

VII. Categorías, Flujos y Asignación de Costos

Exercise 11- 3A

Event No.	Balance Sheet					Income Statement		
	Assets	=	Liab.	+ Com. Stk.	+ Ret. Ear.	Rev.	- Exp.	= Net Inc.
a.	I D	=	NA	+ NA	+ NA	NA	NA	= NA
b.	I	=	NA	+ NA	+ I	I	NA	= I
c.	I D	=	NA	+ NA	+ NA	NA	NA	= NA
d.	I	=	NA	+ NA	+ I	NA	D	= I
e.	I D	=	NA	+ NA	+ NA	NA	NA	= NA
f.	I D	=	NA	+ NA	+ NA	NA	NA	= NA
g.	D	=	NA	+ NA	+ D	NA	I	= D
h.	I D	=	NA	+ NA	+ NA	NA	NA	= NA

Exercise 11-4A

a.

Raw Materials		Work in Process		Finished Goods	
Bal. 56,000	248,000	Bal. 84,000	612,000	Bal. 28,000	602,000
240,000		M 248,000		612,000	
Bal. 48,000		L 324,000		Bal. 38,000	
		OH 48,000			
		Bal. 92,000			

Exercise 11-4A (continued)

b.

Cooper Corporation	
Cost of Goods Manufactured and Sold Schedule	
For 2011	
Beginning raw materials inventory	\$ 56,000
Purchases	240,000
Raw materials available	296,000
Ending raw materials inventory	(48,000)
Raw materials used	248,000
Labor	324,000
Manufacturing overhead	48,000
Total manufacturing costs	620,000
Beginning work in process inventory	84,000
Total work in process inventory	704,000
Ending work in process inventory	(92,000)
Cost of goods manufactured	612,000
Beginning finished goods inventory	28,000
Goods available for sale	640,000
Ending finished goods inventory	(38,000)
Cost of goods sold	\$ 602,000

Cooper Corporation	
Income Statement	
For 2011	
Sales Revenue	\$800,000
Cost of Goods Sold	(602,000)
Gross Margin	198,000
Selling and Administrative Expenses	(72,000)
Net Income	\$126,000

Exercise 11- 7A

a. Total estimated overhead cost / Total estimated machine hours

$$\text{Overhead} = \$192,000 + \$21,000 + \$34,000 + \$15,000 + \$45,000 + \$40,000 + \$132,000 = \$500,000$$

$$\$500,000/125,000 = \$4 \text{ per machine hour}$$

b. $\$4 \times 140,000$ actual machine hours = \$560,000 of overhead applied to work in process.

Exercise 11-12A

<u>Raw Mat. Inventory</u>		<u>WIP Inventory</u>	
30,000	(a) 22,000	(a) 22,000	8,000
		16,000	
8,000		12,000	
		(c) 42,000	

<u>Finished Goods Inventory</u>		<u>Cost of Goods Sold</u>	
8,000	(d) 7,000	(d) 7,000	
		1,000 adj.	
1,000		(e) 8,000	

<u>Manufacturing Overhead</u>	
(b) 13,000	12,000
1,000	1,000 adj.

Problem 11-17A

Event	Assets					=	Equity		Rev. - Exp. = N. Inc.			
	No.	Cash	+ MOH	+ Raw M.	+ WIP	+ F. Goods	=	Com. Stk.	+ Ret. Ear.			
BB	5,000	+ NA	+ 1,200	+ 800	+ 2,000	=	4,500	+ 4,500	NA	NA	=	NA
1.	(2,880)	+ NA	+ 2,880	+ NA	+ NA	=	NA	+ NA	NA	NA	=	NA
2.	NA	+ NA	+ (3,750)	+ 3,750	+ NA	=	NA	+ NA	NA	NA	=	NA
3.	(2,880)	+ NA	+ NA	+ 2,880	+ NA	=	NA	+ NA	NA	NA	=	NA
4.	NA	+ (2,970)	+ NA	+ 2,970	+ NA	=	NA	+ NA	NA	NA	=	NA
5.	(3,000)	+ 3,000	+ NA	+ NA	+ NA	=	NA	+ NA	NA	NA	=	NA
6.	NA	+ NA	+ NA	+ (7,680)	+ 7,680	=	NA	+ NA	NA	NA	=	NA
7.	(1,400)	+ NA	+ NA	+ NA	+ NA	+ NA	+ (1,400)	NA	1,400	=	(1,400)	
8a.	9,600	+ NA	+ NA	+ NA	+ NA	=	NA	+ 9,600	9,600	NA	=	9,600
8b.	NA	+ NA	+ NA	+ NA	+ (7,632)*	=	NA	+ (7,632)	NA	7,632	=	(7,632)
9.	NA	+ (30)	+ NA	+ NA	+ NA	=	NA	+ (30)	NA	30	=	(30)
Total	4,440	+ 0	+ 330	+ 2,720	+ 2,048	=	4,500	+ 5,038	9,600	9,062	=	538

a. $*\$6.25 \times 320 + [\$6.40 \times (1,200 - 320)] = \$7,632$

b.

Fulton Manufacturing Company Financial Statements for 2011					
Cost of Goods Manf. and Sold		Income Statement		Balance Sheet	
Beg. raw mat. inv.	\$ 1,200	Sales revenue	\$ 9,600	Assets	
Purchases	2,880	Cost of goods sold	(7,662)	Cash	\$4,440
Raw mat. avail.	4,080	Gross margin	1,938	Raw mat. inv.	330
End. raw mat. inv.	(330)	Sell. & admin. exp.	(1,400)	WIP inv.	2,720
Raw mat. used	3,750	Net income	<u>\$ 538</u>	Fin. goods inv.	2,048
Labor	2,880			Total assets	<u>\$9,538</u>
Overhead	3,000				
Total manf. costs	9,630			Equity	
Beg. WIP inv.	800			Common stock	\$4,500
Total WIP inv.	10,430			Retained earnings	5,038
End. WIP inv.	(2,720)			Total equity	<u>\$9,538</u>
Cost of goods man.	7,710				
Beg. fin. goods	2,000				
Goods available	9,710				
End. fin. goods	(2,048)				
Cost of goods sold	<u>\$7,662</u>				

ATC 11-1

- a. The overapplied Manufacturing Overhead would result in a credit balance for the manufacturing overhead account. Assuming that the ending inventory is immaterial, the credit balance would be closed into the Cost of Goods account (i.e., debit the Manufacturing Overhead account and credit Cost of Goods Sold) thus reducing the recorded amount of cost of goods sold.

The reduction in cost of goods sold, caused by the closing of the Manufacturing Overhead account, would increase net income. This phenomenon, however, does not actually increase the real net income because the amount previously recorded for cost of goods sold was based on a predetermined overhead rate that was too high. Closing the overapplied overhead into Cost of Goods Sold simply brings the balance in this account down to its correct amount, which in turn causes net income to increase to its correct amount. An additional impact of the manipulation is addressed in part c., below.)

- b. Estimated cost per meal under different assumptions:

Assuming that 280,000 meals would be produced:

$$\frac{\$720,000}{280,000} = \$2.57 \text{ per meal}$$

$$\text{Estimated cost per meal} = \$3.90 + \$2.40 + \$2.57 = \underline{\underline{\$8.87}}$$

Assuming that 300,000 meals would be produced:

$$\frac{\$720,000}{300,000} = \$2.40 \text{ per meal}$$

$$\text{Estimated cost per meal} = \$3.90 + \$2.40 + \$2.40 \\ = \underline{\underline{\$8.70}}$$

- c. Ms. Winters is overestimating cost, which in turn causes the company to price its goods higher than is necessary, thereby

increasing the chances that customers will buy their meals from a competitor who charges a lower price.

Exercise 5-2A

- a. Machine hours, number of service orders
- b. Sales dollars
- c. Number of setups, hour of machine configurations, labor hours
- d. Number of setups
- e. Number of hours or number of drawings
- f. Number of orders
- g. Number of units
- h. Number of workers, hours in training
- i. Square footage or hours of operation
- j. Number of unloads, number of products, number of shipments

Cost drivers other than the ones described above may be logical depending on the context in which the activity is assumed to take place.

Exercise 5-6A

a. & b.

Decoder P allocation:

Activity Pools	Cost	<i>Cost</i> <i>÷ Driver</i>	= Allocation Rate	<i>Weight</i> of Base	Allocated Cost
R&M-assembly machines	\$50,000	50,000	\$ 1.00	20,000	\$20,000
Programming cost	84,000	3,500	24.00	2,000	48,000
Software inspections	6,000	250	24.00	190	4,560
Product testing	8,000	2,500	3.20	1,400	4,480
Total allocated cost					\$77,040

Decoder Q allocation:

	Allocation Rate	Weight of Base	Allocated Cost
R&M-assembly machines	\$ 1.00	30,000	\$30,000
Programming cost	24.00	1,500	36,000
Software inspections	24.00	60	1,440
Product testing	3.20	1,100	3,520
Total allocated cost			\$70,960

Total cost: \$77,040 + \$70,960 = \$148,000

Exercise 5-7A

a.

Cost ÷ Cost Driver = Rate
 \$148,000 ÷ 37,000 = \$4 per direct labor hour

Product	Rate	x	Weight of Base	=	Allocated Cost
Decoder P	\$4	x	15,000	=	\$ 60,000
Decoder Q	4	x	22,000	=	88,000
			Total		\$148,000

b.

Decoder P Low Volume

Method	Allocated Cost	÷	Units	=	Cost per Unit
ABC	\$77,040	÷	20,000	=	\$3.85*
Labor hours	60,000	÷	20,000	=	3.00

Decoder Q High Volume

Method	Allocated Cost	÷	Units	=	Cost per Unit
ABC	\$70,960	÷	30,000	=	\$2.37*
Labor hours	88,000	÷	30,000	=	2.93*

*The figures are rounded.

- c. ABC assigns cost on the basis of activities used to produce a product. Since the high volume product used fewer programming hours, inspections, and tests, that product was assigned a lower amount of the overhead costs.

Problem 5-19A

- a. Overhead cost allocation under ABC:

	Unit	Batch	Product	Facility	Total
Cost pool	\$27,000	\$50,000	\$90,000	\$300,000	\$467,000
Cost drivers	# of units	# Setups	# Comm.	Mach. hrs.	
	12,000	50	25	1,500	
Rate	\$2.25	\$1,000	\$3,600	\$200	

Allocation for Model ZM					
	Unit	Batch	Product	Facility	Total
Weight	2,400	25	15	500	
x Rate	\$2.25	\$1,000	\$3,600	\$200	
Allocation	\$5,400	\$25,000	\$54,000	\$100,000	\$184,400
÷ # of Units	2,400	2,400	2,400	2,400	2,400
Cost/Unit	\$2.25	\$10.42	\$22.50	\$41.67	\$76.84

Allocation for Model DS					
	Unit	Batch	Product	Facility	Total
Weight	9,600	25	10	1,000	
x Rate	\$2.25	\$1,000	\$3,600	\$200	
Allocation	\$21,600	\$25,000	\$36,000	\$200,000	\$282,600
÷ # of units	9,600	9,600	9,600	9,600	9,600
Cost/Unit	\$2.25	\$2.60	\$3.75	\$20.83	\$29.43

Cost per Unit Computations:

Type of Product	Direct Materials	+	Direct Labor	+	Allocated Overhead	=	Total
Model ZM	\$20.00	+	\$28.00	+	\$76.84	=	\$124.84

Model DS	10.00	+	12.00	+	29.43	=	51.43
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Problem 5-19A (continued)

b.

	Model ZM	Model DS	Total
Price per unit	\$135.00	\$47.00	
Cost per unit	(124.84)	(51.43)	
Profit (Loss) / Unit	10.16	(4.43)	
x # of units	x 2,400	x 9,600	
Total profit (loss)	\$24,384	(\$42,528)	(\$18,144)

c.

	Model ZM	Model DS
Target price	\$130.00	\$45.00
Less: Profit margin (20%)	(26.00)	(9.00)
Target cost / unit	\$104.00	\$36.00

- d.** Management of the company can try different things to lower its cost per unit. The unit-level cost is directly correlated to production volume (units). The batch-level cost can also be highly correlated to production volume if management maintains the current level of batch sizes. The major opportunities for the company to decrease its per unit cost are to hold the product-level and facility-level cost constant and expand its production volume.

Under the preceding assumptions, the per unit cost at the unit level and the batch level for both products would remain the same. However, the per unit cost at product level and the facility level would decline because of the increased production volume.

For instance, the company is currently producing only one third of its capacity. (1,500 machine hours ÷ 4,500 machine hours = 1/3). It takes 0.125 machine hour to produce a unit. If the company is operating at full capacity, 36,000 units could be produced. Model ZM makes up 20% of the total units. Therefore, 7,200 units of Model ZM and 28,800 units of Model

DS could be produced. The following are the cost computations for the product-level activities and facility-level activities:

Problem 5-19A (continued)

Model ZM	Product	Facility
Allocated cost ¹	\$54,000	\$100,000
÷ # of units	7,200	7,200
Cost/Unit	\$7.50	\$13.89

Model DS	Product	Facility
Allocated cost ¹	\$36,000	\$200,000
÷ # of units	28,800	28,800
Cost/Unit	\$1.25	\$6.94

¹Refer to allocation tables in requirement a.

Total Overhead Cost per Unit									
	Unit	+	Batch	+	Product	+	Facility	=	Total
Model ZM	\$2.25	+	\$10.42	+	\$7.50	+	\$13.89	=	\$34.06
Model DS	2.25	+	2.60	+	1.25	+	6.94	=	13.04

Cost per unit computations:

Type of Product	Direct Materials	+	Direct Labor	+	Allocated Overhead	=	Total
Model ZM	\$20.00	+	\$28.00	+	\$34.06	=	\$82.06
Model DS	10.00	+	12.00	+	13.04	=	35.04

VIII. Análisis de Costos en la Toma de Decisiones

Exercise 3-5A

- a. Price = Target sales price per unit; N = number of units
Sales – Variable cost – Fixed cost = Profit
 $(\text{Price} \times 10,000) - (\$2.50 \times 10,000) - \$36,000 = \$20,000$
 $\text{Price} \times 10,000 = \$25,000 + \$36,000 + \$20,000$
 $\text{Price} = (\$81,000 \div 10,000) = \8.10
- b. Mote could reengineer its product so that it can be produced at a lower targeted cost. This would enable Mote to offer a competitive price while maintaining its profitability.

Exercise 3-10A

- a. = 5
- b. = 4
- c. = 6
- d. = 2
- e. = 3
- f. = 1

Exercise 3-11A

- a. Price = Sales price per unit; N = Number of units
 $(\text{Price} \times N) - (\text{Variable cost per unit} \times N) - \text{Fixed cost} = \text{Profit}$
 $\text{Price} (6,400 \text{ units}) - \$18 (6,400 \text{ units}) - \$161,400 = \$69,000$
 $\text{Price} (6,400 \text{ units}) = \$345,600$
Price = \$54 per unit
- b. Contribution margin income statement using new equipment:

Sales (\$54 x 6,400 units)	\$345,600
Variable costs (\$16 x 6,400 units)	(102,400)
Contribution margin	\$243,200
Fixed cost (\$161,400 + \$9,000)	(170,400)
Net Income	\$ 72,800

Naylor Company should invest in the new equipment because profitability would increase by \$3,800 (\$72,800 – \$69,000).

Exercise 3-12A

Begin by determining the break-even point and budgeted sales in dollars:

Break-even = Fixed cost ÷ Contribution margin per unit

Break-even = \$176,000 ÷ (\$38 – \$16)

Break-even = 8,000 units

Break-even sales = \$38 x 8,000 units = \$304,000

Budgeted sales = \$38 x 21,000 = \$798,000

Margin of safety computations:

$$\begin{aligned} \text{Margin of safety} &= \frac{\text{Budgeted sales} - \text{Break-even sales}}{\text{Budgeted sales}} \\ \text{Margin of safety} &= \frac{\$798,000 - \$304,000}{\$798,000} \\ \text{Margin of safety} &= 61.90\% \end{aligned}$$

ATC 3-6

Screen capture of cell values:

4	Bishop Company Forecast for December, 2010	
5	Selling price per unit	\$ 18.00
6	Variable costs per unit	12.00
7	Fixed costs	\$ 60,000
8	Units sold	20,000
9		
10	Bishop Company	
11	Income Statement	
12	For the month of December, 2010	
13		
14	Sales	\$ 360,000
15	Variable costs	240,000
16	Contribution margin	120,000
17	Fixed costs	60,000
18	Net income	\$ 60,000
19		
20		
21	Break-even in units	10,000
22	Operating leverage	2.00

The screenshot shows the same data as the table above, but with formulas visible in the right column (D). The formulas are as follows:

4	Bishop Company Forecast	
5	Selling price per unit	18
6	Variable costs per unit	12
7	Fixed costs	60000
8	Units sold	20000
9		
10	Bishop Company	
11	Income Statement	
12	For the month of December, 2006	
13		
14	Sales	=D5*D8
15	Variable costs	=D6*D8
16	Contribution margin	=D14-D15
17	Fixed costs	=D7
18	Net income	=D16-D17
19		
20		
21	Break-even in units	=D7/(D5-D6)
22	Operating leverage	=D16/D18

Exercise 6-1A

Cost Item	Relevance	Behavior
Cost per box	Relevant	Variable
Sales commissions per box	Irrelevant	Variable
Rent of display space	Irrelevant	Fixed
Advertising	Relevant	Fixed

Since the rental costs do not differ between the alternatives, they cannot be avoided regardless of which alternative is chosen. Accordingly, these costs are not relevant.

Exercise 6-3A

a.

Fixed Costs	Bracelet A	Bracelet B
Advertising cost	\$ 8,000	\$ 6,000
Depreciation on existing equipment	5,000	4,000
Total fixed costs	\$13,000	\$10,000

b.

Variable Costs	Bracelet A	Bracelet B
Cost of materials per unit	\$25	\$ 32
Cost of labor per unit	32	32
Total variable costs	\$57	\$64

c.

Avoidable Costs	Bracelet A	Bracelet B
Cost of materials per unit	\$ 25	\$ 32
Advertising cost	8,000	6,000

Exercise 6-8A

- a. The unit-level costs increase and decrease in direct proportion with changes in the number of units sold and produced. Accordingly, these costs are variable costs. The variable cost per unit is computed by dividing the total unit-level costs by the

number of units ($\$150,000 \div 10,000 \text{ units} = \15 per unit .) The contribution margin per unit for the special order is \$2 ($\$17 \text{ special order price} - \$15 \text{ variable costs}$). Since the special order will produce a positive contribution to profit, the order should be accepted assuming that Shenyang has enough excess capacity to produce additional units of the product without affecting its existing sales.

b.

Incremental revenue ($\$17 \times 4,000 \text{ units}$)	\$68,000
Variable costs ($\$15 \times 4,000 \text{ units}$)	60,000
Contribution to profit	<u>\$ 8,000</u>

Exercise 6-10A

- a. The maximum amount that Lunn would be willing to pay is the amount of production costs that could be avoided if production were stopped. In other words, the cost of buying the engines must be equal to or less than the avoidable cost of making them. Accordingly, the question can be answered by calculating the per unit avoidable cost of production. The cost of the depreciation on equipment cannot be avoided because it is a sunk cost that has already been incurred. Corporate-level facility-sustaining cost will be incurred regardless of whether engines are purchased or manufactured. Accordingly, the allocated portion of corporate-level facility-sustaining costs does not differ between the alternatives and is not avoidable. The relevant (avoidable) costs are as follows:

Avoidable Costs for Lawn Mower Engines	
Cost of materials (15,000 units x \$24)	\$360,000
Labor (15,000 units x \$26)	390,000
Production supervisor's salary	85,000
Rental cost of equipment used to make engines	23,000
Total cost to make 15,000 engines	<u>\$858,000</u>
Cost per unit ($\$858,000 \div 15,000 \text{ units}$)	\$57.20

Exercise 6-10A (continued)

The maximum amount that Lunn would be willing to pay to purchase engines would be \$57.20 per unit.

- b. The avoidable cost per unit would decrease because the fixed costs (supervisor's salary and rental cost of equipment) would be spread over more units. At 18,750 units, the fixed cost per unit would be \$5.76 $[(\$85,000 + \$23,000) \div 18,750]$. Total avoidable cost per unit would be: \$5.76 fixed cost + \$24.00 materials cost + \$26.00 labor cost = \$55.76. The higher level of production would reduce the maximum price that Lunn would be willing to pay to outsource the engines.

Exercise 6-9A

The allocated facility-sustaining costs are not avoidable because they will be incurred regardless of whether the handlebars are made or outsourced. The relevant (avoidable) costs are shown below:

Item	Per Unit	Total
Cost of materials	\$18	\$108,000
Cost of labor	12	72,000
Overhead	3	18,000
Total cost	\$33	\$198,000

The analysis does not support the president's conclusion. Since it would cost more to buy the handlebars (\$35 versus \$33), Roaming would be better off to continue to make the handlebars.

Exercise 6-14A

- a. By holding on to his business, Mr. Denmark is losing the opportunity to sell it. Accordingly, the opportunity cost of owning and operating the independent business is \$73,000.
- b. Mr. Denmark can continue to operate his independent taxi company. Alternatively, he can sell the business, invest the proceeds, and go to work as a dispatcher. The financial considerations of the two alternatives are shown below:

Decision	Independent Business	Work As Dispatcher
Opportunity cost	\$(73,000)	
Cost of investment		\$(73,000)
Business income	36,000	
Investment income (\$73,000 x .10)		7,300
Salary		31,000

The opportunity cost and the cost of the investment are not relevant because they do not differ between the alternatives. Accordingly, the differential revenue constitutes the relevant information. Since Mr. Denmark can earn more by working as a dispatcher (\$38,300 as dispatcher versus \$36,000 with independent business), the analysis suggests that he should sell his business.

- c. From a qualitative perspective, Mr. Denmark may prefer to keep his business. His current business offers independence (no boss) and job security. These factors may be worth the financial sacrifices associated with working more hours for less money.

IX. Presupuesto

Exercise 7-1A

Ms. Huffman appears to be a person with an attitude problem. She does not understand how to involve her colleagues in the budgeting process. She degrades their input and uses the budget as a tool for criticism. In so doing, Ms. Huffman has failed to gain the support of upper-level management. The attitudes of upper-level management will have a significant impact on the effectiveness of the budget. Subordinates develop a keen awareness of management's expectations. If upper-level managers degrade, make fun of, or ignore the budget, subordinates will rapidly follow suit. If budgets are used to humiliate or embarrass subordinates, they will resent the treatment and the budgeting process that enables it. To be effective, upper-level management

must accept and portray the budget as a sincere effort to express realistic goals that employees will be expected to accomplish. The proper atmosphere is essential to budgeting success. Once a negative pattern has been established, it is difficult to change. Perhaps the most effective solution in this case is to replace Ms. Huffman.

Exercise 7-2A

a.

Sales Budget	January	February	March
Cash sales	\$ 40,000	\$ 44,000	\$ 48,400
Sales on account	100,000	110,000	121,000
Total budgeted sales	\$140,000	\$154,000	\$169,400

b. The amount of sales revenue appearing on the 1st quarter income statement is the sum of the monthly amounts (\$140,000 + \$154,000 + \$169,400 = \$463,400).

Exercise 7-7A

a.

Inventory Purchases Budget	January	February	March
Budgeted cost of goods sold	\$50,000	\$ 54,000	\$60,000
Plus: Desired ending inventory	5,400	6,000	7,500
Total inventory needed	55,400	60,000	67,500
Less: Beginning inventory	5,000	5,400	6,000
Required purchases (on account)	\$50,400	\$ 54,600	\$61,500

b. The amount of cost of goods sold appearing on the first quarter pro forma income statement is the sum of the monthly amounts (\$50,000 + \$54,000 + \$60,000 = \$164,000).

c. Since the quarter ends on March 31, the ending inventory for March is also the ending inventory for the quarter, \$7,500.

Exercise 8-3A

	Price/Cost per Unit	a. Master Budget 2,000 Units	b. Flexible Budget 2,200 Units
Sales	\$8.00	\$16,000	\$17,600
Variable manufacturing	\$4.00	(8,000)	(8,800)
Contribution margin		8,000	8,800
Fixed manufacturing		(3,000)	(3,000)
Fixed selling and admin.		(1,000)	(1,000)
Net income		\$ 4,000	\$ 4,800

Exercise 8-6A

	Flexible Budget 40,000 Hours	Flexible Budget 45,000 Hours	Flexible Budget 50,000 Hours
Sales (\$125/hr)	\$5,000,000	\$5,625,000	\$6,250,000
Variable costs (\$48/hr)	(1,920,000)	(2,160,000)	(2,400,000)
Contribution margin	3,080,000	3,465,000	3,850,000
Fixed costs	(1,500,000)	(1,500,000)	(1,500,000)
Net income	\$1,580,000	\$1,965,000	\$2,350,000

X. Evaluación del Desempeño en una Organización

Exercise 9-6A

- a. Individual stores of Lovely Toys Corporation are profit centers because their responsibility is mainly to sell products provided by the headquarters for the highest profit. Because store managers do not control product cost, they should not be evaluated based on cost of goods sold. They do not have the authority to make investment decisions, so they should not be evaluated based on return on investment. Accordingly, return on sales is the best performance measure.

- b. A balanced scorecard includes both financial and nonfinancial measures. While return on sales is a good measure for the performance evaluation of individual stores, it does not reflect how well the customers feel about the service provided by the salespeople in individual stores and whether the customers will likely return to the same store for future business. A customer satisfaction survey can shed some light on this particular aspect of store performance.

Employee turnover measures whether store staff members are happy and willing to continue working for the company. If turnover is high, the store cannot provide good customer service because employees do not plan to stay with the store for the long run and will not have enough experience with their jobs. If salespeople cannot do their jobs well, customers won't be happy. The future sales of the store will be negatively affected. Also, high turnover increases the cost of employee training. As an example, Lovely Toys can set up a balanced scorecard for performance evaluation including return on sales, customer satisfaction, and employee turnover. The approach enables Ms. Elliott to take a broader view of individual stores' performances.

Exercise 9-10A

- a. Division A: Residual income = $\$15,040 - (18\% \times \$63,000) = \$3,700$
Division B: Residual income = $\$8,100 - (18\% \times \$45,000) = \$0$
- b. Division A had residual income of \$3,700 and Division B had no residual income. Therefore, Division A increased the company's overall ROI and was more profitable.

Exercise 9-12A

525000

Current RI:

$$(\$7,500,000 \times 20\%) - (\$7,500,000 \times 15\%) = \$375,000$$

New RI if the investment opportunity is adopted:

$$[(\$7,500,000 + \$5,000,000) \times 19.2\%] - [(\$7,500,000 + \$5,000,000) \times 15\%]$$

$$= \$525,000$$

Because the new residual income is greater than the current residual income, the Wade Division will be better off taking the opportunity.

Problem 9-16A

Controllable Items	Amount
Production department supplies	\$ 6,000
Production wages	580,000
Materials used	529,200
Total	\$1,115,200

There are other expenses that are associated with the production department such as depreciation on manufacturing equipment, plant rental expense, and property taxes. However, the amount of these items results from past decisions or the amounts are set by external sources and are, therefore, beyond the control of the production department manager.

Problem 9-19A

- a. The characteristics that differentiate a cost center, a profit center, and an investment center from each other are tied to or depend on the concept of responsibility. To work effectively, managers must be held responsible or accountable for only the results over which they have a substantial degree of control, in other words, freedom to make decisions that influence the outcome. With this understanding of the concept of responsibility accounting, the characteristics that differentiate these three concerns can be identified.
 - A cost center is the most limited area of responsibility for which costs are accumulated. The manager of a cost

center has control over many costs, but no control over revenues or invested capital.

- A profit center manager is responsible for both revenue and expenses but not for invested capital.
- An investment center manager is responsible for revenue, expenses, and invested capital.

- b. The manager of the computer department would most certainly conduct the operations of his department differently if he were responsible for managing the department as a profit center or an investment center.

Currently, his motivation is to minimize operating costs. This objective is probably accomplished by eliminating staff, providing only acceptable (rather than exceptional) service and avoiding overtime work. If he is given responsibility for a profit center, he will be motivated to maximize profits, become more service oriented, search out more cost-efficient methods to maintain revenue, and probably actively solicit new accounts for the “service bureau” aspect of his department.

If the department became an investment center, the manager would become responsible for purchasing the most economical equipment to accomplish the work of the department in order to maximize his return on investment. In addition, the manager would continue to do those things that would increase his return, such as being more service orientated, searching out more cost-efficient methods, and soliciting new accounts.

The profit center/investment center concept usually results in a more dedicated, satisfied employee because he has control of his own “business.”

Problem 9-22A

- a. Fisher Division’s ROI before the new investment opportunity:

$$\text{\$1,170,000} \div \text{\$7,500,000} = 15.6\%$$

Fisher Division's expected ROI on the new investment opportunity is:

$$\text{\$126,000} \div \text{\$900,000} = 14.0\%$$

Since the investment opportunity yields an expected ROI that is below Fisher's existing opportunity, accepting the opportunity would reduce Fisher's total ROI as follows:

$$(\text{\$1,170,000} + \text{\$126,000}) \div (\text{\$7,500,000} + \text{\$900,000}) = 15.4\% \text{ (rounded)}$$

Because Fisher Division's ROI would decline if the division decides to accept the additional investment, management would be motivated to reject the additional funding.

b. Allenby Company's ROI before the new investment opportunity:

$$\text{\$2,640,000} \div \text{\$20,000,000} = 13.20\%$$

Since Allenby Company's ROI is below the 14% return that Fisher could earn on the new investment, Allenby's ROI will increase if Fisher accepts the new investment opportunity as show below:

$$(\text{\$2,640,000} + \text{\$126,000}) \div (\text{\$20,000,000} + \text{\$900,000}) = 13.23\%$$

Because Allenby Company's ROI would rise if Fisher accepts the additional investment, Allenby would benefit from the acceptance of the new investment. These conditions result in a conflict between what is beneficial to the manager of the Fisher

Division and what is beneficial to the company as a whole. Specifically, the investment opportunity decreases Fisher's ROI but increases Allenby's ROI. This conflict is commonly called suboptimization.

c. Fisher's additional residual income if investment is accepted:

$$\text{\$126,000} - (\text{\$900,000} \times 10\%) = \text{\$36,000}$$

Because the residual income for Fisher's new investment is greater than zero, Fisher would be motivated to accept the new funding when residual income is used as the sole performance measure. Residual income avoids sub-optimization.