

Examination: 5075 „Management Accounting VI“

Fall Term 2003/04

Examiner: Dr Barbara Pirchegger

The following aids can be used: calculator, ruler

Examination questions: solve 6 out of 6

1. Ballpark Concessions currently sells hot dogs. During a typical month, the stand reports a profit of \$9,000 with sales of \$50,000, fixed costs of \$21,000, and variable costs of \$0.64 per hot dog.

Next year, the company plans to start selling nachos for \$3 per unit. Nachos will have a variable cost of \$0.72 and new equipment and personnel to produce nachos will increase monthly fixed costs by \$8,808. Initial sales of nachos should total 5,000 units. Most of the nacho sales are anticipated to come from current hot dog purchasers, therefore, monthly sales of hot dogs are expected to decline to \$20,000.

After the first year of nacho sales, the company president believes that hot dog sales will increase to \$33,750 a month and nacho sales will increase to 7,500 units a month.

Required (15 points):

- a. Determine the monthly breakeven sales in dollars before adding nachos.
- b. Determine the monthly breakeven sales during the first year of nachos sales, assuming a constant sales mix of 1 hotdog and 2 units of nachos.

2. Ireland Corporation planned to be in operation for three years.

- During the first year, 20x1, it had no sales but incurred \$120,000 in variable manufacturing expenses and \$40,000 in fixed manufacturing expenses.
- In 20x2, it sold half of the finished goods inventory from 20x1 for \$100,000 but it had no manufacturing costs.
- In 20x3, it sold the remainder of the inventory for \$120,000, had no manufacturing expenses and went out of business.
- Marketing and administrative expenses were fixed and totaled \$20,000 each year.

Required (12 points):

- a. Prepare an income statement for each year using absorption costing.
- b. Prepare an income statement for each year using variable costing.

please turn!

3. Computer Products produces two keyboards, Regular and Special. Regular keyboards have a unit contribution margin of \$128, and Special keyboards have a unit contribution margin of \$720. The demand for Regulars exceeds Computer Product's production capacity, which is limited by available machine-hours and direct manufacturing labor-hours. The maximum demand for Special keyboards is 80 per month. Management desires a product mix that will maximize the contribution margin.

Direct manufacturing labor is limited to 1,600 hours a month and machine-hours are limited to 1,200 a month.

The Regular keyboards require 20 hours of labor and 8 machine-hours.

Special keyboards require 34 labor-hours and 20 machine-hours.

Required (16 points):

- a. What is the optimal production mix for Computer products?
- b. Compute the resulting contribution margin!

4. The following data for the Alma Company pertain to the production of 1,000 urns during August.

Direct Materials (all materials purchased were used):

Standard cost: \$6.00 per pound of urn.

Total actual cost: \$5,600.

Standard cost allowed for units produced was \$6,000.

Materials efficiency variance was \$120 unfavorable.

Direct Manufacturing Labor:

Standard cost is 2 urns per hour at \$24.00 per hour.

Actual cost per hour was \$24.50.

Labor efficiency variance was \$336 favorable.

Required (20 points):

- a. What is standard direct material amount per urn?
- b. What is the direct material price variance?
- c. What is the total actual cost of direct manufacturing labor?
- d. What is the labor price variance for direct manufacturing labor?

5. Brilliant Accents Company manufactures and sells three styles of kitchen faucets: Brass, Chrome, and White. Production takes 25, 25, and 10 machine hours to manufacture 1000-unit batches of brass, chrome and white faucets, respectively. The following additional data apply:

	<u>BRASS</u>	<u>CHROME</u>	<u>WHITE</u>
Projected sales in units	#30,000	#50,000	#40,000
<u>PER UNIT data:</u>			
Selling price	\$40	\$20	\$30
Direct materials	\$ 8	\$ 4	\$ 8
Direct labor	\$15	\$ 3	\$ 9
Overhead cost based on direct labor hours (traditional system)	\$12	\$ 3	\$ 9
<u>Hours per 1000-unit batch:</u>			
Direct labor hours	40	10	30
Machine hours	25	25	10
Setup hours	1.0	0.5	1.0
Inspection hours	30	20	20

Total overhead costs and activity levels for the year are estimated as follows:

<u>Activity</u>	<u>Overhead costs</u>	<u>Activity levels</u>
Direct labor hours		2,900 hours
Machine hours		2,400 hours
Setups	\$465,500	95 setup hours
Inspections	<u>\$405,000</u>	2,700 inspection hours
	<u>\$870,500</u>	

Required (25 points):

- a. Using the traditional system, determine the operating profit per unit for each style of faucet.
- b. Determine the activity-cost-driver rate for setup costs and inspection costs.
- c. Using the ABC system, for each style of faucet
 1. compute the estimated overhead costs per unit.
 2. compute the estimated operating profit per unit.
- d. Explain the differences between the profits obtained from the traditional system and the ABC system. Which system provides a better estimate of profitability? Why?

please turn!

6. Harry's Picture manufactures various picture frames. Each new employee takes 5 hours to make the first picture frame and 4 hours to make the second. The manufacturing overhead charge per hour is \$20.

Required (17 points):

- a. What is the learning-curve percentage, assuming the cumulative average method?
- b. What is the time needed to build 8 picture frames by a new employee using the cumulative average-time method?

Remember that:

$$y = aX^b$$

y = Cumulative average labor hours per unit

X = Cumulative number of units produced

a = Labor hours required to produce the first unit

$$b = \frac{\ln(\text{learning - curve \% in decimal form})}{\ln 2}$$

- c. What is the time needed to produce the 16th frame by a new employee using the incremental unit-time method? You may use an index of -0.3219.
- d. How much manufacturing overhead would be charged to the 16 picture frames using the average-time approach?