PFIN 6th edition Billingsley Solutions Manual

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Chapter 2

Using Financial Statements and Budgets

Chapter Outline

Learning Objectives

- **LO1 Understand the relationship between financial plans and statements.**
- **LO2 Prepare a personal balance sheet.**
- **LO3 Generate a personal income and expense statement.**
- **LO4 Develop a good record-keeping system and use ratios to evaluate personal financial statements.**
- **LO5 Construct a cash budget and use it to monitor and control spending.**
- **LO6 Apply time value of money concepts to put a monetary value on financial goals.**

I. Mapping Out Your Financial Future

- A. The Role of Financial Statements in Financial Planning
- B. Exhibit 2.1 The Interlocking Network of Financial Plans and Statements

II. The Balance Sheet: How Much Are You Worth Today?

- A. Assets: The Things You Own
- B. Liabilities: The Money You Owe
- C. Net Worth: A Measure of Your Financial Worth – Assets - Liabilities
- D. Balance Sheet Format and Preparation [Worksheet 2.1]
- E. A Balance Sheet for Silas and Emily Nelson

III. The Income and Expense Statement: What We Earn and Where It Goes

- A. Income: Cash In
- B. Expenses: Cash Out [See Note about Credit Card Purchases below]
- C. Cash Surplus (or Deficit) [Exhibit 2.3 How We Spend Our Income]
- D. Preparing the Income and Expense Statement [Worksheet 2.2]
- E. An Income and Expense Statement for Silas and Emily Nelson

IV. Using Your Personal Financial Statements

- A. Keeping Good Records
  - 1. Managing Your Financial Records
  - 2. Excel Used to Create an Electronic Check Register
- B. Tracking Financial Progress: Ratio Analysis [Exhibit 2.4]
  - 1. Balance Sheet Ratios
  - 2. Income and Expense Statement Ratios

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V. Cash In and Cash Out: Preparing and Using Budgets
- A. The Budgeting Process
  - 1. Estimating Income
  - 2. Estimating Expenses
  - 3. Finalizing the Cash Budget [See Worksheet 2.1]
- B. Dealing with Deficits
- C. A Cash Budget for Silas and Emily Nelson
- D. Using Your Budgets

VI. The Time Value of Money: Putting a Dollar Value on Financial Goals
- A. Future Value
  - 1. Future Value of a Single Amount
  - 2. Future Value of an Annuity
- B. Present Value
  - 1. Present Value of a Single Amount
  - 2. Present Value of an Annuity
  - 3. Other Applications of Present Value

Note about Credit Card Purchases

Credit card purchases are a problem for cash basis statements. Expenses are defined to be "money spent on living expenses and to pay taxes, purchase assets, or repay debt." All of these examples of cash outlays may be paid for with a credit card, which is a liability that results in a cash outlay in a future period [year or month.] Many, if not most people treat a credit card as a substitute for cash. They pay the entire credit card balance due when the statement is received thereby incurring no interest cost. In these cases, the cash outlay is only one month after the purchase. If a longer period is required to pay off the credit card, the best advice is to get an installment loan which has a lower interest rate than credit cards. Most accounting software treat credit card purchases as an expense and a liability. The actual cash outlay occurs when the liability is paid. In the solutions to problems included in this text, a credit card purchase is treated as an expense of the period even though the cash outlay to pay the credit card debt occurs in a future period. In preparing a cash budget, the cash outlay is recorded in period the credit card debt is expected to be paid.

Major Topics

We can achieve greater wealth and financial security through the systematic development and implementation of well-defined financial plans and strategies. Certain life situations require special consideration in our financial planning. Financial planners can help us attain our financial goals, but should be chosen with care. Personal financial statements work together to help us monitor and control our finances in order that we may attain our future financial goals by revealing our current situation, showing us how we used our money over the past time period, and providing a plan for expected future expenses. Time value of money calculations allow us to put a dollar value on these future financial goals and thereby plan more effectively. The major topics covered in this chapter include:

1. The importance of financial statements in the creation and evaluation of financial plans.

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2. Preparing and using the personal balance sheet to assess your current financial situation.
3. The concept of solvency and personal net worth.
4. Preparing and using the personal income and expense statement to measure your financial performance over a given time period.
5. The importance of keeping and organizing your records.
6. The use of financial ratios to track financial progress.
7. Developing a personal budget and using it to monitor and control progress toward future financial goals.
8. How to deal with cash deficits.
9. The use of time value of money concepts in putting a dollar value on financial goals.

These topics are also summarized in Study Tools 2, a chapter review card, found at the end of this textbook.

Key Concepts

Personal financial statements play an extremely important role in the financial planning process. They can help in both *setting goals* and in *monitoring progress toward goal achievement* to determine whether one is "on track." Budgeting and financial planning guide future outlays. As such, they require projections of future needs, desires, and costs. Setting up a specific set of forecasts is the basis for future success. The following phrases represent the key concepts discussed in the chapter.

1. Personal financial statements
2. Balance sheet equation
3. Types of assets, including liquid assets, investments, and personal and real property
4. Fair market value
5. Liabilities, including current liabilities, open account credit obligations, and long-term liabilities
6. Net worth and equity
7. Insolvency
8. Income
9. Expenses, including fixed and variable expenses
10. Cash basis
11. Cash surplus or deficit
12. Record keeping
13. Liquidity, solvency, savings, and debt service ratios
14. Ratio analysis of financial statements
15. Cash budgets
16. Estimating income
17. Estimating expenses
18. Monitoring and controlling actual expenses
19. Time value of money concepts and calculations
20. Income and expense statement
21. Budget control schedule
22. Future value
23. Compounding

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24. Annuity
25. Present value
26. Discounting

Financial Planning Exercises

The following are solutions to problems at the end of the PFIN6 chapter 2.

1. Preparing financial statements: ***Daniel Hernandez is preparing his balance sheet and income and expense statement for the year ending December 31, 2017. He is having difficulty classifying six items and asks for your help. Which, if any, of the following transactions are assets, liabilities, income, or expense items?***

a. Daniel rents a house for $1,350 a month.

b. On June 21, 2017 Daniel bought diamond earrings for his wife and charged them using his MasterCard. The earrings cost $900, but he hasn't yet received the bill.

c. Daniel borrowed $3,500 from his parents last fall, but so far, he has made no payments to them.

d. Daniel makes monthly payments of $225 on an installment loan; about half of it is interest, and the balance is repayment of principal. He has 20 payments left, totaling $4,500.

e. Daniel paid $3,800 in taxes during the year and is due a tax refund of $650, which he hasn't yet received.

f. Daniel invested $2,300 in some common stock.

g. Daniel's Aunt Rose gave him a birthday gift of $300.

In this exercise, we assume that the individual uses the cash basis of accounting rather than the accrual basis for reporting on the financial statements.

a. Rent paid is listed as an expense. For the year, his rent expense would be $16,200 ($1,350 x 12) unless he has rent due, the amount of which would show up as a current liability on his balance sheet.

b. The earrings should be shown on the income statement as an expense—gifts. Although the earrings have not been paid for, credit card purchases are treated as expenses—the credit card is a substitute for cash. The $900 debt outstanding is listed as a current liability on the balance sheet.

c. Since no loan payments were made during the period, a corresponding expense would not appear, but the obligation to repay the $3,500 would be shown as a liability on the balance sheet. However since he is "borrowing" from his parents, this may not be a

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liability, rather a gift from his parents. If the parents expect the amount to be repaid it is a loan; otherwise, it is a gift. Regardless, it will increase cash and increase either liability or equity, depending upon whether it is a loan or a gift.

d. Assuming he made 12 payments during the year, Daniel would list loan payments as an expense of $2,700. Whether the expense is principle or interest is of no interest to Daniel; he has to pay the $2,700. If the loan cannot be prepaid [that is the principle may not be paid before it is due], the remaining liability is $4,500. If the loan can be prepaid then of the 20 remaining payments, only about half are for principal. Therefore, on the balance sheet he should show the unpaid principal of about $2,250 (20 x $225/2) as a liability. The balance of the future payments is interest not yet due and therefore should not appear on the balance sheet. If the loan was used to purchase something of value, he would list the fair market value of the item as an asset on his balance sheet.

e. The $3,800 of taxes paid should appear as an expense on the income and expense statement for the period, but because the tax refund was not received during the year it would not be included as income on the statement.

f. The investment in common stock would appear on balance sheet as a reduction in cash (an asset) and an increase in "investments" (an asset) at the current fair market value of the stock.

g. Daniel's Aunt June gave him $300. The cash on the balance sheet will increase by $300 and the equity or net worth will also increase by $300. Aunt June is investing in Daniel.

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2. **Preparing personal balance sheet. Use Worksheet 2.1.** Ella Campbell's banker has asked her to submit a personal balance sheet as of June 30, 2017, in support of an application for a $6,000 home improvement loan. She comes to you for help in preparing it. So far, she has made the following list of her assets and liabilities as of June 30, 2017:

Item	Asset/Liability	Sub-total
Cash on hand	$ 70	
Balance in checking account	180	
Balance in money market deposit account with Southwest Savings	650	900
Bills outstanding: Telephone	$ 20	
Electricity	70	
Charge account balance	190	
Visa	180	
MasterCard	220	
Taxes	400	
Insurance	220	1,300
Condo and property		68,000
Condo mortgage loan		52,000
Automobile: 2013 Honda Civic		12,380
Installment loan balances: Auto loans	3,000	
Furniture loan	500	3,500
Personal property: Furniture 1,050	1,050	
Clothing	900	1,950
Investments: U.S. government savings bonds	500	
Stock of Delta Corp.	3,000	3,500

From the data given, prepare Ella Campbell's balance sheet, dated June 30, 2017 (follow the balance sheet form shown in Worksheet 2.1). Then evaluate her balance sheet relative to the following factors: (a) solvency, (b) liquidity, and (c) equity in her dominant asset.

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BALANCE SHEET						
Name(s) Ella Campbell			Date June 30, 2017			
ASSETS			LIABILITIES			
Liquid Assets			**Current Liabilities**			
Cash on hand	$ 70.00		Utilities	$ 90.00		
In checking	180.00		Rent			
Savings accounts	650.00		Insurance premiums	220.00		
Money market funds and deposits			Taxes	400.00		
			Medical/dental bills			
Certificates of deposit (<1 yr. to maturity)			Repair bills			
Total Liquid Assets		**$ 900.00**	Bank credit card balances	400.00		
Investments			Dept. store credit card balances	190.00		
Stocks	$ 3,000.00		Travel and entertainment card balances			
Bonds	500.00		Gas and other credit card balances			
Certificates of deposit (>1 yr. to maturity)			Bank line of credit balances			
Mutual funds			Other current liabilities			
Real estate			**Total Current Liabilities**			**$ 1,300.00**
Retirement funds, IRA			**Long-Term Liabilities**			
Other			Primary residence mortgage	$ 52,000.00		
Total Investments		**$ 3,500.00**				
Real Property			Second home mortgage			
Primary residence	$ 68,000.00		Real estate investment mortgage			
Second home						
Other			Auto loans	3,000.00		
Total Real Property		**$ 68,000.00**	Appliance/furniture loans	500.00		
Personal Property			Home improvement loans			
Auto(s): 2013 Honda Civic	$ 12,380.00		Single-payment loans			
Auto(s):			Education loans			
Recreational vehicles						
Household furnishing	1,050.00		Margin loans			
Jewelry and artwork			Other long-term loans			
Other	900.00		**Total Long-Term Liabilities**			**$ 55,500.00**
Other					**(II) Total Liabilities**	**$ 56,800.00**
Total Personal Property		**$ 14,330.00**			**Net Worth [(I) - (II)]**	**$ 29,930.00**
	(I)Total Assets	**$ 86,730.00**			**Total Liabilities and Net Worth**	**$ 86,730.00**

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a. *Solvency:* This term refers to having a positive net worth. The calculation for her solvency ratio is as follows:

$$\text{Solvency Ratio} = \frac{\text{Total Net Worth}}{\text{Total Assets}} = \frac{\$29{,}930}{\$86{,}730} = 34.5\%$$

This indicates that Leslie could withstand about a 34% decline in the market value of her assets before she would be insolvent. Although this is not too low a value, some thought might be given to increasing her net worth.

b. *Liquidity:* A simple analysis of Leslie's balance sheet reveals that she's *not very liquid.* In comparing current liquid assets ($900) with current bills outstanding ($1,300), it is obvious that she cannot cover her bills and is, in fact, $400 short (i.e., $1,300 current debt – $900 current assets). Her liquidity ratio is:

$$\text{Liquidity ratio} = \frac{\text{Liquid Assets}}{\text{Total Current Debt}} = \frac{\$\ 900}{\$1{,}300} = 69.2\%$$

This means she can cover only about 69% of her current debt with her liquid assets. If we assume that her installment loan payments for the year are about $2,000 (half the auto loan balance and all of the furniture loan balance) and add them to the bills outstanding, the liquidity ratio at this level of liquid assets is:

$$\text{Liquidity ratio} = \frac{\text{Liquid assets}}{\text{Total Current Debts}} = \frac{\$\ 900}{\$3{,}300} = 27.3\%$$

This indicates that should her income be curtailed, she could cover only about 27% of her existing one-year debt obligations with her liquid assets—and this does *not* include her mortgage payment! This is clearly not a favorable liquidity position.

c. *Equity in her Dominant Asset:* Her dominant asset is her condo and property, which is currently valued at $68,000. Since the loan outstanding on this asset is $52,000, the equity is $16,000 (i.e., $68,000 – $52,000). This amount indicates about a 24% equity interest (i.e., $16,000/$68,000) in the market value of her real estate. This appears to be a favorable equity position.

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3. Preparing personal income and expense statement. Use Worksheet 2.2. ***Ivy and Jack Davis are about to construct their income and expense statement for the year ending December 31, 2017. Ivy works full time while Jack is finishing up graduate school. They have put together the following income and expense information for 2017:***

Ivy's salary $47,000
Reimbursement for travel expenses 1,950
Interest on:
Savings account 110
Bonds of Gamma Corporation 70
Groceries 4,150
Rent 9,600
Utilities 960
Gas and auto expenses 650
Jack's tuition, books, and supplies 3,300
Books, magazines, and periodicals 280
Clothing and other miscellaneous expenses 2,700
Cost of photographic equipment purchased with charge card 2,200
Amount paid this year on photographic equipment 1,600
Ivy's travel expenses 1,950
Purchase of a used car (cost) 9,750
Outstanding loan balance on car 7,300
Purchase of bonds in Gamma Corporation 4,900

Using the information provided, prepare an income and expense statement for the Davis' for the year ending
December 31, 2017 (follow the form shown in Worksheet 2.2).

Comments on Problem:

1. Reimbursement of travel is not income nor is the travel expenses an expense. If Ivy's expenses had exceeded the reimbursement, the excess expenses would be expensed. Similarly, if the reimbursement exceeded the expenses, the excess would be income.
2. The photographic equipment was purchased with a credit card with a cost of $2,200. Of this amount, $1,600 has been paid leaving a balance of $600. As noted above [Note on Credit Card Purchases] the entire purchase amount is considered an expense. While only $1,600 has been paid, the purchase was $2,200 and that is the amount that is useful to Ivy and Jack. On the balance sheet, a Balance on Credit Card Due of $600 would be shown. Paying off a liability in the next year that is associated with an item previously expensed [the $600 here] is not shown as an expense again. It will be an item on a cash budget since the $600 is a cash outlay, but it is not an expense.
3. The purchase of the car is a long term asset with an installment loan attached. Thus, the car is recorded as an asset and the loan a liability. The related expenses shown on the income statement is the amount paid on the loan in the current year [cost $9,750 – year end balance $7,300 = $2,450 the amount of expense for this year.] Most likely there is some additional amount of interest that was paid, but the problem does not give that information. This interest would be an expense.

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INCOME AND EXPENSE STATEMENT			
Name(s)	Ivy and Jack Davis		
For the	Year	Ended	December 31, 2017
Income			
Wages and salaries	Name: Ivy's salary	$	47,000.00
	Name:		
Self-employment income			
Bonuses and commissions			
Investment income	Interest received		180.00
	Dividends received		
	Rents received		
	Sale of securities		
	Other		
Pensions and annuities			
Other income			
	(I) Total Income	**$**	**47,180.00**
Expenses			
Housing	Rent/mortgage payment (include insurance and taxes, if applicable)	$	9,600.00
	Repairs, maintenance, improvements		
Utilities	Gas, electric, water		960.00
	Phone		
	Cable TV and other		
Food	Groceries		4,150.00
	Dining out		
Transportation	Auto loan payments		2,450.00
	License plates, fees, etc.		
	Gas, oil, repairs, tires, maintenance		650.00
Medical	Health, major medical, disability insurance (payroll deductions or not provided by employer)		
	Doctor, dentist, hospital, medicines		
Clothing	Clothes, shoes, and accessories		2,700.00
Insurance	Homeowner's (if not covered by mortgage payment)		
	Life (not provided by employer)		
	Auto		
Taxes	Income and social security		
	Property (if not included in mortgage)		
Appliances, furniture, and other major purchases	Loan payments		
	Purchases and repairs		2,200.00
Personal care	Laundry, cosmetics, hair care		
Recreation and entertainment	Vacations		
	Other recreation and entertainment		280.00
Other items	Jack's tuition, books, supplies		3,300.00
	(II) Total Expenses	**$**	**26,290.00**
	CASH SURPLUS (OR DEFICIT) [(I)-(II)]	**$**	**20,890.00**

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4. Preparing cash budgets: ***Lucas and Emma Mendoza are preparing their 2018 cash budget. Help the Mendozas reconcile the following differences, giving reasons to support your answers.***

a. Their only source of income is Lucas' salary, which amounts to $5,000 a month before taxes. Emma wants to show the $5,000 as their monthly income, whereas Emma argues that his take-home pay of $3,917 is the correct value to show.

b. Emma wants to make a provision for fun money, an idea that Lucas doesn't understand. He asks, "Why do we need fun money when everything is provided for in the budget?"

a. The before tax salary [gross salary] is the amount that should be reported in the cash budget. Also the tax withheld [$5,000 – 3,917 = 1,083] should be shown as a cash outlay. If only the net salary is shown, important data will be lost. Also, after the tax return is filed in the following year, there may be an amount due or a refund. If only the net amount is shown, the correct tax amount will not be know.

b. By having an allowance for "fun money," the Mendozas have specifically set aside a certain portion of their income for a little self-indulgence. This will serve three basic purposes: (1) it will give a little financial independence to each member of the family; (2) to a certain extent it allows for a little impulse buying which might further the enjoyment of life [however, it allows for this luxury under a budget control and diminishes the possibility of it occurring with an allocation from another account]; and (3) it generally promotes a higher quality of life. Thus, the inclusion of "fun money" is probably justified.

PLEASE NOTE: The following problems deal with time value of money, and solutions using both the tables and the financial calculator will be presented. The factors taken from the tables are as follows: future value–Appendix A; future value annuity–Appendix B; present value–Appendix C; present value annuity–Appendix D. If using the financial calculator, set on *End Mode* and *1 Payment/Year*. The +/- indicates the key to change the sign of the entry, in these instances from positive to negative. This keystroke is required on some financial calculators in order to make the programmed equation work. Other calculators require that a "Compute" key be pressed to attain the answer.

5. Calculating present and future values: ***Use future or present value techniques to solve the following problems.***

a. If you inherited $45,000 today and invested all of it in a security that paid a 7 percent rate of return, how much would you have in 25 years?

b. If the average new home costs $275,000 today, how much will it cost in 10 years if the price increases by 5 percent each year?

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c. You think that in 15 years, it will cost $214,000 to provide your child with a 4-year college education. Will you have enough if you take $75,000 today and invest it for the next 15 years at 4 percent?

d. If you can earn 4 percent, how much will you have to save each year if you want to retire in 35 years with $1 million?

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a. At the end of 25 years, your $45,000 investment would grow to $244,215 at a 7% return.

FV	=	PV x FV factor $_{7\%, 25 \text{ yrs.}}$	45000	+/-	PV
	=	$45,000 x 5.427	7		I
	=	$244,215	25		N
			FV		$244,234.47

b. At the end of 10 years the average new home, which costs $275,000 today, will cost $447,975 if prices go up at 5% per year.

FV	=	PV x FV factor $_{5\%, 10 \text{ yrs.}}$	275000	+/-	PV
	=	$275,000 x 1.629	5		I
	=	$447,975	10		N
			FV		$447,946.02

c. No, you will have approximately $78,925 less than your estimate of $214,000 (or 214,000 - $135,075).

FV	=	PV x FV factor $_{4\%, 15 \text{ yrs.}}$	75000	+/-	PV
	=	$75,000 x 1.801	4		I
	=	$135,075	15		N
			FV		$135,070.76

You will need to deposit $10,687.18 at the end of each year for 15 years in order to reach the $214,000 goal.

PMT	=	FV ÷ FVA factor $_{4\%, 15 \text{ yrs.}}$	214000	+/-	FV
	=	$214,000 ÷ 20.024	4		I
	=	$10,687.18	15		N
			PMT		$10,687.40

d. You will need to invest $13,577.55 at the end of each year at a rate of 4% for the next 35 years in order to retire with $1 million.

PMT	=	FV ÷ FVA factor $_{4\%, 35 \text{ yrs.}}$	1000000	+/-	FV
	=	$1,000,000 ÷ 73.651	4		I
	=	$13,577.55	35		N
			PMT		$13,577.32

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6. Funding a retirement goal. ***Owen Freeman wishes to have $800,000 in a retirement fund 20 years from now. He can create the retirement fund by making a single lump-sum deposit today.***

a. If upon retirement in 20 years, Owen plans to invest $800,000 in a fund that earns 4 percent, what is the maximum annual withdrawal he can make over the following 15 years?

b. How much would Owen need to have on deposit at retirement in order to withdraw $35,000 annually over the 15 years if the retirement fund earns 4 percent?

c. To achieve his annual withdrawal goal of $35,000 calculated in part b, how much more than the amount calculated in part a must Owen deposit today in an investment earning 4 percent annual interest

a. Jamal can withdraw $71,955.39 at the end of every year for 15 years.

PV	=	PMT x PVA factor $_{4\%, 15 \text{ yrs.}}$	800000	+/-	PV
PMT	=	PV ÷ PVA factor $_{4\%, 15 \text{ yrs.}}$	4		I
	=	$800,000 ÷ 11.118	15		N
	=	$71,955.39	PMT		$71,952.88

b. To withdraw $35,000 at the end of every year for 15 years, Jamal would need a retirement fund of $389,130.

PV	=	PMT x PVA factor $_{4\%, 15 \text{ yrs.}}$	35000	+/-	PMT
	=	$35,000 x 11.118	4		I
	=	$389,130	15		N
			PV		$389,143.56

c. Jamal will not need to invest any additional funds because the original investment of $800,000 will meet his retirement needs.

Answers to Test Yourself Questions

The following are solutions to "Test Yourself Questions" found on the student website, PFIN 6 Online, at www.cengagebrain.com. You can find the questions on the instructor site as well.

2-1 What are the two types of personal financial statements? What is a budget, and how does it differ from personal financial statements? What role do these reports play in a financial plan?

Personal financial statements provide important information needed in the personal financial planning process. The balance sheet describes your financial condition [that is what assets and liabilities you have] at one point in time. The income and expense statement measures financial

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performance [cash surplus or deficit] over a given time period typically monthly or annually. Budgets help you plan your future spending. The budget is a statement of the future income or expenses that will result from your financial plan. By comparing the actual income and expenses to the budget you can see when your plan needs to be modified. Together these statements give you information needed for your financial planning process.

2-2 Describe the balance sheet, its components, and how you would use it in personal financial planning. Differentiate between investments and real and personal property.

The *balance sheet* summarizes your financial position by showing your assets (what you own listed at fair market value), your liabilities (what you owe), and your net worth (the difference between assets and liabilities) at a given point in time. With a balance sheet, you know whether your assets are greater than your liabilities, and by comparing balance sheets for different time periods, you can see whether your net worth is growing.
Investments are intangible assets that have market value [such as stock] and you hold in hpes of future increases in value and future income. *Real property* is an asset that is affixed to the ground, example is a house. *Personal property* is tangible property that is not real property, example is a car or furniture.

2-3 What is the balance sheet equation? Explain when a family may be viewed as technically insolvent.

The *balance sheet equation* is:

Net Worth = Total Assets - Total Liabilities

A family is *technically insolvent* when their net worth is less than zero. This indicates that the amount of their total liabilities is greater than the fair market value of their total assets.

2-4 Explain two ways in which net worth could increase (or decrease) from one period to the next.

> There are basically two ways to achieve an *increase in net worth*. First, one could prepare a budget for the pending period to specifically provide for an increase in net worth by acquiring more assets and/or paying down debts. This is accomplished by planning and requires strict control of income and expenses. A second approach would be to forecast expected increases in the market value of certain assets—primarily investment and tangible property assets. If the market value of the assets increased as expected and liabilities remained constant or decreased, an increase in net worth would result. (Note: Decreases in net worth would result from the opposite strategies/occurrences.) Of course that is also the old fashion way, you inherit wealth.

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2-5 What is an income and expense statement? What role does it serve in personal financial planning?

The *income and expense statement* captures the result of financial activities that you hoped would increase your wealth summarized for a month or a year. In personal financial planning, the statement permits comparison of actual results to the budgeted values to help you evaluate your financial plan.

2-6 Explain what cash basis means in this statement: "An income and expense statement should be prepared on a cash basis." How and where are credit purchases shown when statements are prepared on a cash basis?

The cash basis only records income that is received in cash or expenses that are paid in cash during the period. It ignores any amount that you are due [receivables] or that you will have to pay in the future [liabilities]. Payments on liabilities should be divided into payment of interest and payments on principle, but both are listed as expenses on a cash statement. Obviously the cash statement does not give a complete picture of a person income or expenses, but since most individuals do not have receivables and their liabilities are managed with monthly payments, the cash statement gives good information for financial planning.

2-7 Distinguish between fixed and variable expenses, and give examples of each.

Fixed expenses are contractual, predetermined expenses that are made each period, such as rent, mortgage and loan payments, or insurance premiums. *Variable* expenses change each period. These include food, utilities, charge card bills, and entertainment.

2-8 Is it possible to have a cash deficit on an income and expense statement? If so, how?

Yes, a *cash deficit* appears on an cash basis income and expense statement whenever the period's expenses exceed income. Deficit spending is made possible by using up an asset, such as taking money out of savings, selling an asset such as an investment, or incurring more debt, such as charging a purchase on a credit card.

2-9 How can accurate records and control procedures be used to ensure the effectiveness of the personal financial planning process?

Before you can set realistic goals, develop your financial plans, or effectively manage your money, you must take stock of your current financial situation. Without accurate records, you do not have the needed information to make your financial decisions.

2-10 Describe some of the areas or items you would consider when evaluating your balance sheet and income and expense statement. Cite several ratios that could help in this effort.

Ratios are used to relate items from the financial statements. These ratios provide useful information for specific decisions. From the Balance sheet:
Current Ratio: Current Assets divided by Current Liabilities, useful for short term credit decisions

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Solvency ratio: Total net worth divided by total assets; measures the degree of exposure to insolvency

Liquidity ratio: Total liquid assets divided by total current debts; measures the ability to pay current debts.

From the Income Statement:
Savings ratio: Cash surplus divided by income after taxes, indicates the portion of income you chose to save

Debt service ratio: Total monthly loan payments divided by Monthly gross (before tax) income, provides a measure of the ability to pay debts promptly

Return on Equity: Cash Surplus (a measure of net income) divided by New Worth, provides a measure of how well you managed your wealth.

2-11 Describe the cash budget and its three parts. How does a budget deficit differ from a budget surplus?

A *cash budget* is a summary of estimated cash income and cash expenses for a specific time period, typically a year. The three parts of the cash budget include: the *income* section where all expected income is listed; the *expense* section where expected expenses are listed by category; and the surplus or deficit section where the cash surplus or deficit is determined both on a month-by-month basis and on a cumulative basis throughout the year. A *budget deficit* occurs when the planned expenses for a period exceed the anticipated income in that same period. A *budget surplus* occurs when the income for the period exceeds its planned expenses.

2-12 The Gonzales family has prepared their annual cash budget for 2016. They have divided it into 12 monthly budgets. Although only 1 monthly budget balances, they have managed to balance the overall budget for the year. What remedies are available to the Gonzales family for meeting the monthly budget deficits?

Monthly deficits may be handled by shifting expenses to a later month or income to an earlier month. If that is not possible, the Gonzales family may withdraw an amount from savings or borrow a short-term loan to get the months in balance. Another alternative is to increase income perhaps with a second job or move to a higher paying job.

2-13 Why is it important to analyze actual budget surpluses or deficits at the end of each month?

> By examining end-of-month budget balances, and the associated surpluses or deficits for all accounts, a person can initiate any required corrective actions to assure a balanced budget for the year. Surpluses are not problematic. Deficits normally require spending adjustments during subsequent months to bring the budget into balance by year end.

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2-14 Why is it important to use time value of money concepts in setting personal financial goals?

A dollar today and a dollar in the future will be able to purchase different amounts of goods and services, because if you have a dollar today, you can invest it and it will grow to more than a dollar in the future. At the same time, inflation works against the dollar, because rising prices erode its purchasing power. *Time value of money* concepts help us quantify these changes in dollar values so that we can plan the amount of money needed at certain points in time in order to fulfill our personal financial goals.

2-15 What is compounding?

Interest is earned over a given period of time. When interest is compounded, this given period of time is broken into segments, such as months. Interest is then calculated one segment at a time, with the interest earned in one segment added back to become part of the principal for the next time segment. Thus, in *compounding*, your money earns interest on interest.

2-16 When might you use future value? Present value? Give specific examples.

Future value calculations show how much an amount will grow over a given time period. Future value is used to evaluate investments and to determine how much to save each year to accumulate a given future amount, such as the down payment on a house or for a child's college education. *Present value* concepts, the value today of an amount that will be received in the future, help you calculate how much a future cash receipt will be worth today, analyze investments, and determine loan payments.

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Solutions to Online Bonus Personal Financial Planning Exercises

The following are solutions to "Bonus Personal Financial Planning Exercises" found on the student website, PFIN 6 Online, at www.cengagebrain.com. You can find these questions on the instructor site as well.

1. **Preparing Financial Statements: Chad Livingston is preparing his balance sheet and income and expense statement for the year ending June 30, 2016. He is having difficulty classifying six items and asks for your help. Which, if any, of the following transactions are assets, liabilities, income, or expense items?**

a. Chad rents a house for $1,350 a month.

The monthly rent is a monthly expense. The payment will reduce an asset, Cash.

b. On June 21, 2016, Chad bought diamond earrings for his wife and charged them using his MasterCard. The earrings cost $900, but he hasn't yet received the bill.

The purchase will result in a new asset, personal property for $900. Since he purchase using a credit card, his current liabilities also increase by $900.

c. Chad borrowed $3,500 from his parents last fall, but so far, he has made no payments to them.

Since no loan payments were made during the period, a corresponding expense would not appear. Whether or not the "loan" is a real loan or a gift from the parents is a question of fact to be determined. If real loan, the balance sheet will list a liability of $3,500. If a gift, net worth will increase by the amount of cash received.

d. Chad makes monthly payments of $225 on an installment loan; about half of it is interest, and the balance is repayment of principal. He has 20 payments left, totaling $4,500.

The income statement will show an expense: payment of loan $225 per month times 12 months, a total for the year of $2,700. When a balance sheet is prepared, the loan balance will be reduced by half of the 225 per month which represent payment of principal.

e. Chad paid $3,800 in taxes during the year and is due a tax refund of $650, which he hasn't yet received.

The payment of taxes is an expense recorded as paid, typically monthly or when paycheck is received. The refund is not recorded on the income statement until it is received. The receivable is not recorded on a cash basis balance sheet.

f. Chad invested $2,300 in some common stock.

The cash asset goes down and the asset investment goes up. The investment will appear on the balance sheet.

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2. **Projecting Financial Statements: Put yourself 10 years into the future. Construct a fairly detailed and realistic balance sheet and income and expense statement reflecting what you would like to achieve by that time.**

   While everyone's financial statements will differ based on their own expectation of the future, each should have similar elements such as: assets like a home, automobiles and investments; liabilities like a mortgage, an auto loan, and consumer debt; and a positive net worth. The statement of income and expense should reflect income from a job or business, investment income, and expenses for items such as home repair and operation, debt payments, savings, taxes, and insurance.

3. Preparing Personal Balance Sheet: ***Use Worksheet 2.1.***

This problem has been included in the text as problem 2 in Chapter 2. See solution above.

4. Preparing Income and Expense Statement: ***Use Worksheet 2.2.***

This problem has been included in the text as problem 3 in Chapter 2. See solution above.

5. Preparing Cash Budget: Richard and Elizabeth Walker are preparing their 2017 cash budget. Help the Walkers reconcile the following differences, giving reasons to support your answers.

This problem has been included in the text as problem 4 in Chapter 2. See solution above.

6. Identifying Missing Budget Items: Here is a portion of Chuck Schwartz's budget record for April 2016. Fill in the blanks in columns 5 and 6. Note the answers are included. They may be deleted if you wish to use in classroom.

Item (1)	Amount Budgeted (2)	Amount Spent (3)	Beginning Balance (4)	Monthly Surplus (Deficit) (5)	Cumulative Surplus (Deficit) (6)
Rent	$550	$575	$50	-$25	**$25**
Utilities	150	145	15	**5**	**20**
Food	510	475	-45	**35**	**-10**
Auto	75	95	-25	**-20**	**-45**
Recreation and Entertainment	100	110	-50	**-10**	**-60**

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7. *Use Worksheet 2.3.* Prepare a record of your income and expenses for the last 30 days; then prepare a personal cash budget for the next three months. (Use the format in Worksheet 2.3, but fill out only three months and the Total column.) Use the cash budget to control and regulate your expenses during the next month. Discuss the impact of the budget on your spending behavior, as well as any differences between your expected and actual spending patterns.

This question requires a personal response that will differ for each student. Therefore, a specific example has not been provided. However, the Critical Thinking cases below provide several examples of possible answers to this question; it is recommended that the cases be examined in conjunction with this question.

The question provides an effective means to involve the student in the budgeting process. Most students [as well as most people] are somewhat amazed when they find out how they have actually been spending their money. Before assigning this question, it is interesting to ask the students to estimate how they actually spend their money. A comparison of their estimates with the actual spending records typically reflects the unconscious manner in which they may be spending. Most students will find that the use of a budget to control and regulate expenses allows them to make more meaningful and satisfying expenses.

PLEASE NOTE: Problems 8 through 10 deal with time value of money, and solutions using both the tables and the financial calculator will be presented. The factors are taken from the tables as follows: future value–Appendix A; future value annuity–Appendix B; present value–Appendix C; present value annuity–Appendix D. If using the financial calculator, set on *End Mode* and *1 Payment/Year*. The +/- indicates the key to change the sign of the entry, in these instances from positive to negative. This keystroke is required on some financial calculators in order to make the programmed equation work. Other calculators require that a "Compute" key be pressed to attain the answer.

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8. Calculating present and future values: Use future or present value techniques to solve the following problems.

a. Starting with $15,000, how much will you have in 10 years if you can earn 6 percent on your money? If you can earn only 4 percent?

FV	=	PV x FV factor $_{6\%,\ 10\ yrs.}$	15000	+/-	PV
	=	$15,000 x 1.791	6		I
	=	$26,865	10		N
			FV		$26,862.72
FV	=	PV x FV factor 4%, 10 yrs.	15000	+/-	PV
	=	$15,000 x 1.480	4		I
	=	$22,200	10		N
			FV		$22,203.66

b. If you inherited $45,000 today and invested all of it in a security that paid a 7 percent rate of return, how much would you have in 25 years?

FV	=	PV x FV factor $_{7\%,\ 25\ yrs.}$	45000	+/-	PV
	=	$45,000 x 5.427	7		I
	=	$244,215	25		N
			FV		$244,234.47

c. If the average new home costs $275,000 today, how much will it cost in 10 years if the price increases by 5 percent each year?

FV	=	PV x FV factor $_{5\%,\ 10\ yrs.}$	275000	+/-	PV
	=	$275,000 x 1.629	5		I
	=	$447,975	10		N
			FV		$447,946.02

d. You think that in 15 years, it will cost $212,000 to provide your child with a 4-year college education. Will you have enough if you take $70,000 today and invest it for the next 15 years at 5 percent? If you start from scratch, how much will you have to save each year to have $212,000.

No, you will have $145,530, which is less than your $212,000 goal.

FV	=	PV x FV factor $_{5\%,\ 15\ yrs.}$	70000	+/-	PV
	=	$70,000 x 2.079	5		I
	=	$145,530	15		N
			FV		$145,524.97

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You will need to deposit $10,587.30 at the end of each year for 15 years In order to reach the $212,000 goal.

PMT	=	FV ÷ FVA factor $_{4\%,\ 15\ yrs.}$	212000	+/-	FV
	=	$212,000 ÷ 20.024	4		I
	=	$10,587.30	15		N
			PMT		$10,587.51

e. If you can earn 4 percent, how much will you have to save each year if you want to retire in 35 years with $1 million?

You will need to invest $13,577.55 at the end of each year at a rate of 4% for the next 35 years in order to retire with $1 million.

PMT	=	FV ÷ FVA factor $_{4\%,\ 35\ yrs.}$	1000000	+/-	FV
	=	$1,000,000 ÷ 73.651	4		I
	=	$13,577.55	35		N
			PMT		$13,577.32

f. You plan to have $750,000 in savings and investments when you retire at age 60. Assuming that you earn an average of 8 percent on this portfolio, what is the maximum annual withdrawal you can make over a 25-year period of retirement?

You will be able to withdraw $70,257.61 at the end of each year for 25 years if you retire with $750,000 invested at 8%.

PMT	=	PV ÷ PVA factor $_{8\%,\ 25\ yrs.}$	750000	+/-	PV
	=	$750,000 ÷ 10.675	8		I
	=	$70,257.61	25		N
			PMT		$65,927.99

9. Quantifying and Evaluating a Saving Goal: Over the past several years, Catherine Lee has been able to save regularly. As a result, she has $54,188 in savings and investments today. She wants to establish her own business in five years and feels she will need $100,000 to do so.

a. If she can earn 4 percent on her money, how much will her $54,188 in savings/investments be worth in five years? Will Catherine have the $100,000 she needs? If not, how much more money will she need?

If Catherine can earn 4% on her money, $54,188 will be worth about $65,947 in 5 years:

FV	=	PV x FV factor $_{4\%,\ 5\ yrs.}$	54188	+/-	PV
	=	$54,188 x 1.217	4		I
	=	$65,946.80	5		N
			FV		$65,927.99

No, she will fall short by about $34,053.

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b. Given your answer to part a, how much will Catherine have to save each year over the next five years to accumulate the additional money? Assume that she can earn interest at a rate of 4 percent.

b. Assuming that Catherine adds a payment to her savings at the end of each year for the next five years so that the fifth payment comes at the end of the time period, she would have to save $5,077.55 per year. This calculation is as follows:

FV	=	PMT x FVA factor $_{4\%,\ 5\ yrs.}$	34072	+/-	FV
PMT	=	FV ÷ FVA factor $_{4\%,5yrs.}$	4		I
	=	$34,053 ÷ 5.416	5		N
	=	$6,287.52	PMT		$6,290.62

c. If Catherine can afford to save only $4,000 a year, then given your answer to part a, will she have the $100,000 she needs to start her own business in five years?

If Catherine saves only $4,000 per year she would have an additional $21,664 for a total of $87,611 ($65,947 + $21,664) and will fall $12,389 short of her $100,000 goal.

FV	=	PMT x FVA factor $_{4\%,\ 5\ yrs.}$	4000	+/-	PMT
	=	$4,000 x 5.416	4		I
	=	$21,664	5		N
			FV		$21,665.29

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10. Funding a Retirement Goal: Chris Jones wishes to have $800,000 in a retirement fund 20 years from now. He can create the retirement fund by making a single lump-sum deposit today.
a. If he can earn 6 percent on his investments, how much must Chris deposit today to create the retirement fund? If he can earn only 4 percent on his investments? Compare and discuss the results of your calculations.

Note what a difference of 2% makes over the 20-year time period! You would have to initially invest about 46% more money to end up with the same future value [($364,800 – $249,600) ÷ $249,600].

PV	=	FV x PV factor $_{6\%, 20 \text{ yrs.}}$	800000	+/-	FV
	=	$800,000 x 0.312	6		I
	=	$249,600	20		N
			PV		$249,443.78

If Chris only earns 4%, he will need another $115,666 to meet his goal.

PV	=	FV x PV factor $_{4\%, 20 \text{ yrs.}}$	800000	+/-	FV
	=	$800,000 x 0.456	4		I
	=	$364,800	20		N
			PV		$365,109.56

b. If, upon retirement in 20 years, Chris plans to invest the $800,000 in a fund that earns 4 percent, what is the maximum annual withdrawal he can make over the following 15 years?

Chris can withdraw $71,955.39 at the end of every year for 15 years.

PV	=	PMT x PVA factor $_{4\%, 15 \text{ yrs.}}$	800000	+/-	PV
PMT	=	PV ÷ PVA factor $_{4\%, 15 \text{ yrs.}}$	4		I
	=	$800,000 ÷ 11.118	15		N
	=	$71,955.39	PMT		$71,952.88

b. How much would Chris need to have on deposit at retirement to annually withdraw $35,000 over the 15 years if the retirement fund earns 4 percent?

To withdraw $35,000 at the end of every year for 15 years, Chris would need a retirement fund of $389,130.

PV	=	PMT x PVA factor $_{4\%, 5 \text{ yrs.}}$	35000	+/-	PMT
	=	$35,000 x 11.118	4		I
	=	$389,130	15		N
			PV		$389,143.56

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d. To achieve his annual withdrawal goal of $35,000 calculated in part c, how much more than the amount calculated in part a must Chris deposit today in an investment earning 4 percent annual interest?

Chris will not need to invest any additional funds because the original investment will meet his retirement needs.

11. Funding a College Goal: Dan Weaver wants to set up a fund to pay for his daughter's education. In order to pay her expenses, he will need $23,000 in four years, $24,300 in five years, $26,000 in six years, and $28,000 in seven years. If he can put money into a fund that pays 4 percent interest, what lump-sum payment must Dan place in the fund today to meet his college funding goals?

Dan needs $81,459.60 today to fund college.

PV = FV x PV factor $_{4\%,\ 4\ yrs.}$
= $23,000 x 0.855
= $19,665

PV = FV x PV factor $_{4\%,\ 5\ yrs.}$
= $24,300 x 0.822
= $19,974.60

PV = FV x PV factor $_{4\%,\ 6\ yrs.}$
= $26,000 x 0.790
= $20,540

PV = FV x PV factor $_{4\%,\ 7\ yrs.}$
= $28,000 x 0.760
= $21,280

Add $19,665 + $19,974.60 + $20,540 + $21,280 = $81,459.60
Using a financial calculator, specifically a TI BAII+
CFO = 0
C01 = 0, F01 = 3
C02 = 23000, F02 = 1
C03 = 24300, F03 = 1
C04 = 26000, F04 = 1
C05 = 28000, F05 = 1
I = 4
CPT NPV = $81,459.21

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12. Calculating a Future Value of an Investment: Jessica Wright has always been interested in stocks. She has decided to invest $2,000 once every year into an equity mutual fund that is expected to produce a return of 6 percent a year for the foreseeable future. Jessica is really curious how much money she can reasonably expect her investment to be worth in 20 years. What would you tell her?

It should be noted, that you are calculating this amount using an expected rate of return. Should the return be higher any given years, the value will be more. Should the return be lower any given years, the value will be less.

FV	=	PMT x FVA factor $_{6\%,\ 20\ yrs.}$	2000	+/-	PMT
	=	$2,000 x 36.786	6		I
	=	$73,572	20		N
			FV		$73,571.18

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Solutions to Critical Thinking Cases

The following are solutions to "Critical Thinking Cases" found on the student website, PFIN 6 Online, at www.cengagebrain.com. You can find these questions on the instructor site as well.

2.1 The Becker's Version of Financial Planning

Terry and Evelyn Becker are a married couple in their mid-20s. Terry has a good start as an electrical engineer and Evelyn works as a sales representative. Since their marriage four years ago, Terry and Evelyn have been living comfortably. Their income has exceeded their expenses, and they have accumulated an enviable net worth. This includes $10,000 that they have built up in savings and investments. Because their income has always been more than enough for them to have the lifestyle they desire, the Beckers have done no financial planning.

Evelyn has just learned that she's two months pregnant. She's concerned about how they'll make ends meet if she quits work after their child is born. Each time she and Terry discuss the matter, he tells her not to worry because "we've always managed to pay our bills on time." Evelyn can't understand his attitude because her income will be completely eliminated. To convince Evelyn that there's no need for concern, Terry points out that their expenses last year, but for the common stock purchase, were about equal to his take-home pay. With an anticipated promotion and an expected 10 percent pay raise, his income next year should exceed this amount. Terry also points out that they can reduce luxuries (trips, recreation, and entertainment) and can always draw down their savings or sell some of their stock if they get in a bind. When Evelyn asks about the long-run implications for their finances, Terry says there will be "no problems" because his boss has assured him that he has a bright future with the engineering firm. Terry also emphasizes that Evelyn can go back to work in a few years if necessary.

Despite Terry's arguments, Evelyn feels that they should carefully examine their financial condition in order to do some serious planning. She has gathered the following financial information for the year ending December 31, 2016:

Salaries	**Take-home Pay**	**Gross Salary**
Terry	*$52,500*	*$76,000*
Evelyn	*29,200*	*42,000*

Item	**Amount**
Food	*$ 5,902*
Clothing	*2,300*
Mortgage payments, including property taxes of $1,400	*11,028*
Travel and entertainment card balances	*2,000*
Gas, electric, water expenses	*1,990*
Household furnishings	*4,500*
Telephone	*640*
Auto loan balance	*4,650*
Common stock investments	*7,500*
Bank credit card balances	*675*

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Federal income taxes	*22,472*
State income tax	*5,040*
Social security contributions	*9,027*
Credit card loan payments	*2,210*
Cash on hand	*85*
2012 Nissan Sentra	*10,500*
Medical expenses (unreimbursed)	*600*
Homeowner's insurance premiums paid	*1,300*
Checking account balance	*485*
Auto insurance premiums paid	*1,600*
Transportation	*2,800*
Cable television	*680*
Estimated value of home	*185,000*
Trip to Europe	*5,000*
Recreation and entertainment	*4,000*
Auto loan payments	*2,150*
Money market account balance	*2,500*
Purchase of common stock	*7,500*
Addition to money market account	*500*
Mortgage on home	*148,000*

Critical Thinking Questions

1. **Using this information and Worksheets 2.1 and 2.2, construct the Becker's balance sheet and income and expense statement for the year ending December 31, 2016.**

As discussed above, the $2,210 credit card payment is not recorded as an expense on the income statement. It is a payment of a liability and as such only impacts the balance sheet to reduce the unpaid liability. From the information provided, the balances listed on the balance sheet are after the $2,210 payment has been made.

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Critical Thinking 2-1 part 1							
Balance Sheet							
Names(s) Terry and Evelyn Becker				Date	31-Dec-16		
Assets				**Liabilities and Net Worth**			
Liquid Assets:				Current Libaiblities			
Cash on hand	$ 85.00			Utilities			
Cash in checking	485.00			Rent			
Savings accounts				Insurance premiums			
				Taxes			
Money market funds and deposits	2,500.00			Medical/dental bills			
Certificates of deposit <1 yr to maturity				Repair bills			
Total Liquid Assets		$ 3,070.00		Bank credit card balances		675.00	
				Department store credit card balances			
Investments							
				Travel and entertainment			
Stocks	$ 7,500.00			card balances		2,000.00	
				Gas and other credit			
Bonds				balances			
Certificates of deposit <1 yr to maturity				Bank line of credit balances			
				Other current liabilities			
Mutual funds							
Real estate					**Total Current Liabilities**		$ 2,675.00
Retirement funds, IRA				Long-term Liabilities			
Other				Primary residence mortgage		$148,000.00	
Total Investments		$ 7,500.00		Real estate investment			
Real Property				mortgage			
Primary residence	$185,000.00			Autos loans		4,650.00	
Second home				Applicance/furniture loans			
Other				Home improvement loans			
Total Real Property		$ 185,000.00		Single-payment loans			
Personal Property				Education loans			
Autos	$ 10,500.00			Margin loans used to purchse securities			
Autos				Other long-term liabilities			
Recreational vehicles							
Household furnishings	4,500.00				**Total Long-Term Liabilities**		$ 152,650.00
Jewelry and artwork							
Other					**Total Liabilities**		$ 155,325.00
Other							
Total Personal Property		$ 15,000.00			**Net Worth**		$ 55,245.00
Total Assets		$ 210,570.00			**Total Liabilities and Net Worth**		$ 210,570.00

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Critical Thinking 2.1-Part 1 Worksheet 2.2

INCOME AND EXPENSE STATEMENT			
Name(s)	Terry and Evelyn Becker		
For the	Year	Ended	December 31,2016
Income			
Wages and salaries	Name: Terry	$	76,000.00
	Name: Evelyn		42,000.00
	Name:		
Self-employment income			
Bonuses and commissions			
Investment income	Interest received		
	Dividends received		
	Rents received		
	Sale of securities		
	Other		
Pensions and annuities			
Other income			
	(I) Total Income	**$**	**118,000.00**
Expenses			
Housing	Rent/mortgage payment (include insurance and taxes, if applicable)	$	11,028.00
	Repairs, maintenance, improvements		
Utilities	Gas, electric, water		1,990.00
	Phone		640.00
	Cable TV and other		680.00
Food	Groceries		5,902.00
	Dining out		
Transportation	Auto loan payments		2,150.00
	License plates, fees, etc.		
	Gas, oil, repairs, tires, maintenance		2,800.00
Medical	Health, major medical, disability insurance (payroll deductions or not provided by employer)		
	Doctor, dentist, hospital, medicines		600.00
Clothing	Clothes, shoes, and accessories		2,300.00
Insurance	Homeowner's (if not covered by mortgage payment)		1,300.00
	Life (not provided by employer)		
	Auto		1,600.00
Taxes	Income and social security		36,539.00
	Property (if not included in mortgage)		
Appliances, furniture, and other major purchases	Loan payments		
	Purchases and repairs		
Personal care	Laundry, cosmetics, hair care		
Recreation and entertainment	Vacations		5,000.00
	Other recreation and entertainment		4,000.00
Other items	Purchase of stock		7,500.00
	Addition to money market account		500.00
	(II) Total Expenses	**$**	**84,529.00**
	CASH SURPLUS (OR DEFICIT) [(I)-(II)]	**$**	**33,471.00**

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2. Comment on the Becker's financial condition regarding (a) solvency, (b) liquidity, (c) savings, and (d) ability to pay debts promptly. If the Becker's continue to manage their finances as described, what do you expect the long-run consequences to be? Discuss.

a. Solvency Ratio: This ratio shows the degree of exposure to insolvency or how much "cushion" you have as protection against insolvency. The calculation for her solvency ratio is as follows:

$$\text{Solvency Ratio} = \frac{\text{Total Net Worth}}{\text{Total Assets}} = \frac{\$55{,}245}{\$210{,}570} = 26.24\%$$

A solvency ratio of 26% is on the low side. In their assets decline in value by 26%, the Beckers would be insolvent. Not good.

b. Liquidity Ratio:

$$\text{Liquidity ratio} = \frac{\text{Liquid Assets}}{\text{Total Current Debts}} = \frac{\$\ 3{,}070}{\$\ 2{,}675} = 1.15$$

The liquidity ratio indicates the Becker's ability to pay current debts. A ratio of greater than 1 is acceptable, but higher would be better.

c. Savings

$$\text{Savings ratio} = \frac{\text{Cash Surplus}}{\text{Income after tax}} = \frac{\$\ 33{,}471}{\$\ 81{,}700} = 40.97\%$$

The savings ratio indicates what the Becker's are doing with their income. Saving 41% is excellent [average for American families is about 8%]. This rate will overshadow the previous lackluster ratios.

d. Debt Service ratio $= \frac{\text{Monthly loan payments}}{\text{Monthly Gross Income}} = \frac{\$1{,}282}{\$9{,}833} = 13.04\%$

The level of income is substantially covering their loan payments, thus assuming continued income, their debts are secured.

The Becker's income is sufficient to build a better Balance Sheet in the future so that their net worth should continue to grow. This is a two wage earner family. If one loses their job, that lost income will soon create problems since their current balance sheet does not have the assets to maintain their net worth for the future without the continuing income.

3. Critically evaluate the Becker's approach to financial planning. Point out any fallacies in Terry's arguments, and be sure to mention (a) implications for the long term, as well as (b) the potential impact of inflation in general and specifically on their net worth. What procedures should they use to get their financial house in order? Be sure to discuss the role that long- and short-term financial plans and budgets might play.

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At this point, the key to their future is maintaining the two income family. Long term if both incomes continue, the Beckers will build their net worth. While inflation is a constant threat, the impact will be on their real property and large priced personal property. They have a car and a house, thus until those must be replaced, inflation will of less concerned to them. If inflation runs away, their jobs could be at risk and all bets are off for their future financial position. Preparing a budget will certainly help guide them to better understand where they are going to be at the end of the year.

With the birth of a child and Evelyn's quitting her job, the Becker's financial status will change. The information indicates that they are award of the potential changes and that they think their future financial status will be secured. Though things do change. The loss of one income will require greater planning and monitoring of their expenses.

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1. Rosa and Jose have liquid assets of $5,000 and other assets of $50,000. Their total liabilities equal $26,000. What is their net worth? (Show all work.)

ANS: Net worth = Total assets – Total liabilities.
Net worth = $55,000 − $26,000 = $29,000
REJ: Please see the section "The Balance Sheet: How Much Are You Worth Today?" for more information.

2. Construct a balance sheet using the following information. Be sure the format is correct. (Show all work.)

Cash on hand	$ 75
Bank credit card balance	1,200
Utility bill (overdue)	100
Auto loan balance	3,500
Mortgage	75,000
Primary residence	105,000
Jewelry	2,000
Stocks	17,500
Coin collection	2,500
2001 Toyota	7,500

ANS:

BALANCE SHEET

Assets			Liabilities		
Liquid Assets			Current Liabilities		
Cash on hand	$ 75		Bank credit card balance	$ 1,200	
Total Liquid Assets		$ 75	Utility bill (overdue)	100	
			Total Current Liabilities		$ 1,300
Investments					
Stocks	17,500		Long-Term Liabilities		
Total Investments		$ 17,500	Auto loan balance	3,500	
			Mortgage	75,000	
Real Property			Total Long-Term Liabilities		$ 78,500
Primary residence	105,000				
Total Real Property		$ 105,000	(II) Total Liabilities		$ 79,800
Personal Property			Net worth (I) - (II)		$ 54,775
Auto vehicles: 2001 Toyota	$ 7,500				
Jewellery	2,000		Total Liabilities and Net worth		$ 13,4575
Coin collection	2,500				
Total Personal Property		$ 12,000			
(I)Total Assets		$ 13,4575			

REJ: Please see the section "The Balance Sheet: How Much Are You Worth Today?" for more information.

3. Construct a balance sheet using the following information. Be sure the format is correct. (Show all work.)

Cash on hand	$ 500
Bank credit card balance	750
Taxes due	500
Utility bills (overdue)	120
Auto loan balance	6,000
Mortgage	45,000
Primary residence	60,000
Jewelry	1,200
Stocks	6,000
Coin collection	2,500
2001 Toyota	7,500
Auto payment	250

ANS:

BALANCE SHEET

Assets			Liabilities		
Liquid Assets			Current Liabilities		
Cash on hand	$ 500		Bank credit card balance	$ 750	
Total Liquid Assets		$ 500	Utility bill (overdue)	120	
			Taxes due	500	
Investments			Total Current Liabilities		$ 1,370
Stocks	6,000				
Total Investments		$ 6,000	Long-Term Liabilities		
			Auto loan balance	6,000	
Real Property			Mortgage	45,000	
Primary residence	60,000		Total Long-Term Liabilities		$ 51,000
Total Real Property		$ 60,000			
			(II) Total Liabilities		$ 52,370
Personal Property					
2001 Toyota	$ 7,500		Net worth (I) - (II)		$ 25,330
Jewellery	1,200				
Coin collection	2,500		Total Liabilities and Net worth		$ 77,700
Total Personal Property		$ 11,200			
(I)Total Assets		$ 77,700			

REJ: Please see the section "The Balance Sheet: How Much Are You Worth Today?" for more information

4. The Harts spend 30% of their disposable income on housing, 5% on medical expenses, 25% on food, 10% on clothing, 14% on loan repayments, and 8% on entertainment. How much of their disposable income is available for savings and investment? (Show all work.)

ANS: The disposable income is 100%. The total outlays equal 92%, which is calculated as 30% + 5% + 25% + 10% + 14% + 8%. Therefore, the total disposable income available for savings and investment = 100% – 92% = 8%. REJ: Please see the section "The Income and Expense Statement: What We Earn and Where It Goes" for more information.

5. Inflation is expected to be 4% in the coming year. If Mr. Gonza earned $37,000 this year, how much must he earn the following year to keep up with inflation and maintain a balance between his income and his increasing expenditures? (Show all work.)
ANS:
To keep up with an inflation of 4% in the coming year, Mr. Gonza must earn $38,480. This is calculated as $37,000 + (4% of $37,000). Alternatively, this can also be calculated as $37,000 × 1.04 = $38,480. REJ: Please see the section "Cash In and Cash Out: Preparing and Using Budgets" for more information.

6. Inflation is expected to be 3% in the coming year. If Mr. Gonza earned $45,000 this year, how much must he earn the following year to keep up with inflation and maintain a balance between his income and his increasing expenditures? (Show all work.)
ANS:
To keep up with an inflation of 3% in the coming year, Mr. Gonza must earn $46,350, which is calculated as $45,000 + (3 percent of $45,000). Alternatively, this can also be calculated as $45,000 × 1.03 = $46,350. REJ: Please see the section "Cash In and Cash Out: Preparing and Using Budgets" for more information.

7. Jamie wants to have $1,000,000 for her retirement in 25 years. How much should she save annually if she expects to earn 10% on her investments?
ANS: The future value that Jamie wants to have for her retirement equals $1,000,000. The time left for retirement is 25 years, and the interest rate is 10%. Therefore, the present value of periodic payments equals $10,168.07. REJ: Please see the section "Cash In and Cash Out: Preparing and Using Budgets" for more information.

8. The Hamptons want to have $1,750,000 for their retirement in 30 years. How much should they save annually if they expect to earn 8% on their investments?
ANS: The future value that the Hamptons want equals $1,750,000. The time left for retirement is 30 years, and the interest rate is 8%. Therefore, the present value of periodic payments equals $15,48.01. REJ: Please see the section " The Time Value of Money: Putting a Dollar Value on Financial Goals" for more information.

9. The Flemings will need $80,000 annually for 20 years during their retirement. How much will they need at retirement if they can earn a 4% rate of interest on their investment?
ANS: The value of periodic payments of the Flemings is $80,000 annually. The time period is 20 years, and the rate of return is 4%. Therefore, the present value of the annuity is $1,087,226. REJ: Please see the section "The Time Value of Money: Putting a Dollar Value on Financial Goals" for more information.

2.1 The Beckers' Version of Financial Planning

Terry and Evelyn Becker are a married couple in their mid-20s. Terry has a good start as an electrical engineer and Evelyn works as a sales representative. Since their marriage four years ago, Terry and Evelyn
have been living comfortably. Their income has exceeded their expenses, and they have accumulated an enviable net worth. This includes $10,000 that they have built up in savings and investments. Because their income has always been more than enough for them to have the lifestyle they desire, the Beckers have done no financial planning.

Evelyn has just learned that she's pregnant. She's concerned about how they'll make ends meet if she quits work after their child is born. Each time she and Terry discuss the matter, he tells her not to worry because "we've always managed to pay our bills on time." Evelyn can't understand his attitude because her income will be completely eliminated. To convince Evelyn that there's no need for concern, Terry points out that their expenses last year, but for the common stock purchase, were about equal to his take-home pay. With an anticipated promotion and an expected 10 percent pay raise, his income next year should exceed this amount. Terry also points out that they can reduce luxuries (trips, recreation, and entertainment) and can always draw down their savings or sell some of their stock if they get in a bind. When Evelyn asks about the long-run implications for their finances, Terry says there will be "no problems" because his boss has assured him that he has a bright future with the engineering firm. Terry also emphasizes that Evelyn can go back to work in a few years if necessary.

Despite Terry's arguments, Evelyn feels that they should carefully examine their financial condition in order to do some serious planning. She has gathered the following financial information for the year ending December 31, 2017:

Salaries Take-Home Pay Gross Salary
Terry $52,500 $76,000
Evelyn 29,200 42,000

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Item Amount
Food $5,902
Clothing 2,300
Mortgage payments, including property taxes of $1,400 11,028
Travel and entertainment card balances 2,000
Gas, electric, water expenses 1,990
Household furnishings 4,500
Telephone 640
Auto loan balance 4,650
Common stock investments 7,500
Bank credit card balances 675
Federal income taxes 22,472
State income tax 5,040
Social security contributions 9,027
Credit card loan payments 2,210
Cash on hand 85
2012 Nissan Sentra 10,500
Medical expenses (unreimbursed) 600
Homeowner's insurance premiums paid 1,300
Checking account balance 485
Auto insurance premiums paid 1,600
Transportation 2,800
Cable television 680
Estimated value of home 185,000
Trip to Europe 5,000
Recreation and entertainment 4,000
Auto loan payments 2,150
Money market account balance 2,500
Purchase of common stock 7,500
Addition to money market account 500
Mortgage on home 148,000

Critical Thinking Questions

1. Using this information and Worksheets 2.1 and 2.2, construct the Beckers' balance sheet and income and expense statement for the year ending December 31, 2017.
2. Comment on the Beckers' financial condition regarding (a) solvency, (b) liquidity, (c) savings, and (d)

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ability to pay debts promptly. If the Beckers continue to manage their finances as described, what do you expect the long-run consequences to be? Discuss.
3. Critically evaluate the Beckers' approach to financial planning. Point out any fallacies in Terry's observations, and be sure to mention (a) implications for the long term, as well as (b) the potential impact of inflation in general and specifically on their net worth. What procedures should they use to get their financial house in order? Be sure to discuss the role that long- and short-term financial plans and budgets might play.

2.2 Brooke Stauffer Learns to Budget

Brooke Stauffer recently graduated from college and moved to Atlanta to take a job as a market research analyst. She was pleased to be financially independent and was sure that, with her $45,000 salary, she could cover her living expenses and have plenty of money left over to furnish her studio

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apartment and enjoy the wide variety of social and recreational activities available in Atlanta. She opened several department-store charge accounts and obtained a bank credit card.
For a while, Brooke managed pretty well on her monthly take-home pay of $2,893, but by the end of 2017, she was having trouble fully paying all her credit card charges each month. Concerned that her spending had gotten out of control and that she was barely making it from paycheck to paycheck, she decided to list her expenses for the past calendar year and develop a budget. She hoped not only to reduce her credit card debt but also to begin a regular savings program.
Brooke prepared the following summary of expenses for 2017:

Item Annual Expenditure

Rent $12,000
Auto insurance 1,855
Auto loan payments 3,840
Auto expenses (gas, repairs, and fees) 1,560
Clothing 3,200
Installment loan for stereo 540
Personal care 424
Phone 600
Cable TV 440
Gas and electricity 1,080
Medical care 120
Dentist 70
Groceries 2,500
Dining out 2,600
Furniture purchases 1,200
Recreation and entertainment 2,900
Other expenses 600

After reviewing her 2017 expenses, Brooke made the following assumptions about her expenses for 2018:
1. All expenses will remain at the same levels, with these exceptions:
a. Auto insurance, auto expenses, gas and electricity, and groceries will increase 5 percent.
b. Clothing purchases will decrease to $2,250.
c. Phone and cable TV will increase $5 per month.
d. Furniture purchases will decrease to $660, most of which is for a new television.
e. She will take a one-week vacation to Colorado in July, at a cost of $2,100.
2. All expenses will be budgeted in equal monthly installments except for the vacation and these items:
a. Auto insurance is paid in two installments due in June and December.
b. She plans to replace the brakes on his car in February, at a cost of $220.
c. Visits to the dentist will be made in March and September.
3. She will eliminate his bank credit card balance by making extra monthly payments of $75 during each of the first six months.
4. Regarding her income, Brooke has just received a small raise, so her take-home pay will be $3,200 per month.

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Critical Thinking Questions

1. a. Prepare a preliminary cash budget for Brooke for the year ending December 31, 2018, using the format shown in Worksheet 2.3.
b. Compare Brooke's estimated expenses with her expected income and make recommendations

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that will help her balance his budget.
2. Make any necessary adjustments to Brooke's estimated monthly expenses, and revise her annual cash budget for the year ending December 31, 2018, using Worksheet 2.3.
3. Analyze the budget and advise Brooke on her financial situation. Suggest some long-term, intermediate, and short-term financial goals for Brooke, and discuss some steps she can take to reach them.

Answers to Concept Checks may be found in the Instructor Resource Manual

Concept Checks/CH 2

2-1 What are the two types of personal financial statements? What is a budget, and how does it differ from personal financial statements? What role do these reports play in a financial plan?
2-2 Describe the balance sheet, its components, and how you would use it in personal financial planning. Differentiate between investments and real and personal property.
2-3 What is the balance sheet equation? Explain when a family may be viewed as Technically insolvent.
2-4 Explain two ways in which net worth could increase (or decrease) from one period to the next.

2-5 What is an income and expense statement? What role does it serve in personal financial planning?
2-6 Explain what cash basis means in this statement: “An income and expense statement should be prepared on a cash basis.” How and where are credit purchases shown when statements are prepared on a cash basis?
2-7 Distinguish between fixed and variable expenses, and give examples of each.
2-8 Is it possible to have a cash deficit on an income and expense statement? If so, how?

2-9 How can accurate records and control procedures be used to ensure the effectiveness of the personal financial planning process?
2-10 Describe some of the areas or items you would consider when evaluating your Balance sheet and income and expense statement. Cite several ratios that could help in this effort.
2-11 Describe the cash budget and its three parts. How does a budget deficit differ from a budget surplus?
2-12 The Rivera family has prepared their annual cash budget for 2018. They have divided it into 12 monthly budgets. Although only 1 monthly budget balances, they have managed to balance the overall budget for the year. What remedies are available to the Rivera family for meeting the monthly budget deficits?
2-13 Why is it important to analyze budget variances and their implied surpluses or deficits at the end of each month?
2-14 Why is it important to use time value of money concepts in setting personal financial goals?
2-15 What is compounding?.
2-16 When might you use future value? Present value? Give specific examples.

Applying Personal Finance

What's Your Condition?

Financial statements reflect your financial condition. They help you measure where you are now. Then, as time passes and you prepare your financial statements periodically, you can use them to track your progress toward financial goals. Good financial statements are also a must when you apply for a loan. This project will help you to evaluate your current financial condition.

Look back at the discussion in this chapter on balance sheets and income and expense statements, and prepare your own. If you're doing this for the first time, it may not be as easy as it sounds! Use the following questions to help you along.

1. Have you included all your assets at fair market value (not historical cost) on your balance sheet?
2. Have you included all your debt balances as liabilities on your balance sheet? (Don't take your monthly payment amounts multiplied by the number of payments you have left—this total includes future interest.)
3. Have you included all items of income on your income and expense statement? (Remember, your paycheck is income and not an asset on your balance sheet.)
4. Have you included all debt payments as expenses on your income and expense statement? (Your phone bill is an expense for this month if you've already paid it. If the bill is still sitting on your desk staring you in the face, it's a liability on your balance sheet.)
5. Are there occasional expenses that you've forgotten about, or hidden expenses such as entertainment that you have overlooked? Look back through your checkbook, spending diary, or any other financial records to find these occasional or infrequent expenses.
6. Remember that items go on either the balance sheet or the income and expense statement, but not on both. For example, the $350 car payment you made this month is an expense on your income and expense statement. The remaining $15,000 balance on your car loan is a liability on your balance sheet, while the fair market value of your car at $17,500 is an asset.

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After completing your statements, calculate your solvency, liquidity, savings, and debt service ratios. Now, use your statements and ratios to assess your current financial condition. Do you like where you are? If not, how can you get where you want to be? Use your financial statements and ratios to help you formulate plans for the future.

Welcome to Money Online

Money Online! is a set of links to relevant Web sites and companion exercises that will help you use the Web effectively in financial planning. By bookmarking (saving) the URLs, you will build a valuable library of personal finance Web sites.

Web site addresses may change over time, so if you have difficulty linking to a URL, please try using key words in your preferred search engine.

CHAPTER 2– Developing Your Financial Statements and Plans

1. **http://www.kiplinger.com/tools/budget/index.html**
What you *think* you're going to spend is one thing; what you *actually* spend may be another! Project your expenditures and then compare them with your actual expenses using Kiplinger's tool, "A Budget for Today and Tomorrow." Start today to get a handle on your expenditures.

2. **http://www.suzeorman.com/**
Up-to-the-minute financial information and advice are assembled for you on award-winning Suze Orman's Web site. Click on the "Resource Center" for a comprehensive library of topics.

3. **http://www.metlife.com**
Big events in your life present special needs. MetLife offers Life Advice to help you through the times and challenges of your life. From the homepage, click on "For Individuals" > "Life Advice" > "Life Transitions" to find coverage on topics such as marriage, divorce, remarriage, becoming a parent, coming to the United States, loss of a loved one, loss of a job, reentering the workforce, and leaving the military.

4. **http://www.paycheckcity.com**
How much of your paycheck will you get to bring home? This Web site offers calculators to determine how much of your paycheck you'll be able to take home as either a salaried or an hourly employee and how the 2009 Stimulus Package will affect your taxes.

5. http://getoutofdebt.org/money-personality-quiz-and-test-what-are-your-spending-habits/
Your spending personality could be costing you big bucks every year! Take the Money Personality Quiz and Test to determine your dominant spending personality, and obtain information on how best to deal with it.

6. **http://www.marketwatch.com/**
Keep up to date with the latest news and developments on *The Wall Street Journal* digital network. Click on "Personal Finance" and then on "Life & Money." Scroll down to see articles or click on other topics of interest.

7. **http://moneycentral.msn.com**
Find articles and information on almost any personal finance topic imaginable at MoneyCentral. Click on "Personal Finance" and choose from their many topics and tools. Search for a college or

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scholarship, evaluate your debt or your insurance needs, or start planning now for your retirement.

8. http://www.moneymanagement.org/Financial-Education/Frugal-Living.aspx
How can you save more money? Browse through the "Frugal Living" section of Money Management International's Web site. Find tips, ideas, and Web resources for saving on various items such as gasoline, groceries, and school supplies.

Just for Fun!

http://www.leadfusion.com/products/financialcalculators/Auto
Which is better: A New or Used Vehicle? See the online scenario and decide for yourself.

http://www.consumerworld.org
This Web site bills itself as a noncommercial guide with over 2,000 of the most useful consumer resources.

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BILLINGSLEY/ GITMAN/ JOEHNK/

PFIN6



2

USING FINANCIAL STATEMENTS AND BUDGETS

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LEARNING OUTCOMES

1. Understand the relationship between financial plans and statements
2. Prepare a personal balance sheet
3. Generate a personal income and expense statement
4. Develop a good record-keeping system and use ratios to evaluate personal financial statements

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LEARNING OUTCOMES *(continued)*

5 Construct a cash budget and use it to monitor and control spending

6 Apply time value of money concepts to put a monetary value on financial goals

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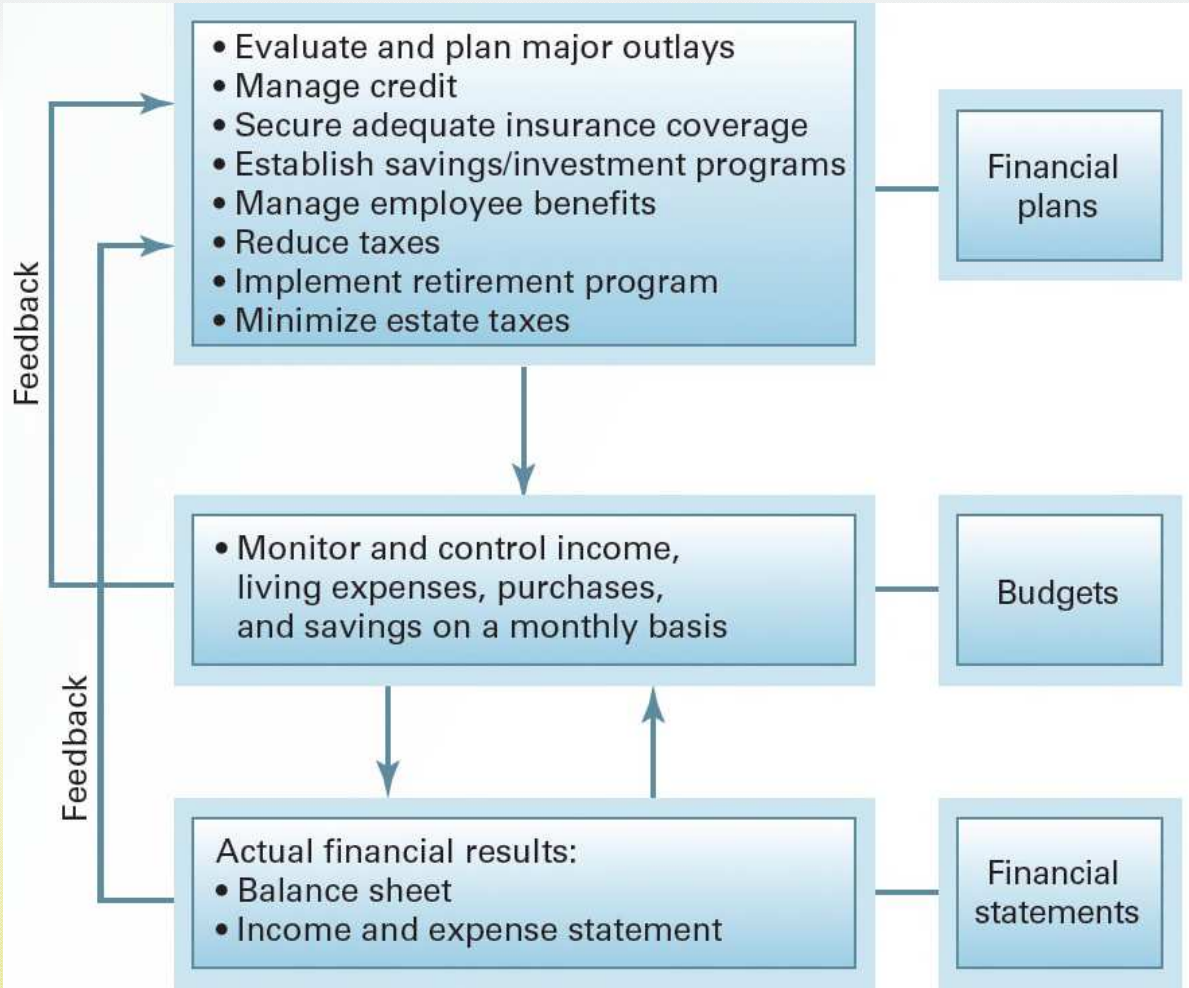
Financial Statements

- **Balance sheets** and **income and expense statements**
  - *Serve as planning tools that are essential to develop and monitor personal financial plans*
- **Budget**: Detailed financial report that looks forward based on expected income and expenses

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Exhibit 2.1 The Interlocking Network of Financial Plans and Statements



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Balance Sheet

- Describes a person's financial position at a given time
- Total assets = Total liabilities + net worth
- Net worth = Total assets - total liabilities

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Assets

- Items that one owns
  - **Liquid assets**: Held in form of cash
  - **Investments**: Acquired to earn a return
  - **Real property**: Immovable assets
  - **Personal property**: Movable and used in everyday life

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Liabilities

- Debts like credit card charges, loans, and mortgages
  - ***Current or short-term****: Due within 1 year of the date of the balance sheet*
    - ***Open account credit obligations****: Current liabilities that represent the balances outstanding against established credit lines*
  - ***Long-term****: Debt due 1 year or more from the date of the balance sheet*

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Net Worth

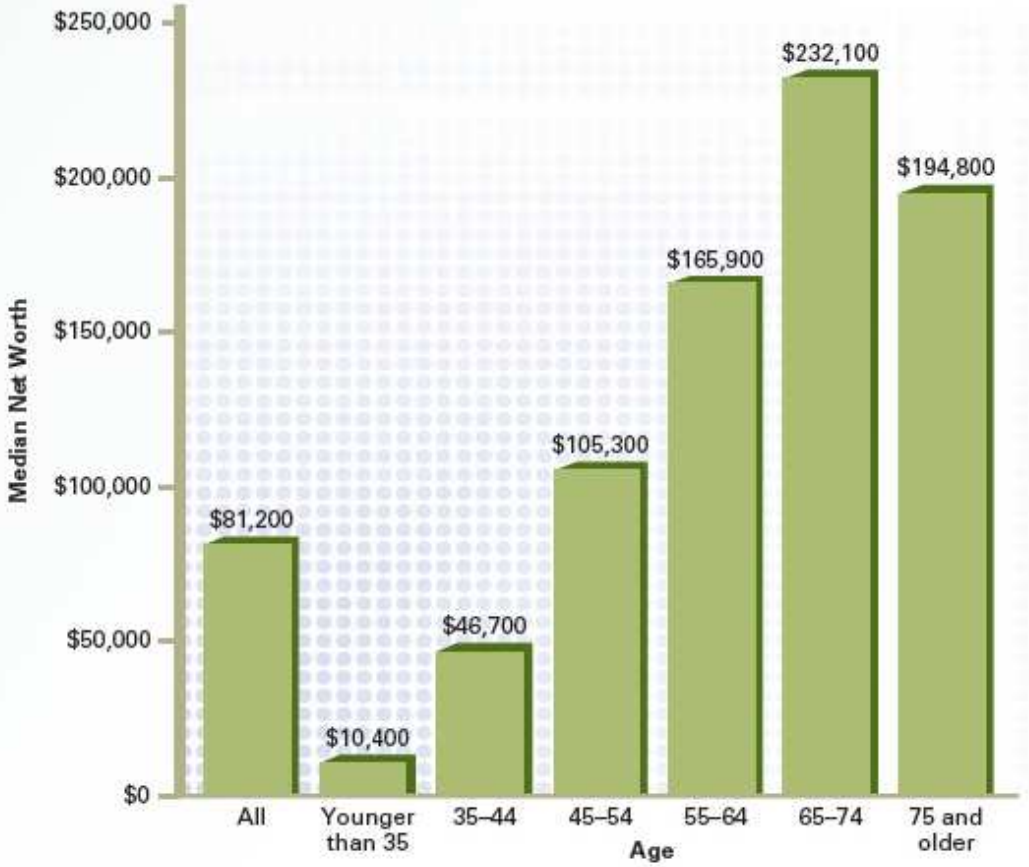
- Individual's or family's actual wealth
  - ***Equity**: Actual ownership interest in a specific asset or group of assets*
- If the net worth is less than zero, then the individual or family is **insolvent**

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Exhibit 2.2 Median Net Worth by Age

Net worth starts to build in the younger-than-35 age bracket and continues to climb, peaking at the 65–74 age bracket. As indicated for the 74 and older age bracket, net worth declines after a person has been retired for a few years and has consequently used his or her assets to meet living expenses.



Source: Adapted from Jesse Bricker, Lisa J. Dettling, Alice Henriques, Joanne W. Hsu, Kevin B. Moore, John Sabelhaus, Jeffrey Thompson, and Richard A. Windle, "Changes in U.S. Family Finances from 2010 to 2013: Evidence from the Survey of Consumer Finances," Board of Governors of the Federal Reserve System, Washington, D.C. (October 24, 2014; data are for 2013), http://www.federalreserve.gov/pubs/bulletin/2014/pdf/scf14.pdf, Table 2, accessed May 2016.

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Balance Sheet Format and Preparation

- List your assets at their fair market value as of the date you are preparing the balance sheet
- List all current and long-term liabilities
- Calculate net worth

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Income and Expense Statement

- Prepared on a cash basis
  - ***Cash basis****: Only transactions involving actual cash inflows or actual cash outlays are recorded*
- **Income**: earnings received as wages, salaries, bonuses, commissions, interest and dividends, or proceeds from the sale of assets
- **Expenses**: Money spent on living expenses and to pay taxes, purchase assets, or repay debt

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Income and Expense Statement

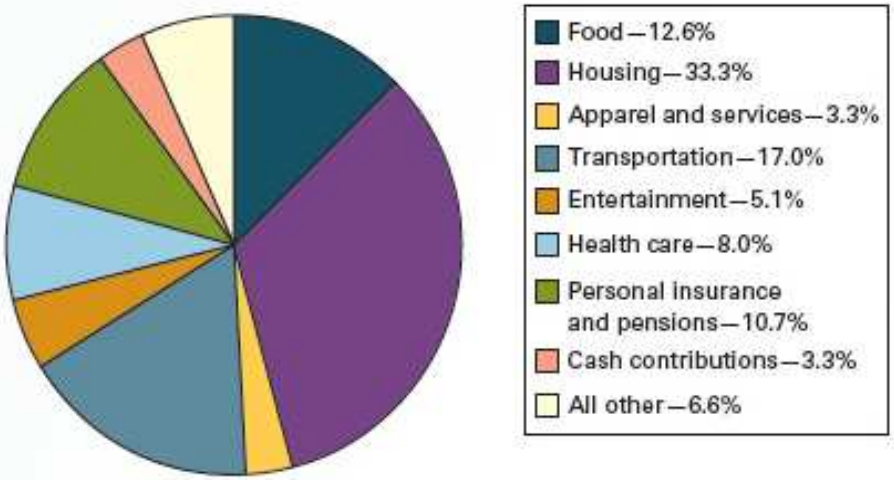
- **Cash surplus**: Excess amount of income over expenses
  - *Results in increased net worth*
- **Cash deficit**: Excess amount of expenses over income
  - *Results in insufficient funds and decreased net worth*

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Exhibit 2.3 How We Spend Our Income

Almost three-quarters of average annual expenditures fall into one of four categories: housing, transportation, food, and personal insurance and pensions.



Source: "Consumer Expenditures—2014," Washington, D.C.: U.S. Department of Labor, Bureau of Labor Statistics, News Release, USDL-15-1696, based on Table A, September 3, 2015.

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Preparing the Income and Expense Statement

- Record your income from all sources for the chosen period
- Establish meaningful expense categories
- Subtract total expenses from total income to get the cash surplus or deficit

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Exhibit 2.4 Ratios for Personal Financial Statement Analysis

Ratio	Formula	2016 Calculation for the Nelsons
Solvency ratio	$\frac{\text{Total net worth}}{\text{Total assets}}$	$\frac{\$93,535}{\$266,485} = 0.351$, or 35.1%
Liquidity ratio	$\frac{\text{Total liquid assets}}{\text{Total current debts}}$	$\frac{\$2,285}{\$17,710^{(a)}} = 0.129$, or 12.90%
Savings ratio	$\frac{\text{Cash surplus}}{\text{Income after taxes}}$	$\frac{\$21,551}{\$86,15 - \$18,319} = \frac{\$21,551}{\$68,396} = 0.315$, or 31.5%
Debt service ratio	$\frac{\text{Total monthly loan payments}}{\text{Monthly gross (before-tax) income}}$	$\frac{\$1,387^{(b)}}{\$7,226^{(c)}} = 0.192$, or 19.2%

(a) You'll find the Nelsons' total liquid assets ($2,285) and total current liabilities ($1,070) on Worksheet 2.1. The total current debt totals $17,710: current liabilities of $1,070 (from Worksheet 2.1) plus loan payments due within 1 year of $16,640 (from Worksheet 2.2). Note that loan payments due within 1 year consist of $11,820 in mortgage payments, $2,520 in auto loan payments, $800 in furniture loan payments, $900 in education loan payments, and $600 in loan payments to parents.

(b) On an annual basis, the Nelsons' debt obligations total $16,640 ($11,820 in mortgage payments, $2,520 in auto loan payments, $800 in furniture loan payments, $900 in education loan payments, and $600 in loan payments to parents; all from Worksheet 2.2). The Nelsons' total monthly loan payments are about $1,387 ($16,640 ÷ 12months).

(c) Dividing the Nelsons' annual gross income (also found in Worksheet 2.2) of $86,715 by 12 equals $7,226 per month.

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Cash Budget

- Takes into account estimated monthly cash receipts and cash expenses for the coming year
- Helps to:
  - *Maintain the necessary information to monitor and control finances*

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Cash Budget

- *Decide how to allocate income to reach financial goals*
- *Implement a system of disciplined spending*
- *Reduce needless spending*
- *Achieve long-term financial goals*

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Dealing With Temporary Budget Deficit

- Shift expenses from months with budget deficits to months with surpluses
- Use savings, investments, or borrowing to cover temporary deficits

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Dealing With Annual Budget Deficit

- Liquidate savings and investments or borrow to meet the total deficit
- Cut low-priority expenses from the budget
- Increase income

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Budget Control Schedule

- Summary that shows how actual income and expenses compare with:
  - *Budget categories*
  - *Existing variances*

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Time Value of Money

- Concept that a dollar today is worth more than a dollar received in the future
  - ***Future value**: Today's amount that will grow if it earns a specific rate of interest over a given period*
    - Growth in value occurs because of earning interest and **compounding**
    - Future value = Amount invested x

      future value of factor

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Time Value of Money

- ***Annuity**: Fixed sum of money that occurs annually*
  - Yearly savings = $\frac{\text{amount of money desired}}{\text{future value of annuity factor}}$
- ***Present value**: Value today of an amount to be received in the future*
  - **Discounting**: Process of finding present value
  - Present value = Future value x Present value factor

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KEY TERMS

- Personal financial statements
- Balance sheet
- Income and expense statement
- Budget
- Liquid assets
- Real property
- Personal property
- Fair market value
- Current (short-term) liabilities
- Open account credit obligations
- Long-term liabilities
- Net worth
- Equity
- Insolvency
- Cash basis
- Income
- Cash surplus
- Cash deficit
- Solvency ratio

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KEY TERMS

- Liquidity ratio
- Savings ratio
- Debt service ratio
- Cash budget
- Budget control schedule
- Time value of money
- Future value
- Compounding
- Present value
- Discounting

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SUMMARY

- Financial plans, financial statements, and budgets provide direction by helping you work toward specific financial goals
- Balance sheet preparation enables you to know your financial status
- Income and expense statement is prepared on a cash basis recording only actual cash inflows and actual cash outlays
- Preparing, analyzing, and monitoring your personal budget are essential steps for successful personal financial planning

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