616.78	$2,417,718.11			
50	$9,895.72	$700,944.28	63	$38,083.53	$2,697,573.46			
51	$10,291.55	$781,330.26	64	$39,606.87	$3,006,937.67			
52	$10,703.21	$870,166.50		$712,278.71				
53	$11,131.34	$968,314.49						
54	$11,576.59	$1,076,722.53						
55	$12,039.66	$1,196,434.44						
56	$12,521.24	$1,328,599.13						
57	$13,022.09	$1,474,481.14						
58	$13,542.98	$1,635,472.23						
59	$14,084.70	$1,813,104.15						
60	$14,648.08	$2,009,062.65						
61	$15,234.01	$2,225,202.92						
62	$15,843.37	$2,463,566.58						
63	$16,477.10	$2,726,400.34						
64	$17,136.19	$3,016,176.56						
	$363,040.86							

Step 4

Age	Contribution	Account Balance	Age	Contribution	Account Balance	Age	Contribution	Account Balance
22	$3,300	B4	35	$12,700	=F4	45	$39,700	=J4
23	=B4*1.04	=C4*l.l+B5	36	=F4*1.04	=G4*1.1+F5	46	=J4*1.04	=K4[4]1.l+J5
24	=B5*1.04	=C5*1.l+B6	37	=F5*1.04	=G5*1.1+F6	47	=J5*1.04	=K5*1.1+J6
25	=B6*1.04	=C6*1.l+B7	38	=F6*l.04	=G6*1.1+F7	48	=J6*1.04	=K6*1.1+J7
26	=B7*104	=C7*1.l+B8	39	=F7*1.04	=G7*l.1+F8	49	=J7*l.04	=K7*1.l+J8
27	=B8*1.04	=C8*1.1+B9	40	=F8*1.04	=G8*1.1+F9	50	=J8*1.04	=K8*1.1.J9
26	=B9*1.04	=C9*1.1+B10	41	=F9*l.04	=G9*l.1+Fl0	51	=J9*1.04	=K9*1.1+J10
29	=B10*1.04	=C10*1.1+B11	42	=F10*1.04	=G10*1.1+F1l	52	=J10*I.04	=Kl0*l.l+J11
30	=B11*1.04	=C11*1.l+B12	43	=F11*l.04	=G11*1.l+F12	53	=J11*1.04	=K11*1.1+J12
31	=B12*1.04	=C12*l.1+B13	44	=F12*1.04	=G12*1.1+F13	54	=J12*1.04	=K12*1.1+J13
32	=B13*1.04	=C13*1.1+B14	45	=F13*1.04	=G13*I.1+F14	55	=J13*l.04	=K13*1.l+J14
33	=B14*1.04	=C14*l.l+Bl5	46	=F14*1.04	=G14*l.l+Fl5	56	=J14*1.04	=K14*1.1+J15
34	=B15*1.04	=C15*1.1+BI6	47	=F15*1.04	=G15*1.l+F16	57	=Jl5*l.04	=Kl5*1.l.J16
35	=B16*1.04	=C16*1.1+B17	48	=F16*l.04	=G16*l.1+F17	58	=J16*l.04	=K16*1.1+J17
35	=Bl7*l.04	=Cl7*1.l+B18	49	=F17*l.04	=G17*1.l+F18	59	=Jl7*1.04	=K17*1.l+J18
37	=B16*1.04	=Cl8*l.1+B19	50	=F18*l.04	=Gl8*1.1+F19	60	=J18*l.04	=K18*1.1+.J19
38	=B19*1.04	=C19*1.1+B20	51	=F19*l.04	=G19*1.1+F20	61	=J19*l.04	=K19*1.l+J20
39	=B20*1.04	=C20*1.1+B21	52	=F20*1.04	=G20*1.l+F21	62	=J20*1.04	=K20*1.1+J21
40	=B21*1.04	=C21*1.l+B22	53	=F21*1.04	=G21*1.l+F22	63	=J21*l.04	=K21*1.l+J22
41	=B22*1.04	=C22*l.1+B73	54	=F22*1.04	=G22*1.1+F23	64	=J22*1.04	=K22*1.l+J23
42	=B23*1.04	=C23*l.l+B24	55	=F23*1.04	=G23*l.l+F24		=SUM(J4:J23)	
43	=B24*1.04	=C24*1.1+B25	56	=F24*1.04	=G24*1.I+F25			
44	=B25*1.04	=C25*1.1+B26	57	=F25*1.04	=G25*11+F25			
45	=B26*1.04	=C26*1.1+B27	58	=F26*l.04	=G26*1.l+F27			
46	=B27*1.04	=C27*1.1+B28	59	=F27*1.04	=G27*l.1+F26			
47	=B28*1.04	=C28*l.l+B29	60	=F28*1.04	=G28*1.l+F29			
46	=B29*1.04	=C29*l.l+B30	61	=F29*l.04	=G29*1.1+F30			
49	=B30*1.04	=C30*1.1+B31	62	=F30*1.04	=G30*1.l+F3l			
50	=B31*1.04	=C31*1.1+B32	63	=F31*1.04	=G31*1.1+F32			
51	=B32*1.04	=C32*1.1+B33	64	=F32*1.04	=G32*1.1+F33			
52	=B33*1.04	=C33*1.l+B34		SUM(F4133)				
53	=B34*1.04	=C34*1.l+B35						
54	=B35*1.04	=C35*1.1+B36						
55	=B36*1.04	=C36*l.1+B37						
55	=B37*1.04	=C37*l.1+B38						
57	=B38*1.04	=C38*1.1+B39						
56	=B39*1.04	=C39*1.1+B40						
59	=B40*1.04	=C40*1.1+B41						
50	=B41*1.04	=C41*1.1+B42						
61	=B42*1.04	=C42*1.1+B43						
62	=B43*1.04	=C43*1.1+B44						
63	=B44*1.04	=C44*l.l+B45						
64	=B45*1.04	=C45*1.1+B46						
	=SUM(B4:B46)							

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