

## CHAPTER 8: ACTIVITY BASED COSTING

### QUESTION 1

The Glavine Corporation manufactures and sells packaging machines. It recently used an activity-based approach to refine the job-costing system at its Colorado plant. The resulting job-costing system has one direct-cost category (direct materials) and four indirect manufacturing cost pools. These four indirect manufacturing cost pools and their allocation bases were chosen by a team of product designers, manufacturing personnel and marketing personnel:

<u>Indirect manufacturing cost pools</u>	<u>Cost-allocation bases</u>	<u>Budgeted cost-allocation rate</u>
1. Material handling	Component parts	\$6 per part
2. Machining	Machine-hours	\$24 per hour
3. Assembly	Assembly-hours	\$60 per hour
4. Inspection	Inspection hours	\$125 per hour

Cola Supreme recently purchased 80 can packaging machines from the Glavine Corporation. Each machine has direct materials costs of \$3,000, requires 50 component parts, 10 machine-hours, 15 assembly-hours, and 4 inspection-hours. Compute the manufacturing **cost of each machine** and the **total manufacturing cost** of the Cola Supreme job using the Activity Based Costing (ABC) system.

### QUESTION 2

Kaplan, Inc. produces two products, Small and Large. Central costs are allocated to the two products in various ways. Advertising expense is \$300,000 and it is allocated on the basis of sales. Total payroll processing costs are \$96,000 and they are allocated on the basis of number of employees. Total rent expense is \$120,000 and it is allocated on the basis of square footage. There were no beginning or ending inventory. Relevant information for the current month is presented below:

	<u>Small</u>	<u>Large</u>
Square footage	6,000	18,000
Number of employees	1,020	580
Number of units produced	5,000	1,500
Sales	\$400,000	\$2,000,000
Direct materials cost	\$100,000	\$ 800,000
Direct labor cost	\$220,000	\$ 750,000

- Calculate the **total cost** of each product lines.
- Calculate the **operating income** for the current month.

### QUESTION 3

Kaplan, Inc. has two departments, Small and Large. Central costs are allocated to the two departments in various ways. Relevant information is presented below:

	<u>Small</u>	<u>Large</u>
Square footage	6,000	18,000
Number of employees	1,120	480
Sales	\$400,000	\$2,000,000

- If total advertising expense is \$300,000 and it is allocated on the basis of sales, How much is the amount allocated to each department.
- If total payroll processing costs are \$96,000 and they are allocated on the basis of number of employees, How much is the amount allocated to each department.
- If total rent expense is \$120,000 and it is allocated on the basis of square footage, How much is the amount allocated to each department.

**QUESTION 4**

Kline Company manufactures two products, X and Y. Kline Company uses activity based costing. Its costing system has two direct cost categories and three indirect cost pools. Three activities have been identified as cost drivers and the related costs pooled together to arrive at the following information:

Product	Number of Material Requisitions	Number of Product Inspections	Number of Orders Shipped
X	24	100	420
Y	36	100	280
Costs per pool	\$15,600	\$46,300	\$17,500

Product	Direct material costs	Direct labor costs
X	\$85,000	\$75,000
Y	100,000	90,000

Compute the manufacturing costs of each product line.

**QUESTION 5**

Tracky Company manufactures three models of pens, Model A, B and C. Tracky Company uses activity based costing. Its costing system has two direct cost categories and three indirect cost pools. Three activities have been identified as cost drivers and the related indirect manufacturing costs pooled together to arrive at the following information:

Product	Number of unit produced	Number of Shipments	Number of Components	Number of direct labor hour
Model A	200,000	35	250	1,500
Model B	100,000	30	400	2,000
Model C	100,000	50	300	1,600

Activity	Costs	Cost allocation base
Shipments	\$29,900	Number of shipments
Assembly	\$45,600	Components
Inspection	\$15,300	Direct labor hour

Total direct material costs are \$84,400, \$120,000 and \$138,800 for model A, B and C respectively. Direct labor cost is \$20 per direct labor hour.

Compute the unit manufacturing costs of each product.

**QUESTION 6**

Singleton Company manufactures household items sold at trade shows. The items, classified as either Product A or Product B, are manufactured on a common assembly line. Singleton Company uses Activity based costing. The following relationships between production costs and some of the indirect manufacturing activities for July 2002, along with the production data for the two product lines:

Activity	Cost Driver	Allocation Rate	Activity used in	
			Product A	Product B
Material handling	Number of parts	\$2.00 per part	700	500
Machining	Machine hours	\$30.00 per hour	200	100
Assembly	Units started	\$3.20 per unit	600	700
Inspection	Number tested	\$4.00 per unit	200	600

Direct costs:

Labor	\$24,000	\$18,000
Materials	\$7,880	\$5,000

Determine the total production cost of each of the two product lines for July and the cost per unit, assuming all units started were completed.