**Problem 15-23A - Analyzing operating leverage**

Norm Champion is a venture capitalist facing two alternative investment opportunities. He intends to invest $500,000 in a start-up firm. He is nervous, however, about future economic volatility. He asks you to analyze the following financial data for the past year’s operations of the two firms he is considering and give him some business advice.

|  |  |
| --- | --- |
|  | Company Name |
|  | Morton | Bailey |
| Variable Cost per Unit (a) |  $18 |  $9 |
| Sales Revenue ($10,000 units x $24) | $240,000 | $240,000 |
| Variable Cost (10,000 units x a) | (180,000) | ( 90,000) |
| Contribution Margin |  60,000 |  150,000 |
| Fixed Cost |  (30,000) |  120,000 |
| Net Income |  $30,000 | $ 30,000 |

**Required**

1. Use the contribution margin approach to compute the operating leverage for each firm.
2. If the company expands in coming years, Morton and Bailey will both enjoy a 10 percent per year increase in sales, assuming that the selling prices remains unchanged. Compute the change in net income for each firm in dollar amount and in percentage. (Note: Since the number of units increases, both revenue and variable cost will increase.)
3. If the company contracts in coming years, Morton and Bailey will both suffer10 percent decrease in sales volume, assuming that the selling price remains unchanged. Compute the change in the net income for each fir in dollar amount and in percentage. (Note: Since the number of units decreases, both total revenue and total variable cost will decrease.)
4. Write a memo to Norm Champion with your analyses and advice.

**Check figures**: b. % of change for Bailey: (50); c. % of change for Morton: (20)

**Problem 16-15A – Cost accumulation and allocation**

Belcher Manufacturing Company makes two different products, M and N. The company’s two departments are names after the products; for example, Product M is made in Department M. Belcher’s accountant has identified the following annual cost associated with these two products.

|  |
| --- |
| Financial Data |
| Salary of vice president of production division | $ 90,000 |
| Salary of supervisor Department M |  38,000 |
| Salary of supervisor Department N |  28,000 |
| Direct materials cost Department M |  150,000 |
| Direct materials cost Department N |  210,000 |
| Direct labor cost Department M |  120,000 |
| Direct labor cost Department N |  340,000 |
| Direct utilities cost Department M |  60,000 |
| Direct utilities cost Department N |  12,000 |
| General Factory-wide utilities |  18,000 |
| Production supplies |  18,000 |
| Fringe Benefits |  69,000 |
| Depreciation |  360,000 |
| **Non-financial data** |  |
| Machine hours Department M |  5,000 |
| Machine hours Department M |  1,000 |

**Required**

1. Identify the costs that are (1) direct costs of Department M, (2) direct cost of Department N, and (3) indirect costs.
2. Select the appropriate cost drivers for the indirect costs and allocate these costs to Department M and N.
3. Determine the total estimated cost of the products made in Departments M and N. Assume that Belcher produced 2,000 units of Product M and 4,000 units of Product N during the year. If Belcher prices its products at cost plus 30 percent of cost, what price per unit must it charge for Product M and for Product N?

**Check Figure: a. (2) $590,000**

**Problem 17-18** – Manufacturing cost flow for one accounting cycle

The following trial balance was taken from the records of Maetz Manufacturing at the beginning of 2004.

|  |  |  |
| --- | --- | --- |
| Cash | $ 3,000 |  |
| Raw Materials Inventory |  750 |  |
| Work in Process Inventory |  1,200 |  |
| Finished Goods Inventory |  2,100 |  |
| Property, Plant, and Equipment |  7,500 |  |
| Accumulation Depreciation |  | $ 3,000 |
| Common Stock |  |  5,400 |
| Retained Earnings | \_\_\_\_\_\_\_ |  6,150 |
| Total | $14,550 | $14,550 |

Transactions for the accounting period

1. Maetz purchased $5,700 of direct raw materials and $300 of indirect raw materials on account. The indirect materials are capitalized in the Production Supplies account. Materials requisitions showed that $5,400 of direct raw materials had been used for production during the period. The use of indirect materials is determined at the end of the year by physically counting the supplies on hand.
2. By the end of the year, $5,250 of the accounts payable had been paid in cash.
3. During the year, direct labor amounted to 950 hours recorded in the Wages Payable account at $10.50 per hour.
4. By the end of the year, $9,000 of wages payable had been paid in cash.
5. At the beginning of the year, the company expected overhead cost for the period to be $6,300 and 1,000 direct labor hours to be worked. Overhead is allocated based on direct labor hours, which, as indicated in Event 3, amounted to 950 for the year.
6. Administrative and sales expenses for the year amounted to $900 paid in cash.
7. Utilities and rent for production facilities amounted to $4,650 paid in cash.
8. Depreciation on the plan and equipment used in production amount to $1,500.
9. Assume that $12,000 of goods were completed during the year.
10. Assume that $12,750 of finished goods inventory was sold for $18,000 cash.
11. A count of the production supplies revealed a balance of $89 on hand at the end of the year.
12. Any over- or under-applied overhead is considered to be insignificant.

**Required**

1. Open T-accounts with the beginning balances shown in the preceding list and record all transactions for the year including closing entries in the T-accounts. (Note: Open new t-accounts as needed.)
2. Prepare a schedule of cost of goods manufactured and sold, an income statement, a balance sheet and a statement of cash flows for the 2004 accounting period.

**Check Figure**: NI $3,974

**Problem 18-20A – Process Cost System**

Royal Cola Corporation produces a new soft drink brand, Sweet Spring, using two production departments, mixing and bottling. Royal’s beginning balances and data pertinent to the mixing department’s activities for 2005 follow.

|  |  |
| --- | --- |
| **Account** | **Beginning Balances** |
|  |  |
| **Cash** | **$ 45,000** |
| **Raw Materials Inventory** |  **14,800** |
| **Production Supplies** |  **400** |
| **Work in Process Inventory (4000,000 units)** |  **40,000** |
| **Common Stock** |  **100,200** |

1. Royal Cola issued additional common stock for $54,000 cash.
2. The company purchased raw materials and production supplies for $29,600 and $800, respectively, in cash.
3. The company issued $40,000 of raw materials to the mixing department for the production of 800,000 units of Sweet Spring that were started in 2005. A unit of soft drink is the amount needed to fill a bottle.
4. The mixing department used 2,700 hours of labor during 2005, consisting of 2,500 hours for direct labor and 200 hours of indirect labor. The average wage was $9.60 per hour. All wages were paid in 2005 in cash.
5. The predetermined overhead rate was $1.60 per direct labor hour.
6. Actual overhead costs other than indirect materials and indirect labor for the year amounted to $1,440, which was paid in cash.
7. The mixing department completed 600,000 units of Sweet Spring. The remaining inventory was 50 percent complete.
8. The completed soft drink was transferred to the bottling department.
9. The ending balance in the Production Supplies account was $560.

**Required**

1. Determine the number of equivalent units of production.
2. Determine the product cost per equivalent unit.
3. Allocate the total cost between the ending work in process inventory and units transferred to the bottling department.
4. Record the transaction in T-accounts.

**Check figure: b. $0.12**