

Chapter 2

Accounting for Accruals and Deferrals

General Comments for Chapter 2

This chapter introduces accrual accounting. A key concept in this chapter is for the student to understand that revenues earned must be matched with expenses incurred to earn those revenues, regardless of when the cash exchange occurs. You can introduce the subject simply by using a single accounting event in which a business provides services on account. Chapter 1 assumed that all transactions were cash-based, but we all know that reality in the business world includes products and services purchased and sold ‘on credit’ or ‘on account’. Show students the effect of this accrual by having them prepare an income statement, a statement of retained earnings, a balance sheet, and a statement of cash flows. Students will often stumble on the concept of Unearned Revenue, thinking that it’s actually a revenue account when in fact it’s a liability. Explain how customer payments that are received before goods or services are provided must be refunded to the customer if those promised goods or services are never actually delivered. Encourage students to record transactions using the horizontal financial statements model, even when problems do not require them to do so. Developing the habit of recording transactions using the model will help students see the impact of each transaction on the financial statements as well as help students identify their errors if the accounting equation is not in balance. Specific examples are provided in the detailed lesson plan outline. If you would like to begin the chapter with a problem-based learning exercise, see the notes below.

Problem-Based Learning Case: Accrual Accounting

(We describe problem-based learning in the introduction to this manual.)

Instructions: The case appears on the following page in a format you can copy or display. Distribute copies of the case to the class before explaining accrual accounting. Ask students to individually develop answers. After allowing students time to develop their individual answers, put them into groups to reach consensus on an answer. Also, ask each group to select a spokesperson. Allow groups time to develop answers, and then call on some of the spokespersons to share their solutions. As you respond to the student solutions, explain the basic concepts of accrual accounting with respect to revenues earned and expenses incurred on account.

The final result is:

Net income: revenue of \$145,000 less expenses of \$80,000 = \$65,000.

Total assets: cash, \$45,000 plus accounts receivable, \$25,000 = \$70,000.

Total liabilities: salaries payable: \$5,000.

Chapter 2 Problem-Based Learning Case: Accrual Accounting



Professional Headhunters, Inc. (PHI), a job placement company, operates in the northeastern United States. During 2014, the company earned \$145,000 in revenue by providing services to customers. However, it collected only \$120,000 of the revenue in cash. PHI expected to collect the remaining \$25,000 in 2015. In addition, PHI incurred \$80,000 of expenses. However, by the end of 2014, PHI had paid only \$75,000 of the cash owed for expenses because it had not yet paid \$5,000 to employees who had worked during 2014 but had not been paid by the end of the year. PHI expected to pay the \$5,000 in cash to the employees during 2015. Based on this information alone, determine the amount of net income, total assets, and total liabilities PHI should report on its 2014 financial statements.

Detailed Outline of a Lesson Plan for Chapter 2

- I. **Distribute copies of Demonstration Problem 2-1**, found near the back of this chapter of the Instructor's Manual.
 - A. Explain the phrase “*on account.*” Tell students this means Packard recognizes the revenue when it is earned, which may be before it collects the cash. Packard's customers created charge accounts and purchased goods or services by charging the purchases to their accounts. Revenue is recognized in the accounting period in which the services are provided regardless of when cash changes hands. This discussion should lead to defining the term accrual. In general, transactions in which a revenue or expense is recognized before cash changes hands are called *accruals*. Demonstrate this point by recording the revenue recognition for Packard using the horizontal financial statements model. Next, have your students prepare an income statement, a statement of retained earnings, a balance sheet, and a statement of cash flows. To minimize the time required to prepare these financial statements, you may provide students with copies of the workpaper for Demonstration Problem 2-1. The workpaper is near the back of this chapter of the Instructor's Manual.
 - B. Since Packard did not issue any stock, the statement of changes in stockholders' equity becomes a statement of retained earnings. Although the text does not cover a statement of retained earnings, students should be able to infer the format from their experience with the statement of changes in stockholders' equity. Use the exercise to discuss diversity in reporting practice. Although there is general consistency in financial reporting, there is also variety. Students should learn to understand different reporting formats.
 - C. After accounting for the 2014 revenue, assume Packard collects the \$5,000 account receivable in 2015. This is the only 2015 transaction. Have students record the event using the horizontal financial statements model and prepare the four basic financial statements for the 2015 accounting period. Encourage students to analyze the difference between the amount of net income and the amount of cash flow from operating activities. This single transaction clearly illustrates differences between the income statement and the statement of cash flows.
 - D. Introduce the term *unearned revenue before starting part B of this problem*. Explain that *unearned revenue is a liability* because it represents an *obligation to provide future services*. Make the point that businesses can be *obligated* to provide services as well as to pay cash. Show your students how to record the liability using the horizontal financial statements model.

- E. Explain the year-end adjustment necessary to recognize three months of earned revenue on December 31. Emphasize the difference between the amount of cash collected and the amount of revenue recognized. Highlight that Jackson earned and recognized the revenue *after* it collected the cash. Draw a general definition of deferrals from this illustration. ***Transactions in which a revenue or expense is recognized after cash changes hands are termed deferrals.*** Contrast deferrals with accruals which were presented in part A of Demonstration Problem 2-1. For emphasis, reiterate the explanation of an accrual. ***Transactions in which a revenue or expense is recognized before cash changes hands are termed accruals.*** Although these are not precise definitions, they describe the basic concepts in terms students can understand. Explain that accrual accounting uses both accruals and deferrals.
- F. Also note the connection between reducing the liability account (unearned revenue) and recognizing revenue, reinforcing that ***revenue is an increase in assets or a decrease in liabilities from providing services or products to customers.*** Similarly, an ***expense is a decrease in assets or an increase in liabilities that occurs in efforts to produce revenue.*** ***Net income is a change in wealth*** (increase in net assets). It is not enough to orally define terms. You must repeatedly demonstrate the definitions within the context of problems. Gradually, students will understand fundamental accounting interrelationships.

- II. Use separate examples to introduce other types of deferrals (prepaid assets and supplies).** You can use exercises 2-8, 2-9 or 2-11 in the textbook as demonstration problems, or create your own. We often make up demonstration problems like these in the classroom. Encourage students to think by asking them to attempt to record the effects of events before you discuss them. For example, instead of defining prepaid assets, simply give the students an event involving a prepaid asset. Say, “On October 1, 2014, ABC Company paid \$1,200 in advance for one year of property insurance protection.” Without having ever discussed prepaid insurance, ask the students to record the event using the horizontal financial statements model. Make them write down an answer. Don’t be concerned with accuracy. Be concerned with involvement. Walk around the room and look at what they are doing. Occasionally collect these exercises from the students as in-class assignments. Give them credit regardless of their answers. The grade is for participation, not accuracy. Your objective is to motivate them to think about the problem before you offer a solution. At this stage, you are not evaluating their performance.
- III. Time considerations and homework assignments.** Completing Demonstration Problems 2-1A & B should require approximately one hour of class time. Have the students work along with you as you explain the problems. Exercises 2-3, 2-15, 2-16, and 2-17 parallel the Demonstration Problems and can be considered for homework assignments.

- IV. Use Demonstration Problem 2-2 as a comprehensive summary problem.** This is a two-cycle problem. Explain the first cycle (2014) and then use the second cycle as an in-class assignment. Allot approximately one hour to complete this assignment. Students needing additional time can finish the problem as homework. Problem 2-38 mirrors the demonstration problem and can be used as a homework assignment.
- V. Use the horizontal financial statements model to highlight the differences between accrual and cash basis accounting.** For example, suppose a company provides \$5,000 of services on account and later collects \$3,000 of the account receivable. The effect of these two events on the financial statements is shown below.

Event No.	Balance Sheet					Income Statement				Statement of Cash Flows	
	Cash	+ Acct. Rec.	=	Liab.	+ Equity	Rev.	- Exp.	=	Net Inc.		
1	NA	+ 5,000	=	NA	+ 5,000	5,000	- n/a	=	5,000	NA	
2	3,000	+ (3,000)	=	NA	+ NA	NA	- n/a	=	NA	+3,000	OA

Include other events you deem appropriate. By this point students have a sufficient background to use the horizontal financial statements model. It is critically important to establish a firm foundation in the basics before progressing to more advanced representations. Introduce the model gradually.

- VI. Hand out the official answers to any of the Demonstration Problems that you covered in class.** Doing so allows the students to focus more on understanding the material than on taking notes for later reference. If they know that they will have access to the official answers to the problems worked in class, then they will not be as concerned about recording those answers during the discussion.

Demonstration Problem 2-1A - Revenue Earned on Account

Part A

Packard Consultants was started in 2014. During that year the company earned \$5,000 of consulting revenue *on account*. Assume this is the only event experienced by Packard during 2014.

Required

1. Record the event using the horizontal financial statements model.
2. Prepare an income statement, a statement of retained earnings, a balance sheet, and a statement of cash flows for 2014.

Part B

During 2015, Packard Consultants collected \$5,000 cash from the account receivable it established in Part A.

Required

1. Record the event under using the horizontal financial statements model.
2. Prepare an income statement, a statement of retained earnings, a balance sheet, and a statement of cash flows for 2015.

Demonstration Problem 2-1B - Unearned Revenue

Jackson Legal Services was started when a client paid the firm a \$12,000 cash retainer on October 1, 2014. Jackson agreed to provide legal advice to the client for a one-year period beginning on the date of the cash receipt. The closing date for the law practice is December 31.

Required

1. Record the events for 2014 and 2015 using the horizontal financial statements model.
2. Prepare an income statement, a statement of retained earnings, a balance sheet, and a statement of cash flows for 2014 and 2015.

Demonstration Problem 2-2 - Accruals and Deferrals

Part A Smith Company experienced the following accounting events during 2014:

1. Smith Company was started on January 1 when it issued common stock for \$2,000 cash.
2. During the year, the company recognized \$1,500 of consulting revenue on account.
3. The company collected \$1,200 cash from accounts receivable.
4. Smith accrued salary expense during the year of \$900.
5. Paid \$700 of the salaries payable liability.
6. Paid dividends of \$100 to the stockholders.
7. Paid \$360 cash for an insurance policy that covered the company for one year beginning March 1, 2014.
8. On November 1, 2014, Smith collected \$2,880 cash in advance for consulting services to be provided under a one-year contract.
9. Recognized insurance expense (Policy in event 7) for ten months.
10. Recognized income earned under the one-year contract at December 31, 2014.

Part B Smith Company experienced the following accounting events during 2015:

1. Smith Company issued additional common stock for \$3,000 cash.
2. During the period, Smith recognized \$2,700 of consulting revenue earned on account.
3. Smith collected \$2,800 cash from accounts receivable.
4. Smith accrued salary expense of \$1,500.
5. The company paid \$1,350 of the salaries payable liability.
6. Smith paid dividends of \$300 to the stockholders.
7. Paid \$420 cash to renew the insurance policy for another one-year term.
8. Smith adjusted the books to reflect the insurance expense that had been incurred in 2015 (described in event 7 of 2014).
9. Smith adjusted the books to reflect the revenue earned in 2015 under the one-year consulting contract that began in 2014 (event 8 in 2014).

Required

1. Record the events using the horizontal financial statements model.
2. For 2014 and 2015, prepare an income statement, a statement of retained earnings, a balance sheet, and a statement of cash flows.

Demonstration Problem 2-1A Solution, part 1.

	Assets		=	Liabilities	+	Equity	
Part A, 2014	Cash	Accounts +Receivable	=	Liabilities	+	Common Stock	+ Retained Earnings
Beginning balances	\$ 0	\$ 0	=	\$ 0	+	\$ 0	\$ 0
Effect of recognizing revenue		5,000					5,000
Part B, 2015							
Effect of collecting cash	5,000	(5,000)					
	_____	_____		_____		_____	_____
Ending balances	\$5,000	+ \$ 0	=	\$ 0	+	\$ 0	+ \$5,000
	=====	=====		=====		=====	=====

Demonstration Problem 2-1A Solution, part 2. Financial Statements

Packard Consultants		
Income Statements		
For the Years Ended December 31,	2014	2015
Consulting revenue	\$5,000	\$ 0
Expenses	0	0
Net income	<u>\$5,000</u>	<u>\$ 0</u>
Statements of Retained Earnings		
Beginning retained earnings	\$ 0	\$5,000
Plus: Net income	5,000	0
Less: Dividends	0	0
Ending retained earnings	<u>\$5,000</u>	<u>\$5,000</u>
Balance Sheets at December 31		
Assets		
Cash	\$ 0	\$5,000
Accounts receivable	5,000	0
Total assets	<u>\$5,000</u>	<u>\$5,000</u>
Equity		
Retained earnings	<u>\$5,000</u>	<u>\$5,000</u>
Statements of Cash Flows		
Cash flows from operating activities	\$ 0	\$5,000
Cash flows from investing activities	0	0
Cash flows from financing activities	0	0
Net change in cash	0	5,000
Beginning cash balance	0	0
Ending cash balance	<u>\$ 0</u>	<u>\$5,000</u>

Demonstration Problem 2-1B Solution, part 1.

	Assets	=	Liabilities	+	Equity	
	Cash	=	Unearned Revenue	+	Com. Stock	Ret. Earn.
2014						
Beginning balances	\$ 0		\$ 0		\$ 0	\$ 0
1. Recognize liability	12,000		12,000			
2. Adjustment for earned revenue			(3,000)			3,000
	_____		_____		_____	_____
Ending/beginning balances	\$12,000	=	\$ 9,000	+	\$ 0	\$3,000
2015						
1. Adjustment for earned revenue			(9,000)			9,000
	_____		_____		_____	_____
Ending balances	\$12,000		\$ 0		\$ 0	\$12,000
	=====		=====		=====	=====

Demonstration Problem 2-1B Solution, part 2. Financial Statements

Jackson Legal Services Financial Statements		
Income Statements		
For the Years Ended December 31,	2014	2015
Fees revenue	\$ 3,000	\$ 9,000
Expenses	0	0
Net income	<u>\$ 3,000</u>	<u>\$ 9,000</u>
Statements of Retained Earnings		
Beginning retained earnings	\$ 0	\$ 3,000
Plus: Net income	3,000	9,000
Less: Dividends	0	0
Ending retained earnings	<u>\$ 3,000</u>	<u>\$12,000</u>
Balance Sheets as of December 31		
Assets		
Cash	<u>\$12,000</u>	<u>\$12,000</u>
Liabilities		
Unearned revenue	\$ 9,000	\$ 0
Equity		
Retained earnings	3,000	12,000
Total liabilities and equity	<u>\$12,000</u>	<u>\$12,000</u>
Statements of Cash Flows		
Cash flows from operating activities	\$12,000	\$ 0
Cash flows from investing activities	0	0
Cash flows from financing activities	0	0
Net change in cash	12,000	0
Beginning cash balance	0	12,000
Ending cash balance	<u>\$12,000</u>	<u>\$12,000</u>

Demonstration Problem 2-2 Solution, part A. Horizontal Financial Statements Model for 2014

A spreadsheet is embedded to reflect the solution to this question. This spreadsheet covers both 2014 and 2015. The workpaper for students' use in answering this question would basically be the solution with the amounts deleted for all events except for the 2014 beginning balance.



Worksheet Edmonds
FFAC8e Ch 2 IM.xls

Demonstration Problem 2-2 Solution, part B. Horizontal Financial Statements Model for 2015

Demonstration Problem 2-2 Solution, parts A & B. Financial Statements

Income Statements for the Years Ended 12/31		2014	2015
Consulting revenue		\$ 1,980	\$ 5,100
Total revenue		1,980	5,100
Salary expense		(900)	(1,500)
Insurance Expense		(300)	(410)
Net income		780	\$ 3,190
Statements of Changes in Stockholders' Equity			
Beginning common stock		\$ 0	\$ 2,000
Plus: Common stock issued		2,000	3,000
Ending common stock		2,000	5,000
Beginning retained earnings		0	680
Plus: Net income		780	3,190
Less: Dividends		(100)	(300)
Ending retained earnings		680	2,890
Total stockholders' equity		\$ 2,680	\$ 8,570
Balance Sheets as of December 31			
Cash		\$ 4,920	\$ 8,650
Accounts receivable		300	200
Prepaid Insurance		60	70
Total assets		\$ 5,280	\$ 8,920
Salaries payable		\$ 200	\$ 350
Unearned Revenue		2,400	0
Total liabilities		2,600	350
Common stock		2,000	5,000
Retained earnings		680	3,570
Total stockholders' equity		2,680	8,570
Total liabilities and stockholders' equity		\$ 5,280	\$ 8,920
Statements of Cash Flows			
Cash flows from operating activities			
Cash receipts from consulting revenue		\$ 4,080	\$ 2,800
Cash payments for salaries		(700)	(1,350)
Cash payments for insurance		(360)	(420)
Net cash inflow from operating activities		3,020	1,030
Cash flows from investing activities			
Net cash outflow for investing activities		0	0
Cash flows from financing activities			
Cash receipt from common stock issue		2,000	3,000
Cash payment for dividends		(100)	(300)
Net cash inflow from financing activities		1,900	2,700
Net change in cash		4,920	3,730
Beginning cash balance		0	4,920
Ending cash balance		\$ 4,920	\$ 8,650

Demonstration Problem 2-1 Workpaper, part 1.

	Assets		=	Liabilities	+	Equity	
Part A, 2014	Cash	+ Accounts Receivable	=	Liabilities	+	Common Stock	+ Retained Earnings
Beginning balances	\$ 0	\$ 0	=	\$ 0	+	\$ 0	\$ 0
Effect of recognizing revenue							
Part B, 2015							
Effect of collecting cash							
Ending balances	\$5,000	\$ 0	=	\$ 0	+	\$ 0	\$5,000

Demonstration Problem 2-1 Workpaper, part 2. Financial Statements

Packard Consultants		
Income Statements		
For the Years Ended December 31,	2014	2015
Consulting revenue	\$	\$
Expenses		
Net income	\$ 5,000	\$ 0
Statements of Retained Earnings		
Beginning retained earnings	\$ 0	\$
Plus: Net income		
Less: Dividends		
Ending retained earnings	\$5,000	\$5,000
Balance Sheets at December 31		
Assets		
Cash	\$	\$
Accounts receivable		
Total assets	\$	\$
Equity		
Retained earnings	\$5,000	\$5,000
Statements of Cash Flows		
Cash flows from operating activities	\$	\$
Cash flows from investing activities	0	0
Cash flows from financing activities	0	0
Net change in cash		
Beginning cash balance		
Ending cash balance	\$ 0	\$5,000

Demonstration Problem 2-1B Workpaper, part 2

Jackson Legal Services Financial Statements		
Income Statements		
For the Years Ended December 31,	2014	2015
Fees revenue		
Expenses		
Net income	\$ 3,000	\$ 9,000
Statements of Retained Earnings		
Beginning retained earnings	\$ 0	\$ 3,000
Plus: Net income		
Less: Dividends		
Ending retained earnings	\$ 3,000	\$12,000
Balance Sheets as of December 31		
Assets		
Cash		
Liabilities		
Unearned revenue		
Equity		
Retained earnings	3,000	12,000
Total liabilities and equity		
Statements of Cash Flows		
Cash flows from operating activities		
Cash flows from investing activities		
Cash flows from financing activities		
Net change in cash		
Beginning cash balance	0	
Ending cash balance	\$12,000	\$12,000

Demonstration Problem 2-2 Workpaper, parts A & B. Financial Statements

Income Statements for the Years Ended 12/31		2014	2015
Consulting revenue		\$	\$
Total revenue			
Salary expense			
Insurance Expense			
Net income	780	\$ 3,190	
Statements of Changes in Stockholders' Equity			
Beginning common stock	\$	\$	
Plus: Common stock issued			
Ending common stock	2,000	5,000	
Beginning retained earnings			
Plus: Net income			
Less: Dividends			
Ending retained earnings	680	2,890	
Total stockholders' equity	\$	\$	
Balance Sheets as of December 31			
Cash	\$	\$	
Accounts receivable			
Prepaid Insurance			
Total assets	\$		
Salaries payable	\$	\$	
Unearned Income			
Total liabilities	2,600	2,425	
Common stock			
Retained earnings			
Total stockholders' equity			
Total liabilities and stockholders' equity	\$ 5,280	\$10,980	
Statements of Cash Flows			
Cash flows from operating activities			
Cash receipts from consulting revenue	\$	\$	
Cash payments for salaries			
Cash payments for insurance			
Net cash inflow from operating activities	3,020	1,030	
Cash flows from investing activities			
Net cash outflow for investing activities	0	0	
Cash flows from financing activities			
Cash receipt from common stock issue			
Cash payment for dividends			
Net cash inflow from financing activities	1,900	2,700	
Net change in cash			
Beginning cash balance			
Ending cash balance	\$ 4,920	\$ 8,650	

Quiz Questions for Chapter 2

1. X Company recognized \$500 of revenue on account and realized \$400 of cash collections. The company had accrued salary expense of \$300 and invested \$200 in a certificate of deposit. Based on this information alone, the amount of cash flow from operating activities would be
 - a. \$100.
 - b. \$500.
 - c. \$200.
 - d. \$400.

2. On January 1, 2012, West Company had accounts receivable of \$500. During 2014 West earned \$2,500 of service revenue on account. If the accounts receivable balance as of December 31, 2014, was \$400, what was the amount of cash flow from operating activities?
 - a. \$2,000.
 - b. \$3,000.
 - c. \$2,400.
 - d. \$2,600.

3. The entry to record revenue on account
 - a. increases liabilities.
 - b. decreases equity.
 - c. decreases assets.
 - d. none of the above.

4. K Company collected \$500 cash on an account receivable that was due from L Company. Based on this information, which of the following statements is true?
 - a. K Company's total assets would increase.
 - b. L Company's total assets would not change.
 - c. K Company's equity would decrease.
 - d. None of the above.

5. On April 1, Flavin Co. paid \$12,000 cash for an insurance policy that provides coverage for one year beginning immediately. On December 31, Flavin adjusted the books to recognize the amount of the insurance policy used during the year. The amount of the adjustment would be:
 - a. \$8,000
 - b. \$9,000
 - c. \$12,000
 - d. \$0

6. Which of the following illustrates the recognition of revenue earned on account?

	Balance Sheet			Income Statement			Statement of Cash Flow
	Assets	= Liab.	+ Equity	Rev.	- Exp.	= Net Inc.	
a.	+	NA	+	NA	NA	NA	NA
b.	+	NA	+	+	NA	+	NA
c.	-	NA	-	NA	+	-	- OA
d.	+	NA	+	+	NA	+	+ OA

Use the following information to answer the next two questions. BBC Company received \$9,900 cash on February 1, 2014, from XYZ Company as advance payment for services BBC promised to perform for XYZ over the next three years on a continuous basis. Assume that BBC Company's year-end is December 31.

7. On its 2014 income statement, BBC would report revenue of
 - a. \$3,300
 - b. \$9,900
 - c. \$3,025
 - d. \$2,750
8. On its December 31, 2015 balance sheet BBC would report liabilities of
 - a. \$3,575
 - b. \$3,300
 - c. \$9,900
 - d. \$6,875

9. Which of the following illustrates purchasing supplies on account?

	Balance Sheet			Income Statement			Statement of Cash Flow
	Assets	= Liab.	+ Equity	Rev.	- Exp.	= Net Inc.	
a.	+	NA	+	NA	NA	NA	NA
b.	+	+	NA	NA	NA	NA	NA
c.	+	+	NA	NA	NA	NA	+ OA
d.	+	NA	+	+	NA	+	+ OA

10. Which of the following illustrates receiving cash as an advance payment for future services?

	Balance Sheet			Income Statement			Statement of Cash Flow
	Assets	= Liab.	+ Equity	Rev.	- Exp.	= Net Inc.	
a.	+	NA	+	NA	NA	NA	NA
b.	+	+	NA	+	NA	+	NA
c.	+	+	NA	NA	NA	NA	+ OA
d.	+	NA	+	+	NA	+	+ OA

Quiz Answers

Question	Answer
1	D
2	D
3	D
4	B
5	B
6	B
7	C
8	A
9	B
10	C

Summary Outline of a Lesson Plan for Chapter 2

- I. Use Demonstration Problem 2-1 to define and illustrate the concept of accrual accounting.** This problem includes both an accrual (part A) and a deferral (part B) example.
- II. Use separate examples to further illustrate accrual and deferral concepts.**
- III. Use Demonstration Problem 2-2 as a comprehensive summary problem.** Explain the first cycle to the class and use the second cycle as an in-class assignment. Allot one hour for this assignment. Have slower students finish the problem as homework. Use parallel problem 2-38 in the textbook as a homework assignment.
- IV. Time considerations and homework assignments.** Demonstration Problems 2-1 and 2-2 require approximately one hour of class time. Consider assigning exercises 2-11, 2-15, 2-18, 2-21, and Problem 2-28 from the textbook as homework.
- V. Use a financial statements model to highlight the differences between accrual and cash basis accounting.**
- VI. Hand out official answers to the Demonstration Problems worked in class.**