Problem 1

Objective

Problem 1 is designed to review some of the concepts you learned in ACC 255, Principles of Accounting—Financial. Additionally, you will be provided with more information about the company, which will be helpful to you when completing the remaining problems.

Background

During August 2012, Bob organized his new business called Bob's Shovels, Inc. and completed the following transactions:

August 1 Incorporated the business and invested $50,000 of cash by opening a business checking account. The company issued common stock in return for the investment.

August 5 Signed a one year lease and prepaid the rent for a total of $24,000. The lease's term begins on September 1, 2012.

August 9 Purchased a one year insurance policy effective September 1, 2012 for $6,600 and paid the full premium.

August 23 Purchased office equipment including desks, chairs, book cases and computers for $14,700 on account. All office equipment is estimated to have a 7 year useful life with no salvage value. The equipment will be used starting September 1, 2012 and will be depreciated monthly using the straight line method.

August 28 Borrowed $36,000 by issuing a note payable to a bank. The note requires 6% simple interest to be paid monthly, with principal to be repaid in two years. Proceeds from the loan were deposited in the business checking account.

Bob gave you all the information related to the above transactions and you prepared the journal entries shown in the General Journal that appears in Appendix A. You should review these journal entries prior to preparing the entries for September. *Note the posting reference column in the General Journal where account numbers are recorded at the time of posting. These account numbers can be obtained from the Chart of Accounts on page 6 of Packet 2, Appendix B.* You posted the amounts from the journal to the T-accounts in the General Ledger that appears in Appendix B. You should also review the balance sheet in Appendix C, page 10 of Packet 2, to gain an understanding of the financial condition of the company.

The following transactions occurred during the month of September 2012:

September 6 Paid for the office equipment purchased on August 23.

September 10 Bob purchased used manufacturing equipment including wood saws, a lathe, and other wood and metal working equipment for $21,600 and paid cash. The equipment has an

eight-year useful life and no salvage value. Use of the equipment will begin on October 1 and will be depreciated monthly, beginning in October, using the straight line method.

September 15 Bob received a salary for ½ month of $900.

September 29 Bob paid the utility bills (electricity, gas, water, wireless internet connections) totaling $1,100 for the month.

September 30 Bob paid one month's interest on the note payable.

September 30 Bob received his salary of $900 for the second half of September.

Adjusting Entries

September 30 At the end of September you determine that the following adjusting entries are necessary. All expenses should be recorded as administrative expenses, since production has not yet begun.

- One month of prepaid rent has been consumed.
- One month of prepaid insurance has expired.
- Office equipment has depreciated for one month.

Required:

1. Record the six September transactions listed above in the General Journal in Appendix A in the space below the August entries. As you make your journal entries, use the account titles and numbers listed in the Chart of Accounts in Appendix B, page 6. You should also post these transactions to the appropriate T-accounts in the General Journal in Appendix B.

2. Record the three adjusting entries noted above in the space provided in the General Journal and post the amounts to the appropriate T-accounts in the General Ledger.

3. Record the closing entries in the space provided in the General Journal and post the amounts to the appropriate T-accounts in the General Ledger. Recall that the closing process requires you to transfer the totals from each of the income statement accounts to an account entitled "Income Summary" so that the ending balances in the income statement accounts are zero. Since there is no sales revenue for the month of September, only expense accounts will be closed to the Income Summary account. This can be done in a single journal entry. After closing the expense accounts to the Income Summary, prepare one additional entry to close the balance in the Income Summary account to Retained Earnings and post these amounts to the T-accounts.

4. Calculate new ending balances for the T-accounts in the General Ledger.

5. Prepare an income statement and balance sheet for September in the space provided in Appendix C for the month ended September 30. Consider the following:
   a. Use the format of the balance sheet as of August 31st as a guide.
   b. The line items for the income statement for September are provided for you in Appendix C as a guide.
   c. No sales revenue has been earned, so the expenses on the income statement will result in a net operating loss for the month of September.
   d. All the expense accounts should have zero balances because they were closed to the Income Summary. The expense items on your income statement should be comprised of each of the expenses that were closed to the Income Summary. Look at your closing journal entry to get these amounts.
   e. Because there is a net loss for the month of September, you should have a negative value for retained earnings on the balance sheet. You will see this debit balance in Retained Earnings as a result of your closing entry.

Problem 2

Objective

Problem 2 is designed to reinforce your understanding of the accounting transactions associated with the manufacture of a product using job order costing.

Background

On October 1st, Bob began to work on the 315 shovels ordered by Blowes Home Supply, Inc. An example of a finished shovel is shown in Figure 1 below. Bob's strategy is to build and finish shovels in batches to keep costs down. He will supervise the work of two part-time employees in the manufacture of each batch.

Figure 1

Job Order Costing System

As Bob's accountant you note the manufacture of each batch of shovels will be completed in individual and identifiable jobs with all shovels in the job built to the same specifications. This will ensure consistency in the manufactured product. You set up a job order costing system to record the costs of production. In consultation with Bob, you decide that overhead should be applied on the basis of machine hours. You estimate that total manufacturing overhead for the year, the period over which the predetermined rate will be calculated, will be $45,000. Total machine hours for the year are estimated to total 1,250.

The following transactions occurred during the month of October:

October 1 Wood, stainless steel and other raw materials costing $28,000 were purchased on account, delivered and placed into storage.

October 7	Raw materials were requisitioned for use in production of 315 shovels; $15,000 in direct materials and $4,000 in indirect materials.
October 25	Bob paid the utility bills totaling $1,400 for the month. 75% relates to factory operations and 25% relates to administrative activities.
October 28	A total of $2,310 in wages for 210 hours were earned by the two part-time employees working on the production process. Of these, $1,848 was for direct labor and the remaining $462 indirect. The wages will be paid in November.
October 29	Manufacturing overhead is applied to production. Manufacturing overhead is applied to production based on machine hours. The predetermined overhead rate is based on the information given above: $45,000 in estimated overhead and 1,250 estimated machine hours. Actual machine hours for the month of October totaled 185.
October 30	One month of prepaid rent has been consumed and one month of prepaid insurance has expired. In both cases, 60% relates to operations of the factory and 40% relates to administrative activities.
October 30	Depreciation on both the office equipment and manufacturing (factory) equipment for the month of October is recorded.
October 31	The 315 shovels for Blowes Home Supply, Inc. were completed and moved to finished goods storage. Assume that the job cost sheets show the manufacturing cost of the shovels is $23,000.
October 31	The 315 shovels were delivered to Blowes Home Supply, Inc. and the sale was made on account and recorded at $110 per shovel.
October 31	Bob paid one month's interest on the note payable.
October 31	Bob received his salary of $1,800, paid in cash, for the month of October. 50% of his salary related to factory operations and 50% related to administrative activities.

Required:

1. Prepare journal entries to record the preceding transactions in the appropriate place in the General Journal in Appendix A.

2. Post the entries in (1) above to the T-accounts in the General Ledger in Appendix B.

3. Examine the balance in the Manufacturing Overhead account (#121) and prepare a journal entry to close any balance in the Manufacturing Overhead account to the Cost of Goods Sold account (# 511). Post the entry to the T-accounts in the General Ledger.

4. Prepare an income statement for October in the space provided in Appendix C. You can obtain the account balances by looking at the revenue and expense T-accounts and using those figures to prepare the income statement.

Problem 3

Objective

Problem 3 is designed to reinforce the concepts of activity based costing (ABC) and to contrast overhead allocation using ABC with a single, plant-wide overhead allocation model as was illustrated in Problem 2.

As Bob's Shovels, Inc. diversifies their product line and increases their sales volume, managing costs and profitability will become more important. You recommend to Bob that he consider implementing an activity based costing system that will aid him in making future business decisions.

Based on your discussions with Bob regarding his business plan, you estimate the following costs and levels of activity for the coming year.

				Estimated activity by model type	
Activity Cost Pools	**Activity measures**		**Estimated cost**	**Model A**	**Model B**
Machine set-ups	# of batches	$	12,000	12	12
Wood working	# of machine hours	$	17,000	1,300	700
Assembling	# of units	$	90,000	4,800	1,200

Required: (Place all calculations and answers in Appendix D of Packet 2 (Appendices for Problem Solutions)

A. **Traditional Manufacturing Overhead:**

1. Calculate an overhead rate for the company as a whole based on the cost information provided and assuming all overhead is applied on the basis of machine hours.

2. Use the overhead rate calculated in part 1 to calculate the total amount of overhead that would be allocated to each model.

3. Using the amounts calculated in part 2, calculate the overhead per unit for each model. (Round to the nearest penny.)

4. Given the following information, calculate the product cost per unit for each model.

	Model A	**Model B**
Direct materials	$ 48	$ 55
Direct labor	$ 22	$ 33

B. **Activity Based Costing**

1. Calculate the activity rate for each cost pool.

2. Use the activity rates calculated in part 1 to determine the total amount of overhead that would be allocated to each model.

3. Using the amounts calculated in part 2, calculate the overhead per unit for each model. (Round to the nearest penny.)

4. Given the following information, calculate the product cost per unit for each model.

	Model A	Model B
Direct materials	$ 48	$ 55
Direct labor	$ 22	$ 33

C. **Explain why the overhead allocated to each model under ABC differs from the overhead allocated using a plant-wide overhead rate. Should Bob consider implementing Activity Based Costing?**

Appendix A

General Journal

Date	Description	Acct #	Debit	Credit
	August Entries			
8/1/2012	Cash	111	50,000	
	Common Stock	311		50,000
8/5/2012	Prepaid Rent	115	24,000	
	Cash	111		24,000
8/9/2012	Prepaid Insurance	117	6,600	
	Cash	111		6,600
8/23/2012	Office Equipment	142	14,700	
	Accounts Payable	211		14,700
8/28/2012	Cash	111	36,000	
	Note Payable	213		36,000
	September Entries			

Appendix A-- Continued

General Journal

Date	Description	Acct #	Debit	Credit
	Adjusting Entries-- Sept 30th			
	Closing Entries-- Sept 30			

Appendix A-- Continued

General Journal

Date	Description	Acct #	Debit	Credit
	October Entries			

Appendix A-- Continued

General Journal

Date	Description	Acct #	Debit	Credit

Appendix B

General Ledger T-Accounts

Chart of Accounts

Acct #	Account Title
111	Cash
113	Accounts Receivable
115	Prepaid Rent
117	Prepaid Insurance
118	Raw Materials Inventory
119	Work-In-Process Inventory
120	Finished Goods Inventory
121	Manufacturing Overhead
142	Office Equipment
143	Accumulated Depreciation- Office Equipment
144	Factory Equipment
145	Accumulated Depreciation- Factory Equipment
211	Accounts Payable
212	Wages Payable
213	Notes Payable
311	Common Stock
312	Retained Earnings
313	Income Summary
411	Sales
511	Cost of Goods Sold
514	Administrative Salary Expense
515	Administrative Utilities Expense
516	Administrative Rent Expense
517	Administrative Insurance Expense
521	Depreciation Expense- Office Equipment
522	Interest Expense

Note: Not every account will be used for every problem.

Cash #111

8/1 50,000	8/5 24,000
8/28 36,000	8/9 6,600
Bal 8/31 55,400	

Accounts Receivable # 113

Prepaid Rent #115

8/5 24,000	
Bal 8/31 24,000	

Prepaid Insurance #117

8/9 6,600	
Bal 8/31 6,600	

Raw Materials Inventory #118

Work-in-Process Inventory #119

Finished Goods Inventory # 120

Manufacturing Overhead # 121

Office Equipment #142

8/23 14,700	
Bal 8/31 14,700	

Accumulated Depreciation- Office Equipment #143

Factory Equipment #144

Accumulated Depreciation- Factory Equiment #145	

Accounts Payable # 211	
	8/23 14,700
	Bal 8/31 14,700

Wages Payable #212	

Notes Payable #213	
	8/28 36,000
	Bal 8/31 36,000

Common Stock #311	
	8/1 50,000
	Bal 8/31 50,000

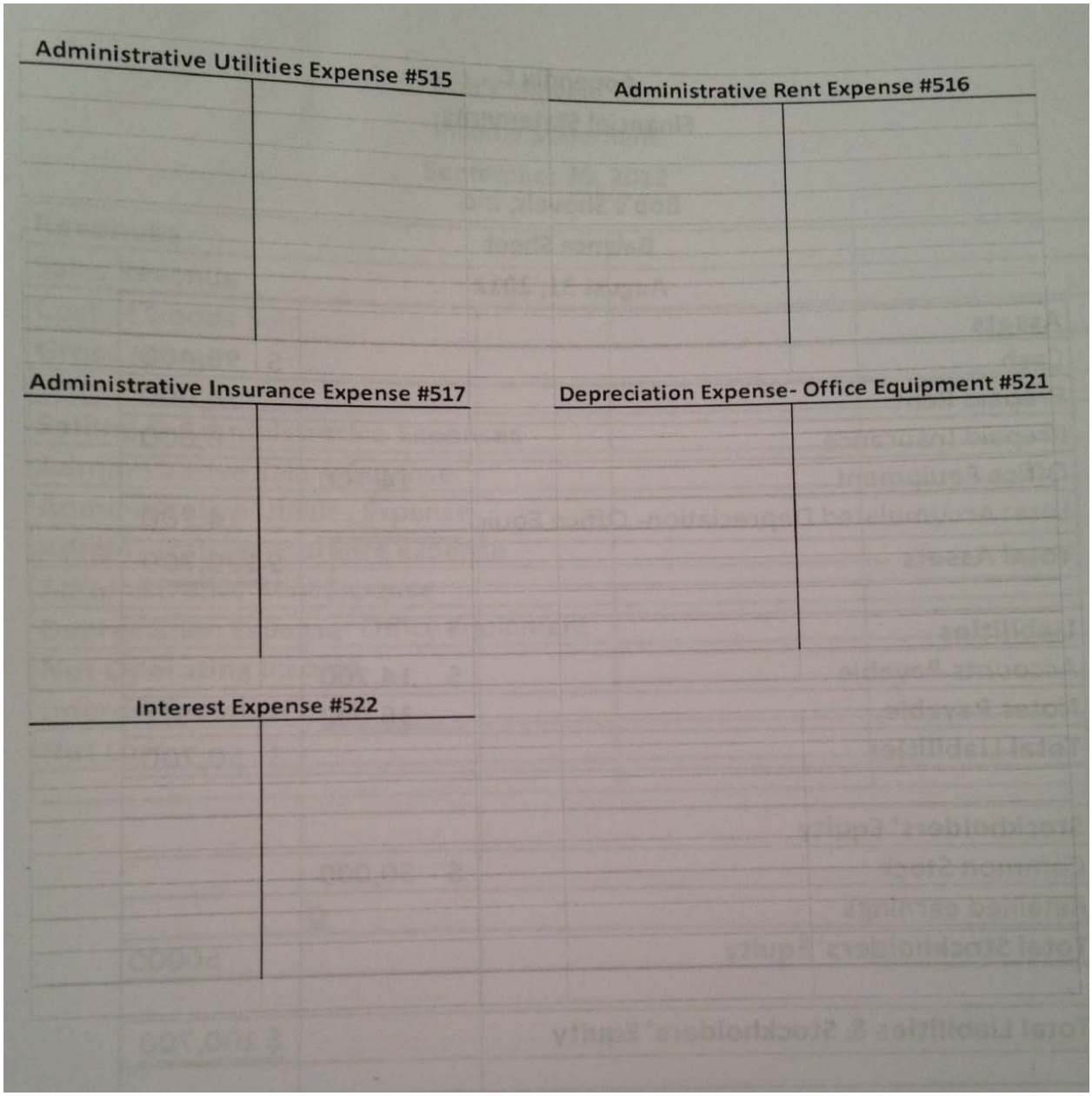
Retained Earnings #312	

Sales #411	

Income Summary #313	

Cost of Goods Sold #311	

Administrative Salary Expense #514	


Administrative Utilities Expense #515
Administrative Rent Expense #516
Administrative Insurance Expense #517
Depreciation Expense- Office Equipment #521
Interest Expense #522

Appendix C

Financial Statements

Bob's Shovels, Inc.

Balance Sheet

August 31, 2012

Assets		
Cash		$ 55,400
Prepaid Rent		24,000
Prepaid Insurance		6,600
Office Equipment	14,700	
Less: Accumulated Depreciation- Office Equip	-	14,700
Total Assets		$ 100,700
Liabilities		
Accounts Payable	$ 14,700	
Notes Payable	36,000	
Total Liabilities		$ 50,700
Stockholders' Equity		
Common Stock	$ 50,000	
Retained earnings	0	
Total Stockholders' Equity		50000
Total Liabilities & Stockholders' Equity		$ 100,700

Bob's Shovels, Inc.
Income Statement
September 30, 2012

Revenues		
Sales Revenue		
Cost of Goods Sold		
Gross Margin		
Selling & Administrative Expenses		
Administrative Salary Expense		
Administrative Utilities Expense		
Administrative Insurance Expense		
Administrative Rent Expense		
Depreciation Expense- Office Equipment		
Net Operating Income		
Interest Expense		
Net Loss		

Bob's Shovels, Inc.

Balance Sheet

September 30, 2012

Bob's Shovels, Inc.
Income Statement
October 31, 2012

Appendix D
Solution to Problem 3

Required:

A. Traditional Manufacturing Overhead

1. Company-wide overhead rate

   _____ per _____

   Calculation:

2. Total overhead allocated to Model A:_____
   Calculation:

   Total overhead allocated to Model B:_____
   Calculation:

3. Overhead per unit for Model A:_____
   Calculation:

   Overhead per unit of Model B:_____
   Calculation:

4. Given the following information, calculate the product cost per unit for each model.

	Model A	Model B
Direct materials	$ 48	$ 55
Direct labor	$ 22	$ 33

Model A: _____

Model B: _____

Calculations:

B. Activity Based Costing

1. Calculate the activity rate for each cost pool.

Machine set-ups: _____ per _____

Wood working: _____ per _____

Assembling: _____ per _____

Calculations:

2. Use the activity rates calculated in part 1 to determine the total amount of overhead that would be allocated to each model.

Model A: _____

Model B: _____

Calculations:

3. Using the amounts calculated in part 2, calculate the overhead per unit for each model.

Model A: _____

Model B: _____

Calculations:

4. Given the following information, calculate the product cost per unit for each model.

	Model A	Model B
Direct materials	$ 48	$ 55
Direct labor	$ 22	$ 33

Model A: _____

Model B: _____

Calculations:

5. Explain why Bob should consider implementing Activity Based Costing.