Solution 3.5

	Service Depts.		Production Depts.		
	S1	S2	P1	P2	Allocation Basis
Directly identifiable overhead	$50,000	$40,000	$ 75,000	$ 65,000	
Allocated overhead	10,000	5,000	25,000	20,000	
Total overhead cost to be allocated	$60,000	$45,000	$100,000	$85,000	
Allocation of service departments					
S1	(60,000)		40,000	20,000	Square feet
S2		(45,000)	15,000	30,000	Machine hours
Totals	—	—	$155,000	$135,000	

Solution 3.6

Molding (20 hours × $10)	$200
Machining (10 hours × $8)	80
Painting (5 hours × $4)	20
Total	$300

Some members of the club have been complaining that heavy users of the club are not bearing their share of the costs through their membership fees. Dess Rosmond, General Manager of the Reserve Club, agrees that monthly fees paid by the various member groups should be based on the annual average amount of cost-related activities provided by the club for the three groups, and he intends to set fees on that basis for the coming year. The annual direct costs of operating the golf course, tennis courts, and swimming pool have been calculated by the club's controller as follows:

Golf course	$900,000
Swimming pool	50,000
Tennis courts	25,000

The operation of the bar and restaurant and all related costs, including depreciation on the bar and restaurant facilities, are excluded from this analysis. In addition to the above costs, the club incurs general overhead costs in the following amounts for the most recent (and typical) year:

General Ledger Overhead Accounts	Amounts
Indirect labor for the club management staff (the general manager, assistant general manager, membership manager, and club controller)	$250,000
Utilities (other than those directly related to golf, swimming, and tennis)	24,000
Website maintenance	2,000
Postage	5,000
Computers and information systems maintenance	7,500
Clubhouse maintenance and depreciation	30,000
Liability insurance	4,000
Security contract	12,000
	$334,500

Dess believes that the best way to assign most of the overhead costs to the three membership categories is with an activity-based system that recognizes four key activities that occur regularly in the club:

Recruiting and providing orientation for new members
Maintaining the membership roster and communicating with members
Planning, scheduling, and managing club events
Maintaining the financial records and reporting for the club

Required

a. Identify and explain which overhead costs can reasonably be assigned to one or more of the four key activities, and suggest a basis for making the assignment.
b. Identify a cost driver for each activity cost pool that would seem to be suitable for assigning the activity cost pool to the three membership categories.
c. Suggest a method for assigning any overhead costs to the three membership categories that cannot reasonably be assigned to activity pools.
d. Comment on the suitability of ABC to this cost assignment situation.

ANSWERS TO SELF-STUDY QUESTIONS:

1. c, (p. 173) 2. d, (p. 176) 3. c, (p. 181) 4. b, (p. 182) 5. d, (p. 185) 6. d, (p. 186)

E6-4B. Cost Formula The following amounts of various cost categories are experienced by Patton Manufacturing in producing and selling its only product: LO3

Direct materials	$14 per unit of product
Direct labor	$12 per direct labor hour*
Manufacturing overhead	$15,000 + $3.50 per direct labor hour
Selling expenses	$17,000 + $2.75 per unit of product
Administrative	$9,000 + $0.40 per unit of product

*Each unit of product requires 1.5 direct labor hours.

Combine the various cost factors into a general total cost formula for Patton Manufacturing and determine the total cost of producing and selling 25,000 units.

E6-5B. Least Squares Regression Analysis Bogota Corporation has gathered data on its overhead activities and associated costs for the past 12 months. Josh Hopper, from the accounting department, has convinced management that overhead costs can be better estimated and controlled if the fixed and variable components of each overhead activity are known. One such activity is the purchasing department (receiving and reviewing purchase requisitions, issuing purchase orders, and managing vendor relationships), which he believes is driven by the number of purchase orders issued. Twelve months of data have been gathered for the purchasing activity and are as follows: LO3

Month	Purchase Orders Issued	Purchasing Cost
1	1,050	$18,100
2	750	$15,100
3	1,550	$28,100
4	1,250	$17,100
5	1,350	$25,100
6	1,150	$21,100
7	1,650	$29,100
8	1,450	$24,100
9	1,750	$27,100
10	950	$16,100
11	1,250	$18,100
12	1,500	$18,600

Assume Josh has used the method of least squares (i.e., regression analysis) on the purchasing data and has gotten the following results:

Intercept	$3,231
Slope	$13.99

Required

a. Using the results from the method of least squares, prepare a cost formula for the purchasing activity.

b. Using the formula for Requirement *a*, what is the predicted cost of purchasing for a month in which 1,525 purchase orders are processed? (Note: Round your answer to the nearest dollar.)

E6-6B. Least Squares Regression Analysis Bogota Corporation has gathered data on its overhead activites and associated costs for the past 12 months. Josh Hopper, from the accounting department, has convinced management that overhead costs can be better estimated and controlled if the fixed and variable components of each overhead activity are known. One such activity is the purchasing department (receiving and reviewing purchase recquisitions, issuing purchase orders, and managing vendor relationships), which he believes is driven by the number of purchase orders issued. Twelve months of data have been gathered for the purchasing activity and are as follows: LO3

EXERCISES—SET A

LO1 **E8-1A. Analyzing Operational Changes** Operating results for department B of Delta Company during 2019 are as follows:

Sales	$540,000
Cost of goods sold	378,000
Gross profit	$162,000
Direct expenses	$120,000
Common expenses	66,000
Total expenses	$186,000
Net loss	$ (24,000)

If department B could maintain the same physical volume of product sold while raising selling prices an average of 5% and making an additional advertising expenditure of $30,000, what would be the effect on the department's net income or net loss? (Ignore income tax in your calculations.)

LO1 **E8-2A. Analyzing Operational Changes** Suppose that department B in Exercise E8-1A could increase physical volume of product sold by 10% if it spent an additional $40,000 on advertising while leaving selling prices unchanged. What effect would this have on the department's net income or net loss? (Ignore income tax in your calculations.)

LO1 **E8-3A. Differential Analysis** In each of four independent cases, the amount of differential revenue or differential cost is as follows (parentheses indicate decreases):

	1	2	3	4
Increases (decreases) in:				
Revenue	$18,000	$-0-	?	?
Costs	?	?	($12,000)	$-0-

For each case, determine the missing amount that would be necessary for the net differential amount to be

a. $8,000
b. ($4,000)

Indicate whether your answers reflect increases or decreases.

LO2 **E8-4A. Special Order** Carson Manufacturing, Inc., sells a single product for $36 per unit. At an operating level of 8,000 units, variable costs are $18 per unit and fixed costs $10 per unit.

Carson has been offered a price of $20 per unit on a special order of 2,000 units by Big Mart Discount Stores, which would use its own brand name on the item. If Carson accepts the order, materials cost will be $3 less per unit than for regular production. However, special stamping equipment costing $4,000 would be needed to process the order; the equipment would then be discarded.

Assuming that volume remains within the relevant range, prepare an analysis of differential revenue and costs to determine whether Carson should accept the special order.

LO2 **E8-5A. Special Order** Pope Company manufactures a variety of hiking boots and has received a special one-time-only order from a new customer. Pope has sufficient idle capacity to accept the special order to manufacture 1,000 pairs of boots at a price of $50.00 per pair. Pope's normal selling price is $65.00 per pair of sneakers. Variable manufacturing costs are $35.00 per pair and fixed manufacturing costs are $12.00 a pair. Pope's variable selling expense for its normal line of sneakers is $1.00 per pair. What would the effect on Pope's operating income be if the company accepted the special order?

LO2 SERVICE AND MERCHANDISING **E8-6A. Special Order** Roy & Roy, CPAs currently provides tax return preparation services to individuals in the local community. Roy has received a one-time only request to prepare 100 tax returns for clients of another CPA firm in the community while the owner recovers from major surgery. Roy has the capacity to prepare 700 returns. Roy has an effective income tax rate of 40%. Roy's income statement, before consideration of the one-time-only request, is as follows:

TERRY COMPANY
Statement of Cash Flows
For the Year Ended December 31, 2019

Cash Flow from Operating Activities		
Net income	$36,000	
Add (deduct) items to convert net income to cash basis		
Depreciation	11,000	
Loss on sale of investments	1,000	
Accounts receivable decrease	6,000	
Inventory increase	(28,000)	
Prepaid advertising increase	(3,000)	
Accounts payable increase	13,000	
Wages payable increase	3,500	
Income tax payable decrease	(1,500)	
Cash provided by operating activities		$38,000
Cash Flow from Investing Activities		
Sale of investments	9,000	
Purchase of plant assets	(48,000)	
Cash used by investing activities		(39,000)
Cash Flow from Financing Activities		
Issuance of common stock	14,000	
Payment of dividends	(17,000)	
Cash used by financing activities		(3,000)
Net decrease in cash		(4,000)
Cash at beginning of year		12,000
Cash at end of year		$ 8,000

APPENDIX 13A: Preparing the Statement of Cash Flows Under the Direct Method

LO4 **Explain** the preparation of a statement of cash flows using the direct method.

Although it is quite straightforward to create a direct method statement of cash flows given access to a company's internal accounting records, such access is rarely available to anyone except a company's management team. All that is necessary is to pull the numbers directly off the Cash general ledger account and place them in the appropriate section of the statement of cash flows. This is why the direct method is referred to as "direct." The cash flow from operations is taken directly from the company's general ledger, rather than being indirectly computed from net income. Unfortunately, investment professionals, lenders, and stockholders rarely have access to such proprietary internal data. Thus, it is necessary to be able to create direct method cash flow information using only such publicly available data as the indirect method statement of cash flows.

The process to convert an indirect method statement of cash flows to the direct method requires two steps. First, replace net income (the first line item under the operating activities section of the indirect method statement format) with the line items appearing on a firm's income statement. For instance, Bennett Company's income statement in **Exhibit 13-2** contains the following line items:

Sales revenue	$250,000
Cost of goods sold	(148,000)
Wages expense	(52,000)
Insurance expense	(5,000)
Depreciation expense	(10,000)
Income tax expense	(11,000)
Gain on sale of plant assets	8,000
Net income	$ 32,000

Thus, for the Bennett Company, we begin by replacing the net income of $32,000 under the operating activities section in **Exhibit 13-5** with the seven income statement line items shown above, which aggregate to $32,000.

The second step involves adjusting the income statement line items identified in Step One with the remaining line items from the operating activities section of the indirect method statement of cash flows. **Exhibit**