




-  Activity-based costing
 -  Activity-based management
 -  Traditional costing
-

I. Theories

Multiple Choice

Select the letter of the best answer.

1. Which of the following statements is (are) true about non-value-added activities?
 - I. Non-value-added activities are often unnecessary and dispensable.
 - II. Non-value-added activities may be necessary but are being performed in an inefficient and improvable manner.
 - III. Non-value-added activities can be eliminated without deterioration of product quality, performance, or perceived value.
 - A. I only
 - B. II only.
 - C. III only.
 - D. I and II.
 - E. I, II, and III.
2. Factory Oak produces various wooden bookcases, tables, storage units, and chairs. Which of the following would be included in a listing of the company's non-value-added activities?
 - A. Assembly of tables.
 - B. Staining of storage units.
 - C. Transfer of chairs from the assembly line to the staining facility.
 - D. Storage of completed bookcases in inventory.
 - E. Both "C" and "D."
3. Airstream builds recreational motor homes. All of the following activities add value to the finished product except:
 - A. installation of carpet.
 - B. assembly of the frame to the chassis.
 - C. storage of the vehicle in the sales area.
 - D. addition of exterior lights.
 - E. final painting and polishing.
4. In an attempt to cut non-value-added costs, companies may:
 - A. reduce the scope of selected activities.
 - B. eliminate selected activities.
 - C. combine selected activities.
 - D. do "A" and "B" above.
 - E. do "A," "B," and "C" above.
5. Generally speaking, companies prefer doing business with customers who:

Activity-based costing
Activity-based management
Traditional costing

BCSV

- A. order small quantities rather than large quantities.
 - B. often change their orders.
 - C. require special packaging or handling.
 - D. request normal delivery times.
 - E. need specialized engineering design changes.
6. The contemporary management tool that focuses on restrictions that limit a company's ability to maximize long-run profit is commonly known as:
- A. simulation.
 - B. linear regression.
 - C. constraint manipulation.
 - D. the theory of constraints.
 - E. game theory.
7. Activity-based costing
- a. requires the identification of cost drivers.
 - b. is used only in JIT operations.
 - c. applies only to discretionary fixed costs.
 - d. does not help to identify activities as value-adding or non-value-adding.
8. A company using activity-based costing
- a. tries to identify cost drivers.
 - b. allocates all costs to individual products.
 - c. looks for the activity with which total costs are most closely associated.
 - d. is probably using the JIT philosophy.
9. Machine setups is an example of a(n) _____ activity.
- a. Batch
 - b. Facility-sustaining
 - c. Product-sustaining
 - d. Unit
10. Machine hours is an example of a(n) _____ activity.
- a. Batch
 - b. Facility-sustaining
 - c. Product-sustaining
 - d. Unit
11. Landscaping is an example of a(n) _____ activity.
- a. Batch
 - b. Facility-sustaining
 - c. Product-sustaining
 - d. Unit
12. Material cost is an example of a(n) _____ activity.
- a. Batch
 - b. Facility-sustaining
 - c. Product-sustaining
 - d. Unit

13. A tool that compares how tasks are performed internally with the best practices of industry leaders is
- process value analysis
 - re-engineering
 - caveat analysis
 - benchmarking
14. An approach to developing new ways to perform existing activities is called
- process value analysis
 - re-engineering
 - caveat analysis
 - benchmarking
15. Which of the following statements is true?
- The traditional approach to costing uses many different cost drivers.
 - Costs that are indirect to products are by definition traceable to directly to products.
 - Costs that are indirect to products are traceable to some activity.
 - All of the above statements are true.
16. Number of purchase orders is an example of a(n) _____ activity.
- Batch
 - Facility-sustaining
 - Product-sustaining
 - Unit
17. Direct labor hours is an example of a(n) _____ activity.
- Batch
 - Facility-sustaining
 - Product-sustaining
 - Unit
18. Property taxes on the plant is an example of a(n) _____ activity.
- Batch
 - Facility-sustaining
 - Product-sustaining
 - Unit
19. Production volume is an example of a(n) _____ activity.
- Batch
 - Facility-sustaining
 - Product-sustaining
 - Unit
20. _____ are those performed each time a unit is produced or sold.
- Batch-level activities
 - Facility-sustaining activities
 - Sustaining activities
 - Unit-level activities

21. _____ are those that a company performs when it makes a group of units.
- Batch-level activities
 - Facility-sustaining activities
 - Sustaining activities
 - Unit-level activities
22. Which of the following is true regarding activity-based management?
- ABM is using information about activities to manage portions of the organization other than costs.
 - ABM is applying ABC to external financial reporting.
 - ABM requires the use of re-engineering principles.
 - All of the above are true.
23. Consider the following statements regarding traditional costing systems:

- Overhead costs are applied to products on the basis of volume-related measures.
- All manufacturing costs are easily traceable to the goods produced.
- Traditional costing systems tend to distort unit manufacturing costs when numerous goods are made that have widely varying production requirements.

Which of the above statements is (are) true?

- I only.
 - II only.
 - III only.
 - I and III.
 - II and III.
24. Many traditional costing systems:
- trace manufacturing overhead to individual activities and require the development of numerous activity-costing rates.
 - write off manufacturing overhead as an expense of the current period.
 - combine widely varying elements of overhead into a single cost pool.
 - use a host of different cost drivers (e.g., number of production setups, inspection hours, orders processed) to improve the accuracy of product costing.
 - produce results far superior to those achieved with activity-based costing.
25. Which of the following is the proper sequence of events in an activity-based costing system?
- Identification of cost drivers, identification of cost pools, calculation of cost application rates, assignment of cost to products.
 - Identification of cost pools, identification of cost drivers, calculation of cost application rates, assignment of cost to products.
 - Assignment of cost to products, identification of cost pools, identification of cost drivers, calculation of cost application rates.
 - Calculation of cost application rates, identification of cost drivers, identification of cost pools, assignment of cost to products.
 - Some other sequence of the four activities listed above.
26. Which of the following tasks is not normally associated with an activity-based costing

Activity-based costing
Activity-based management
Traditional costing

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- system?
- A. Calculation of cost application rates.
 - B. Identification of cost pools.
 - C. Preparation of allocation matrices.
 - D. Identification of cost drivers.
 - E. Assignment of cost to products.
27. Which of the following is least likely to be classified as a batch-level activity in an activity-based costing system?
- A. Shipping.
 - B. Receiving and inspection.
 - C. Production setup.
 - D. Property taxes.
 - E. Quality assurance.
28. In an activity-based costing system, materials receiving would typically be classified as a:
- A. unit-level activity.
 - B. batch-level activity.
 - C. product-sustaining activity.
 - D. facility-level activity.
 - E. period-level activity.
29. Activity-based costing systems:
- A. use a single, volume-based cost driver.
 - B. assign overhead to products based on the products' relative usage of direct labor.
 - C. often reveal products that were under- or overcosted by traditional costing systems.
 - D. typically use fewer cost drivers than more traditional costing systems.
 - E. have a tendency to distort product costs.
30. Dreyfus Manufacturing sells a number of goods whose selling price is heavily influenced by cost. A recent study of product no. 519 revealed a traditionally-derived total cost of P1,019, a selling price of P1,850 based on that figure, and a newly computed activity-based total cost of P1,215. Which of the following statements is true?
- A. All other things being equal, the company should consider a drop in its sales price.
 - B. The company may have been extremely competitive in the marketplace from a price perspective.
 - C. Product no. 519 could be labeled as being overcosted by the firm's traditional costing procedures.
 - D. If product no. 519 is undercosted by traditional accounting procedures, then all of the company's other products must be undercosted as well.
 - E. Generally speaking, the activity-based cost figure is "less accurate" than the traditionally-derived cost figure.
31. Vanguard combines all manufacturing overhead into a single cost pool and allocates this overhead to products by using machine hours. Activity-based costing would likely show that with Vanguard's current procedures,
- A. all of the company's products are undercosted.
 - B. the company's high-volume products are undercosted.
 - C. all of the company's products are overcosted.

Activity-based costing
Activity-based management
Traditional costing

BCSV

- D. the company's high-volume products are overcosted.
 E. the company's low-volume products are overcosted.
32. Jackson manufactures products X and Y, applying overhead on the basis of labor hours. X, a low-volume product, requires a variety of complex manufacturing procedures. Y, on the other hand, is both a high-volume product and relatively simplistic in nature. What would an activity-based costing system likely disclose about products X and Y as a result of Jackson's current accounting procedures?
- | | <u>X</u> | <u>Y</u> |
|----|------------------|------------------|
| A. | Undercosted | Undercosted |
| B. | Undercosted | Overcosted |
| C. | Overcosted | Undercosted |
| D. | Overcosted | Overcosted |
| E. | Costed correctly | Costed correctly |
33. Koski manufactures products J and K, applying overhead on the basis of labor hours. J, a low-volume product, requires a variety of complex manufacturing procedures. K, on the other hand, is both a high-volume product and relatively simplistic in nature. What would an activity-based costing system likely disclose about products J and K as a result of Koski's current accounting procedures?
- | | <u>Undercosted</u> | <u>Overcosted</u> |
|----|---|-------------------|
| A. | J, K | |
| B. | | J, K |
| C. | J | K |
| D. | K | J |
| E. | None of the above, as both products are costed correctly. | |
34. Under a traditional costing system, which of the following costs would likely be classified as indirect with respect to the various products manufactured?
- A. Plant maintenance.
 B. Factory supplies.
 C. Utilities.
 D. Machinery depreciation.
 E. All of the above would be considered indirect costs.
35. Of the following organizations, activity-based costing cannot be used by:
- A. manufacturers.
 B. financial-services firms.
 C. book publishers.
 D. hotels.
 E. none of the above, as all are able to use this costing system.
36. Which of the following statements about activity-based costing (ABC) is false?
- A. ABC cannot be used by service businesses.
 B. In comparison with traditional costing systems, ABC tends to use more cost pools and more cost drivers.
 C. In comparison with traditional-costing systems, ABC results in less cost "averaging" of various diversified activities.
 D. In comparison with traditional-costing systems, ABC results in more costs being

Activity-based costing
Activity-based management
Traditional costing

BCSV

classified as direct costs.

- E. ABC tends to reduce cost distortion among product lines.

37. A hospital administrator is in the process of implementing an activity-based-costing system. Which of the following tasks would not be part of this process?

- A. Identification of cost pools.
- B. Calculation of cost application rates.
- C. Assignment of cost to services provided.
- D. Identification of cost drivers.
- E. None of the above, as all these tasks would be part of the process.

38. An objective of activity-based management is to

- a. eliminate the majority of centralized activities in an organization.
- b. reduce or eliminate non-value-added activities incurred to make a product or provide a service.
- c. institute responsibility accounting systems in decentralized organizations.
- d. all of the above

39. Which of the following is/are part of activity-based management?

Activity analysis Cost driver analysis

- | | |
|--------|-----|
| a. yes | yes |
| b. no | yes |
| c. no | no |
| d. yes | no |

40. Which of the following falls under the Activity-Based Management umbrella?

- | | <u>Continuous improvement</u> | <u>Business process reengineering</u> | <u>Activity-based costing</u> |
|----|-------------------------------|---------------------------------------|-------------------------------|
| a. | no | no | yes |
| b. | yes | no | no |
| c. | yes | yes | yes |
| d. | no | yes | no |

41. The sum of the non-value-added time and the value-added time equals

- a. inspection time.
- b. production time.
- c. the product life cycle.
- d. cycle time.

42. Which of the following add customer value?

- a. setup time
- b. storage time
- c. idle time
- d. processing time

Activity-based costing
Activity-based management
Traditional costing

BCSV

43. Lead time minus production time is equal to
- idle time.
 - storage time.
 - non-value-added time.
 - value-added time.
44. When a firm redesigns a product to reduce the number of component parts, the firm is
- increasing consumer value.
 - increasing the value added to the product.
 - decreasing product variety.
 - decreasing non-value-added costs.
45. Non-value-added activities that are necessary to businesses, but not costs that customers are willing to pay for are known as
- business-value-added activities.
 - long-term variable activities.
 - short-term variable activities.
 - superior business activities.
46. Which of the following would not be considered a value-added activity in the preparation of a tax return?
- printing a copy of the return for the client
 - printing a copy of the return for the IRS
 - installing tax software
 - checking for accuracy
47. Which of the following is considered a value-added activity?

<u>Idle time</u>	<u>Inspection time</u>	<u>Transfer time</u>
------------------	------------------------	----------------------

- | | | |
|--------|-----|-----|
| a. yes | yes | no |
| b. no | no | no |
| c. yes | no | yes |
| d. no | yes | yes |

48. A process map
- should indicate only value-added activities.
 - is also known as a detailed flowchart.
 - should indicate only those steps/processes that are obvious in the production of goods/services.
 - is also known as a value chart.

49. A value chart should include which of the following?

<u>Service time</u>	<u>Inspection time</u>	<u>Transfer time</u>
---------------------	------------------------	----------------------

- | | | |
|--------|-----|-----|
| a. yes | no | yes |
| b. no | no | yes |
| c. yes | yes | no |

Activity-based costing
Activity-based management
Traditional costing

BCSV

d. yes yes yes

50. The actual time it takes to perform a specific task is called
- inspection time.
 - service time.
 - transfer time.
 - quality time.
51. Manufacturing cycle efficiency is a measure of
- bottlenecks.
 - effectiveness.
 - efficiency.
 - quality.
52. Which of the following is typically regarded as a cost driver in traditional accounting practices?
- number of purchase orders processed
 - number of customers served
 - number of transactions processed
 - number of direct labor hours worked
53. When a company is labor-intensive, the cost driver that is probably least significant would be
- direct labor hours.
 - direct labor dollars.
 - machine hours.
 - cost of materials used.

54. An activity driver is used for which of the following reasons?

To measure demands

To measure resources consumed

- | | |
|----------|-----|
| a. yes | yes |
| b. yes | no |
| c. no | yes |
| d. no | no |

55. The term cost driver refers to
- any activity that can be used to predict cost changes.
 - the attempt to control expenditures at a reasonable level.
 - the person who gathers and transfers cost data to the management accountant.
 - any activity that causes costs to be incurred.
56. Cost allocation bases in activity-based costing should be
- cost drivers.
 - value-added activities.
 - activity centers.
 - processes.
57. Costs that are common to many different activities within an organization are known as _____ costs.

Activity-based costing
Activity-based management
Traditional costing

- a. product- or process-level
- b. organizational-level
- c. batch-level
- d. unit-level

58. In activity-based costing, cost reduction efforts are directed at specific
- a. cost categories.
 - b. cost pools.
 - c. processes.
 - d. cost drivers.

59. Setup time is

<u>A batch cost</u>	<u>A value-added cost</u>	<u>A production cost</u>
a. no	no	yes
b. yes	yes	no
c. yes	no	yes
d. no	yes	yes

60. Which of the following have an impact on long-term variable costs?

<u>Product variety</u>	<u>Product complexity</u>	<u>Process complexity</u>
a. no	no	no
b. no	yes	yes
c. yes	no	yes
d. yes	yes	yes

61. In allocating variable costs to products,
- a. a volume-based cost driver should be used.
 - b. direct labor hours should always be used as the allocation base.
 - c. a company should use the same allocation base that it uses for fixed costs.
 - d. a company should never use more than one cost driver.

62. Traditionally, managers have focused cost reduction efforts on
- a. activities.
 - b. processes.
 - c. departments.
 - d. costs.

63. Today, traditional accounting methods are
- a. still appropriate for financial reporting.
 - b. still appropriate for providing useful cost information to internal managers.
 - c. still appropriate for both internal and external financial reporting.
 - d. outdated for all purposes.

64. Product costing systems in use over the last 40 years
- a. concentrated on using multiple cost pools and cost drivers.

Activity-based costing
Activity-based management
Traditional costing

BCSV

- b. were often technologically incapable of handling activity-based costing information.
 - c. have generally been responsive to changes in the manufacturing environment.
 - d. have been appropriate for managerial decision purposes as long as they met the requirements of generally accepted accounting principles.
65. Traditional overhead allocations result in which of the following situations?
- a. Overhead costs are assigned as period costs to manufacturing operations.
 - b. High-volume products are assigned too much overhead, and low-volume products are assigned too little overhead.
 - c. Low-volume products are assigned too much, and high-volume products are assigned too little overhead.
 - d. The resulting allocations cannot be used for financial reports.
66. Traditionally, overhead has been assigned based on direct labor hours or machine hours. What effect does this have on the cost of a high-volume item?
- a. over-costs the product
 - b. under-costs the product
 - c. has no effect the product cost
 - d. cost per unit is unaffected by product volume
67. Relative to traditional product costing, activity-based costing differs in the way costs are
- a. processed.
 - b. allocated.
 - c. benchmarked.
 - d. incurred.
68. Under activity-based costing, benchmarks for product cost should contain an allowance for
- a. idle time.
 - b. idle time and scrap materials.
 - c. spoilage.
 - d. None of the responses are correct.
69. In activity-based costing, final cost allocations assign costs to
- a. departments.
 - b. processes.
 - c. products.
 - d. activities.
70. In activity-based costing, preliminary cost allocations assign costs to
- a. departments.
 - b. processes.
 - c. products.
 - d. activities.
71. In allocating fixed costs to products in activity-based costing,
- a. direct labor hours should always be used as the allocation base.
 - b. a company should use the same allocation base that it uses for variable costs.
 - c. a cost driver that is not volume-related should be used.
 - d. machine hours should always be used.

72. Of the following, which is the best reason for using activity-based costing?
- to keep better track of overhead costs
 - to more accurately assign overhead costs to cost pools so that these costs are better controlled
 - to better assign overhead costs to products
 - to assign indirect service overhead costs to direct overhead cost pools
73. ABC should be used in which of the following situations?
- single-product firms with multiple steps
 - multiple-product firms with only a single process
 - multiple-product firms with multiple processing steps
 - in all manufacturing firms
74. Activity-based costing and activity-based management are effective in helping managers do all of the following except
- trace technology costs to products.
 - promote excellence standards.
 - identify only value-added activities.
 - analyze performance problems.
75. Global competition has forced American industry to
- seek increased governmental regulation.
 - improve product quality and customer service.
 - narrow product lines.
 - decrease its social responsibility.
76. The costs of non-quality work do not include
- the cost of handling complaints.
 - the cost of scrap.
 - warranty costs.
 - original design costs.
77. In the "new era" of manufacturing, good performance indicators are
- production-based.
 - sales-based.
 - cost-based.
 - consumer-based.
78. Traditional standard costs are inappropriate measures for performance evaluation in the "new era" of manufacturing because they
- build in allowances for non-value-adding activities.
 - are based on historical information.
 - don't reflect current costs.
 - are ideal goals.
79. The amount of time between the development and the production of a product is
- the product life cycle.
 - lead time.

Activity-based costing
Activity-based management
Traditional costing

BCSV

- c. production time.
- d. value-added time.

80. Activity analysis allows managers to
- a. classify activities so that processes can be eliminated.
 - b. devise ways to minimize or eliminate non-value-added activities.
 - c. evaluate process performance to gain competitive advantages.
 - d. all of the above.
81. Which of the following statements about business-value-added activities (BVAs) is true?
- a. BVAs reflect the same processes in all organizations.
 - b. A process map will not reflect BVAs because such activities are not essential to process performance.
 - c. BVAs are actually value-added activities of an organization that relate to administrative processes.
 - d. It is impossible to eliminate all BVAs in an organization.
82. A value chart indicates
- a. all steps in a process and the time it takes for them to be completed.
 - b. the value-added steps in a process and the time it takes for them to be completed.
 - c. the time and cost of all value-added steps in a process.
 - d. the time and costs of all value-added and non-value-added steps in a process.
83. In the pharmaceutical or food industries, quality control inspections would most likely be viewed as
- a. non-value-added activities.
 - b. business-value-added activities.
 - c. value-added-activities.
 - d. process-efficiency activities.
84. A key concept underlying cost driver analysis is that
- a. all cost drivers identified should be used for cost accumulation.
 - b. the cost of measuring a driver does not exceed the benefits of using it.
 - c. only costs occurring at the unit-level should be assigned to products or services.
 - d. organizational/facility costs are non-value-added and should never be assigned to products or services.
85. When cost driver analysis is used, organizational profit or loss can be determined by subtracting
- a. organizational costs from total margin provided by products.
 - b. organizational costs from total product revenue.
 - c. total product costs from total product revenue.
 - d. total unit, batch, product/process, and organizational level costs incurred for a period from total product revenue.
86. An activity center is an organizational unit
- a. that makes a single product or performs a single service.
 - b. in which only value-added activities are performed.
 - c. that incurs only unit, batch, or product/process level costs.
 - d. for which management wants separate activity information.

Activity-based costing
Activity-based management
Traditional costing

BCSV

87. The following items are used in tracing costs in an ABC system. In which order are they used?
- (1) cost object
 - (2) cost driver
 - (3) activity driver
 - (4) cost pool
- a. 1, 2, 3, 4
 - b. 2, 3, 4, 1
 - c. 2, 4, 3, 1
 - d. 4, 3, 1, 2
88. Crawford Company makes ten different styles of inexpensive feather masks. Which of the following is this company most likely to have?
- a. Product complexity
 - b. Process complexity
 - c. Product variety
 - d. Process customization
89. If only one or two overhead cost pools are used,
- a. it will be easy to determine which products or services are creating the most costs.
 - b. overhead created by a specific product will be assigned to all products.
 - c. the reduction in cost accumulation and allocation time will raise company profits.
 - d. allocations should be made using only unit-based cost drivers.
90. Use of activity-based costing and activity-based management requires
- a. the creation of an environment for change in an organization.
 - b. elimination of all non-value-added activities in an organization.
 - c. that company processes be automated and the use of direct labor be minimal.
 - d. each process be fully mapped and all activities be identified as value-added or non-value-added.
91. Which of the following is most likely to make the implementation of ABC/ABM slow and difficult?
- a. The inability of all employees to understand the computations involved in ABC.
 - b. A lack of involvement by or support from upper management.
 - c. The need for dual costing systems.
 - d. An inability to eliminate all business-value-added activities.
92. Activity-based costing and generally accepted accounting principles differ in that ABC
- a. does not define product costs in the same manner as GAAP.
 - b. cannot be used to compute an income statement, but GAAP can.
 - c. is concerned only with costs generated from automated processes, but GAAP is concerned with costs generated from both manual and automated processes.
 - d. information is useful only to managers, while GAAP information is useful to all organizational stakeholders.
93. If activity-based costing is implemented in an organization without any other changes being implemented, total overhead costs will
- a. be reduced because of the elimination of non-value-added activities.

Activity-based costing**Activity-based management****Traditional costing**

- b. be reduced because organizational costs will not be assigned to products or services.
- c. be increased because of the need for additional people to gather information on cost drivers and cost pools.
- d. remain constant and simply be spread over products differently.

94. Symptoms of an outdated cost system include all of the following except
- A. product costs change because of changes in financial reporting.
 - B. products that are difficult to produce show little profit.
 - C. competitors' prices appear unrealistically low.
 - D. the company has a highly profitable niche all to itself.

True or False

Write T if the statement is true otherwise, Write F.

1. Business value-added activities add value to a product.
2. Management should strive to reduce or eliminate non-value added activities from a production process.
3. Business value-added activities increase the value of a product without increasing production time.
4. The first step in performing activity analysis is to prepare a process map.
5. Preparation of a value chart is the first step in activity analysis
6. Lead time in a production process includes both value and non-value added time.
7. A company should strive to reduce all non-value added activities to a minimum.
8. When non-value added time is greater, manufacturing cycle efficiency is higher.
9. When non-value added time is greater, manufacturing cycle efficiency is lower.
10. Direct materials are normally considered as unit-level costs.
11. Direct materials are normally considered as batch-level costs.
12. Unit level costs occur once for each unit produced.
13. Batch level costs occur once for each unit produced.
14. Machine setup is normally considered a batch-level cost
15. Machine setup is normally considered a unit-level cost
16. Building depreciation is generally considered an organizational or facility cost.
17. Building depreciation is generally considered an product or process level cost.
18. Activity-based costing is appropriate for a company that manufactures a wide variety of products
19. Activity-based costing is appropriate for a company that manufactures a single product.
20. Activity-based costing is appropriate for a company that has low overhead costs that are proportional to the unit volumes of products.
21. Activity-based costing is appropriate for a company that has high overhead costs that are not proportional to unit volumes of individual products.
22. There is a direct relationship between the complexity of a production process and overhead costs.
23. Activity-based costing conforms to GAAP with regard to which costs should be expensed.
24. An activity-based costing system should be evaluated with regard to the benefits it can provide an organization versus the costs of implementing it.
25. ABC can only be used in a company that produces a single product.
26. A company that uses only volume-based measures will overcost its low-volume products.
27. ABC will be most useful in estimating fixed costs.
28. Two major influences on costs are complexity and diversity.
29. Volume-based measures will tend to overcost high volume products.
30. Activities that drive resource requirements are known as activity drivers.
31. ABC is required for GAAP financial reporting.

II. Problems

Problem I

Switzer, Inc., which sells books to college bookstores and individuals, uses activity-based costing and activity-based management. The following information is available for the company's three cost pools:

<u>Activity</u>	<u>Cost Driver</u>	<u>Cost-Driver Quantity</u>	<u>Percent of Cost-Driver Activity for Bookstore Transactions</u>	<u>Percent of Cost-Driver Activity for Transactions to Individuals</u>
Incoming receipts	Number of purchase orders	3,000	20%	80%
Warehousing	Number of inventory moves	8,000	60	40
Outgoing shipments	Number of shipments	18,000	30	70

Bookstore sales totaled P8,400,000, and sales to individuals amounted to P2,400,000. Costs for the three activities were: Incoming receipts, P450,000; warehousing, P520,000; and outgoing shipments, P630,000. A review of the company's activities found various inefficiencies with respect to the warehousing of textbooks (acquired for eventual sale to bookstores) and outgoing shipments to individuals. These inefficiencies resulted in an extra 500 moves and 400 shipments, respectively.

1. How much did non-value-added activities cost Switzer this past year?

Problem II

Waupaca Company produces three products with the following production and cost information:

	<u>Model A</u>	<u>Model B</u>	<u>Model C</u>
Units produced	2,000	6,000	12,000
Direct labor hours (total)	4,000	2,000	4,000
Number of setups	100	150	250
Number of shipments	200	225	275
Engineering change orders	15	10	5

Overhead costs include setups P90,000; shipping costs P140,000; and engineering costs P180,000.

2. What would be the per unit overhead cost for Model A if direct labor hours were the allocation base?
3. What would be the per unit overhead cost for Model A if activity-based costing were used?

Activity-based costing
Activity-based management
Traditional costing

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4. *What would be the per unit overhead cost for Model B if activity-based costing were used?*
5. *What would be the per unit overhead cost for Model C if activity-based costing were used?*

Problem III

Kimball Company produces two products in a single factory. The following production and cost information has been determined:

	<u>Model 1</u>	<u>Model 2</u>
Units produced	1,000	200
Material moves (total)	100	40
Testing time (total)	250	125
Direct labor hours per unit	1	5

The controller has determined total overhead to be P480,000. P140,000 relates to material moves; P150,000 relates to testing; the remainder is related to labor time.

6. *If Kimball uses activity-based costing to allocate overhead to each model, what would overhead per unit be for Model 1?*
7. *If Kimball uses direct labor hours to allocate overhead to each model, what would overhead per unit be for Model 2?*
8. *If Kimball uses activity-based costing to allocate overhead to each model, what would overhead per unit be for Model 2?*

Problem IV

Lewis Company has two major segments with the following information:

	<u>Upstate</u>	<u>Downstate</u>	<u>Total</u>
Annual revenue	P200,000	P600,000	P800,000
Annual salesperson salaries	P30,000	P45,000	P75,000
Number of customers	50	75	125
Miles driven	80,000	40,000	

The business also has overhead costs as follows:

<u>Cost pool</u>	<u>Cost in pool</u>	<u>Cost driver</u>
Travel	P 36,000	miles driven
Entertainment	144,000	number of customers
Administrative	150,000	salaries

Total	P330,000	

9. *Allocate the overhead costs to the segments based on sales revenue.*
10. *Determine the income of each segment.*
11. *Allocate the overhead costs to the segments using ABC.*
12. *Determine the income of each segment under ABC.*

Problem V

Riverside Florists uses an activity-based costing system to compute the cost of making floral bouquets and delivering the bouquets to its commercial customers. Company personnel who earn

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Activity-based management
Traditional costing

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P180,000 typically perform both tasks; other firm-wide overhead is expected to total P70,000. These costs are allocated as follows:

	Bouquet		
	<u>Production</u>	<u>Delivery</u>	<u>Other</u>
Wages and salaries	60%	30%	10%
Other overhead	50%	35%	15%

Riverside anticipates making 20,000 bouquets and 4,000 deliveries in the upcoming year.

13. *The cost of wages and salaries and other overhead that would be charged to each bouquet made is?*
14. *The cost of wages and salaries and other overhead that would be charged to each delivery is?*

Problem VI

HiTech Products manufactures three types of remote-control devices: Economy, Standard, and Deluxe. The company, which uses activity-based costing, has identified five activities (and related cost drivers). Each activity, its budgeted cost, and related cost driver is identified below.

<u>Activity</u>	<u>Cost</u>	<u>Cost Driver</u>
Material handling	P 225,000	Number of parts
Material insertion	2,475,000	Number of parts
Automated machinery	840,000	Machine hours
Finishing	170,000	Direct labor hours
Packaging	<u>170,000</u>	Orders shipped
Total	<u>P3,880,000</u>	

The following information pertains to the three product lines for next year:

	<u>Economy</u>	<u>Standard</u>	<u>Deluxe</u>
Units to be produced	10,000	5,000	2,000
Orders to be shipped	1,000	500	200
Number of parts per unit	10	15	25
Machine hours per unit	1	3	5
Labor hours per unit	2	2	2

15. *Under an activity-based costing system, what is the per-unit cost of Economy?*
16. *Under an activity-based costing system, what is the per-unit cost of Standard?*
17. *Assume that HiTech is using a volume-based costing system, and the preceding manufacturing costs are applied to all products based on direct labor hours. How much of the preceding cost would be assigned to Deluxe?*
18. *Assume that HiTech is using a volume-based costing system, and the preceding manufacturing costs are applied to all products based on direct labor hours. How much of the preceding cost would be assigned to Standard?*

Problem VII

Century, Inc., currently uses traditional costing procedures, applying P400,000 of overhead to products X and Y on the basis of direct labor hours. The firm is considering a shift to activity-based

Activity-based costing
Activity-based management
Traditional costing

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costing and the creation of individual cost pools that will use direct labor hours (DLH), production setups (SU), and number of parts components (PC) as cost drivers. Data on the cost pools and respective driver volumes follow.

<u>Product</u>	<u>Pool No. 1</u> <u>(Driver: DLH)</u>	<u>Pool No. 2</u> <u>(Driver: SU)</u>	<u>Pool No. 3</u> <u>(Driver: PC)</u>
X	600	30	1,500
Y	1,400	50	1,000
Pool Cost	P80,000	P140,000	P180,000

19. *The overhead cost allocated to product X by using traditional costing procedures would be?*
20. *The overhead cost allocated to product Y by using traditional costing procedures would be?*
21. *The overhead cost allocated to product X by using activity-based costing procedures would be?*
22. *The overhead cost allocated to product Y by using activity-based costing procedures would be?*

Problem VIII

Kelly and Logan, an accounting firm, provides consulting and tax planning services. A recent analysis found that 65% of the firm's billable hours to clients resulted from tax planning and for many years, the firm's total administrative cost (currently P250,000) has been allocated to services on this basis.

The firm, contemplating a change to activity-based costing, has identified three components of administrative cost, as follows:

Staff support	P180,000
In-house computing charges	50,000
Miscellaneous office costs	<u>20,000</u>
Total	<u>P250,000</u>

A recent analysis of staff support found a strong correlation with the number of clients served (consulting, 20; tax planning, 60). In contrast, in-house computing and miscellaneous office cost varied directly with the number of computer hours logged and number of client transactions, respectively. Consulting consumed 30% of the firm's computer hours and had 20% of the total client transactions.

23. *Assuming the use of activity-based costing, the proper percentage to use in allocating staff support costs to tax planning services is?*
24. *If Kelly and Logan switched from its current accounting method to an activity-based costing system, the amount of administrative cost chargeable to consulting services would increase (decrease) by?*

Problem IX

The controller for Wolfe Machining has established the following overhead cost pools and cost drivers:

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<u>Overhead Cost Pool</u>	<u>Budgeted Overhead Cost</u>	<u>Cost Driver</u>
Machine setups	P240,000	Number of setups
Material handling	90,000	Units of raw material
Quality control inspection	48,000	Number of inspections
Other overhead costs	<u>160,000</u>	Machine hours
Total	<u>P538,000</u>	

<u>Overhead Cost Pool</u>	<u>Budgeted Level for Cost Driver</u>	<u>Overhead Rate</u>
Machine setups	200 setups	P1,200 per setup
Material handling	60,000 units	P1.50 per unit
Quality control	1,200 inspections	P40 per inspection
Other overhead	20,000 machine hours	P8 per machine hour

Order no. 715 has the following production requirements:

Machine setups: 7
Raw material: 11,200 units
Inspections: 16
Machine hours: 850

25. Compute the total overhead that should be assigned to order no. 715 by using activity-based costing.
26. Suppose that Wolfe were to use a single, predetermined overhead rate based on machine hours. Compute the rate per hour and the total overhead assigned to order no. 715.

Problem X

Academy Enterprises uses a traditional-costing system to estimate quality-control costs for its PDA product line. Costs are estimated at 32% of direct-labor cost, and direct labor totaled P548,000 for the quarter just ended. Management is contemplating a change to activity-based costing, and has established three cost pools: incoming material inspection, in-process inspection, and final product certification. Number of parts, number of units, and number of orders have been selected as the respective cost drivers.

The following data show the application rates that have been calculated by the company along with the quantity of driver units for the PDAs:

<u>Cost Application Rate</u>	<u>Driver Quantities</u>
P 0.50 per part	14 parts
0.10 per unit	26,000 units
110.00 per order	80 orders

27. Calculate the quarterly quality-control cost that is allocated to the PDA product line under Academy's traditional-costing system.
28. Calculate the quarterly quality-control cost that is allocated to the PDAs if activity-based costing used.
29. Does the traditional approach under- or overcost the product line? By how much?

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Traditional costing

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Problem XI

Lennox Industries manufactures two products: A and B. A review of the company's accounting records revealed the following per-unit costs and production volumes:

	<u>A</u>	<u>B</u>
Production volume (units)	<u>2,500</u>	<u>5,000</u>
Direct material	P 40	P 60
Direct labor:		
2 hours at P12	24	
3 hours at P12		36
Manufacturing overhead:		
2 hours at P93	186	
3 hours at P93		279

Manufacturing overhead is currently computed by spreading overhead of P1,860,000 over 20,000 direct labor hours. Management is considering a shift to activity-based costing in an effort to improve the firm's accounting procedures, and the following data are available:

<u>Cost Pool</u>	<u>Cost</u>	<u>Cost Driver</u>	<u>Cost Driver Volume</u>		
			<u>A</u>	<u>B</u>	<u>Total</u>
Setups	P 240,000	Number of setups	100	20	120
General factory	1,500,000	Direct labor hours	5,000	15,000	20,000
Machine processing	<u>120,000</u>	Machine hours	2,200	800	3,000
	<u>P1,860,000</u>				

Lennox determines selling prices by adding 40% to a product's total cost.

30. Compute the per-unit cost and selling price of product B by using Lennox's current costing procedures.
31. Compute the per-unit overhead cost of product B if the company switches to activity-based costing.
32. Compute the total per-unit cost and selling price of product B under activity-based costing.
33. Lennox has recently encountered significant international competition for product B, with considerable business being lost to very aggressive suppliers. Will activity-based costing allow the company to be more competitive with product B from a price perspective?
34. Will the cost and selling price of product A likely increase or decrease if Lennox changes to activity-based costing?

Problem XII

Scott, Inc., manufactures two products, Regular and Deluxe, and applies overhead on the basis of direct labor hours. Anticipated overhead and direct labor time for the upcoming accounting period are P1,600,000 and 25,000 hours, respectively. Information about the company's products follows.

Regular—

Estimated production volume: 3,000 units

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Traditional costing

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Direct materials cost: P28 per unit
Direct labor per unit: 3 hours at P15 per hour

Deluxe—

Estimated production volume: 4,000 units
Direct materials cost: P42 per unit
Direct labor per unit: 4 hours at P15 per hour

Scott's overhead of P1,600,000 can be identified with three major activities: order processing (P250,000), machine processing (P1,200,000), and product inspection (P150,000). These activities are driven by number of orders processed, machine hours worked, and inspection hours, respectively. Data relevant to these activities follow.

	Orders <u>Processed</u>	Machine Hours <u>Worked</u>	Inspection <u>Hours</u>
Regular	320	16,000	4,000
Deluxe	<u>180</u>	<u>24,000</u>	<u>6,000</u>
Total	<u>500</u>	<u>40,000</u>	<u>10,000</u>

35. Assuming use of activity-based costing, compute the unit manufacturing costs of Regular and Deluxe if the expected manufacturing volume is attained.
36. How much overhead would be applied to a unit of Regular and Deluxe if the company used traditional costing and applied overhead solely on the basis of direct labor hours? Which of the two products would be undercosted by this procedure? Overcosted?

Problem XIII

Smithson Company produces two products (A and B). Direct material and labor costs for Product A total P35 (which reflects 4 direct labor hours); direct material and labor costs for Product B total P22 (which reflects 1.5 direct labor hours). Three overhead functions are needed for each product. Product A uses 2 hours of Function 1 at P10 per hour, 1 hour of Function 2 at P7 per hour, and 6 hours of Function 3 at P18 per hour. Product B uses 1, 8, and 1 hours of Functions 1, 2, and 3, respectively. Smithson produces 800 units of A and 8,000 units of B each period.

37. If total overhead is assigned to A and B on the basis of units produced, Product A will have an overhead cost per unit of?
38. If total overhead is assigned to A and B on the basis of direct labor hours, Product B will have an overhead cost per unit of?
39. If total overhead is assigned to A and B on the basis of overhead activity hours used, the total product cost per unit assigned to Product A will be?

Problem XIV

Hazel Company uses activity-based costing. The company produces two products: coats and hats. The annual production and sales volume of coats is 8,000 units and of hats is 6,000 units. There are three activity cost pools with the following expected activities and estimated total costs:

Activity Cost Pool	Estimated Cost	Expected Activity Coats	Expected Activity Hats	Total
Activity 1	P20,000	100	400	500

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Activity-based management
Traditional costing

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Activity 2	P37,000	800	200	1,000
Activity 3	P91,200	800	3,000	3,800

40. Using ABC, the cost per unit of coats is approximately?

41. Using ABC, the cost per unit of hats is approximately?

Problem XV

Heirloom Company manufactures hand-made pine storage boxes for a variety of clients. As production manager, you have developed the following value chart:

<u>Operation</u>	<u>Average Number of Days</u>
Receiving materials	1
Storing materials	2
Handling materials	3
Cutting/measuring materials	6
Assembling materials	4
Building boxes	7
Attaching hinges	2
Inspection	1

42. Determine the value-added activities and their total time.

43. Determine the non-value-added activities and their total time.

44. Calculate the manufacturing cycle efficiency.

Problem XVI

McMahon Company would like to institute an activity-based costing system to price products. The company's Purchasing Department incurs costs of P550,000 per year and has six employees. Purchasing has determined the three major activities that occur during the year.

<u>Activity</u>	<u>Allocation Measure</u>	<u># of People</u>	<u>Total Cost</u>
Issuing purchase orders	# of purchase orders	1	\$150,000
Reviewing receiving reports	# of receiving reports	2	\$175,000
Making phone calls	# of phone calls	3	\$225,000

During the year, 50,000 phone calls were made in the department; 15,000 purchase orders were issued; and 10,000 shipments were received. Product A required 200 phone calls, 150 receiving reports, and 50 purchase orders. Product B required 350 phone calls, 400 receiving reports, and 100 purchase orders.

45. Determine the amount of purchasing department cost that should be assigned to each of these products.

46. Determine purchasing department cost per unit if 1,500 units of Product A and 3,000 units of Product B were manufactured during the year.

Problem XVII

47. Direct materials and direct labor costs total P120,000, conversion costs total P100,000, and factory overhead costs total P400 per machine hour. If 150 machine hours were

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Activity-based management
Traditional costing

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used for Job #201, what is the total manufacturing cost for Job #201?

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*“You can’t have a better tomorrow if you’re still thinking about yesterday.”*



| Answer Key      |       |       |
|-----------------|-------|-------|
| Multiple Choice |       |       |
| 1. E            | 33. C | 65. B |
| 2. E            | 34. E | 66. A |
| 3. C            | 35. E | 67. B |
| 4. E            | 36. A | 68. D |
| 5. D            | 37. E | 69. C |
| 6. D            | 38. B | 70. D |
| 7. A            | 39. A | 71. C |
| 8. A            | 40. C | 72. C |
| 9. A            | 41. D | 73. C |
| 10. D           | 42. D | 74. C |
| 11. B           | 43. C | 75. B |
| 12. D           | 44. D | 76. D |
| 13. D           | 45. A | 77. D |
| 14. B           | 46. C | 78. A |
| 15. C           | 47. B | 79. B |
| 16. A           | 48. B | 80. B |
| 17. D           | 49. D | 81. D |
| 18. B           | 50. B | 82. A |
| 19. D           | 51. C | 83. C |
| 20. D           | 52. D | 84. B |
| 21. A           | 53. C | 85. A |
| 22. A           | 54. A | 86. D |
| 23. D           | 55. D | 87. C |
| 24. C           | 56. A | 88. C |
| 25. B           | 57. B | 89. B |
| 26. C           | 58. D | 90. A |
| 27. D           | 59. C | 91. B |
| 28. B           | 60. D | 92. A |
| 29. C           | 61. A | 93. D |
| 30. B           | 62. D | 94. A |
| 31. D           | 63. A |       |
| 32. B           | 64. B |       |
|                 |       |       |
| True-False      |       |       |
| 1. F            | 12. T | 23. F |
| 2. T            | 13. F | 24. T |
| 3. F            | 14. T | 25. F |
| 4. T            | 15. F | 26. F |
| 5. F            | 16. T | 27. T |
| 6. T            | 17. F | 28. T |
| 7. T            | 18. T | 29. T |
| 8. F            | 19. F | 30. F |
| 9. T            | 20. F | 31. F |
| 10. T           | 21. T |       |
| 11. F           | 22. T |       |
|                 |       |       |

| Problems                                       |                               |                                                         |
|------------------------------------------------|-------------------------------|---------------------------------------------------------|
| 1. 46,500                                      | 17. 456,471.                  | 33. Yes                                                 |
| 2. 82.00                                       | 18. 1,141,176                 | 34. Increase                                            |
| 3. 74.00                                       | 19. 120,000.                  | 35. Reg -306.33; Del - 327.00                           |
| 4. 22.00                                       | 20. 280,000.                  | 36. Reg – 192 ; Del – 256<br>UC – Regular ; OC - Deluxe |
| 5. 10.83                                       | 21. 184,500.                  | 37. 88.64.                                              |
| 6. 295.00                                      | 22. 215,500.                  | 38. 76.98.                                              |
| 7. 1,200.00                                    | 23. 75%                       | 39. 115.50.                                             |
| 8. 925.00                                      | 24. decrease by P23,500.      | 40. 6.60                                                |
| 9. Upstate - 82,500 ;<br>downstate - 247,500   | 25. 32,640                    | 41. 15.90                                               |
| 10. Upstate - 87,500 ;<br>downstate - 307,500  | 26. 26.90 per hour; 22,865    | 42. 19                                                  |
| 11. Upstate – 141,600 ;<br>downstate – 188,400 | 27. 175,360                   | 43. 7                                                   |
| 12. Upstate- 28,400;<br>downstate- 366,600     | 28. 193,400                   | 44. 73.1%                                               |
| 13. 7.15.                                      | 29. Undercost; by18,040       | 45. A - 4,025 ; B - 9,575                               |
| 14. 19.63.                                     | 30. PUC – 375 ; SP - 525      | 46. A - 2.68 per unit ; B - 3.19<br>per unit            |
| 15. 164.                                       | 31. 239.40                    | 47. 180,000                                             |
| 16. 272.                                       | 32. PUC - 335.40; SP - 469.56 |                                                         |