Chapter 23(8)
Performance Evaluation for Decentralized Operations

OBJECTIVES

Obj 1	List and explain the advantages and disadvantages of decentralized operations.
Obj 2	Prepare a responsibility accounting report for a cost center.
Obj 3	Prepare responsibility accounting reports for a profit center.
Obj 4	Compute and interpret the rate of return on investment, the residual income, and the balanced scorecard for an investment center.
Obj 5	Explain how the market price, negotiated price, and cost price approaches to transfer pricing may be used by decentralized segments of a business.

TRUE/FALSE

1. Separation of businesses into more manageable operating units is termed decentralization.

ANS: T DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

2. The process of measuring and reporting operating data by areas of responsibility is termed responsibility accounting.

ANS: T DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

3. A decentralized business organization is one in which all major planning and operating decisions are made by top management.

ANS: F DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

4. A centralized business organization is one in which all major planning and operating decisions are made by top management.

ANS: T DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

5. The primary disadvantage of decentralized operations is that decisions made by one manager may affect other managers in such a way that the profitability of the entire company may suffer.

ANS: T DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

6. The three common types of responsibility centers are referred to as cost centers, profit centers, and investment centers.

ANS: T DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

7. One of the advantages of decentralization is that delegating authority to managers closest to the operation *always* results in better decisions.

ANS: F DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

8. Developing and retaining quality managers is an advantage of decentralization.
ANS: T DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

9. A responsibility center in which the department manager has responsibility for and authority over costs, revenues, and assets invested in the department is termed a cost center.
ANS: F DIF: Easy OBJ: 23(8)-02
NAT: AACSB Analytic | IMA-Performance Measurement

10. Budget performance reports prepared for the vice-president of production would generally contain less detail than reports prepared for the various plant managers.
ANS: T DIF: Difficult OBJ: 23(8)-02
NAT: AACSB Analytic | IMA-Performance Measurement

11. The amount of detail presented in a budget performance report for a cost center depends upon the level of management to which the report is directed.
ANS: T DIF: Moderate OBJ: 23(8)-02
NAT: AACSB Analytic | IMA-Performance Measurement

12. The primary accounting tool for controlling and reporting for cost centers is a budget.
ANS: T DIF: Easy OBJ: 23(8)-02
NAT: AACSB Analytic | IMA-Performance Measurement

13. Responsibility accounting reports that are given to lower level managers are usually very detailed, in turn, higher level managers will be given a summary report.
ANS: T DIF: Easy OBJ: 23(8)-02
NAT: AACSB Analytic | IMA-Performance Measurement

14. A manager in a cost center also has responsibility and authority over the revenues and the costs.
ANS: F DIF: Easy OBJ: 23(8)-02
NAT: AACSB Analytic | IMA-Performance Measurement

15. The plant managers in a cost center can be held responsible for major differences between budgeted and actual costs in their plants.
ANS: T DIF: Easy OBJ: 23(8)-02
NAT: AACSB Analytic | IMA-Performance Measurement

16. A responsibility center in which the authority over and responsibility for costs and revenues is vested in the department manager is termed a profit center.
ANS: T DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

17. Operating expenses directly traceable to or incurred for the sole benefit of a specific department and usually subject to the control of the department manager are termed direct expenses.
ANS: T DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

18. Sales commissions expense for a department store is an example of a direct expense.
ANS: T DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

19. Operating expenses incurred for the entire business as a unit that are not subject to the control of individual department managers are called indirect expenses.
ANS: T DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

20. Office salaries expense for a department store is an indirect expense.
ANS: T DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

21. The underlying principle of allocating operating expenses to departments is to assign to each department an amount of expense proportional to the revenues of that department.
ANS: F DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

22. Property tax expense for a department store's store equipment is an example of a direct expense.
ANS: T DIF: Difficult OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

23. Depreciation expense on store equipment for a department store is an indirect expense.
ANS: F DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

24. Responsibility accounting reports for profit centers are normally in the form of income statements.
ANS: T DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

25. The manager of a profit center does not make decisions concerning the fixed assets invested in the center.
ANS: T DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

26. The profit center income statement should include only revenues and expenses that are controlled by the manager.
ANS: T DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

27. The manager of the furniture department of a leading retailer does not control the salaries of departmental personnel.
ANS: F DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

28. Service department charges are similar to the expenses of a profit center that purchased services from a source outside the company.
ANS: T DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

29. Purchase requisitions for Purchasing and the number of payroll checks for Payroll Accounting are examples of activity bases.
ANS: T DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

30. The rates at which services are charged to each division are called service department charge rates.
ANS: T DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

31. The service department will determine its service department charge rate and charge the company's divisions or departments according to their use of that particular service department.
ANS: T DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

32. The profit center income statement should include only controllable revenues and expenses.
ANS: T DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

33. Controllable expenses are those that can be influenced by the decisions of the profit center management.
ANS: T DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

34. In an investment center, the manager has the responsibility and the authority to make decisions that affect not only costs and revenues, but also the plant assets invested in the center.
ANS: T DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

35. Three measures of investment center performance are income from operations, rate of return on investment, and residual income.
ANS: T DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

36. The major shortcoming of income from operations as an investment center performance measure is that it ignores the amount of revenues earned by the center.
ANS: F DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

37. If Division Q's income from operations was $30,000 on invested assets of $200,000, the rate of return on investment is 15%.
ANS: T DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

38. The rate of return on investment may be computed by multiplying investment turnover by the profit margin.
ANS: T DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

39. If the profit margin for a division is 8% and the investment turnover is 1.20, the rate of return on investment is 9.6%.
ANS: T DIF: Difficult OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

40. If the profit margin for a division is 11% and the investment turnover is 1.5, the rate of return on investment is 7.3%.
ANS: F DIF: Difficult OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

41. Investment turnover (as used in determining the rate of return on investment) focuses on the rate of profit earned on each sales dollar.
ANS: F DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

42. The ratio of sales to investment is termed the rate of return on investment.
ANS: F DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

43. The major advantage of the rate of return on investment over income from operations as a divisional performance measure is that divisional investment is directly considered and thus comparability of divisions is facilitated.
ANS: T DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

44. By using the rate of return on investment as a divisional performance measure, divisional managers will always be motivated to invest in proposals which will increase the overall rate of return for the company.
ANS: F DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

45. The excess of divisional income from operations over a minimum amount of desired income from operations is termed the residual income.
ANS: T DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

46. The minimum amount of desired divisional income from operations is set by top management by establishing a maximum rate of return considered acceptable for invested assets.
ANS: F DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

47. The major advantage of residual income as a performance measure is that it gives consideration to not only a minimum rate of return on investment but also the total magnitude of income from operations earned by each division.
ANS: T DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

48. The ratio of income from operations to sales is termed the profit margin component of the rate of return on investment.
ANS: T DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

49. The ratio of sales to invested assets is termed the investment turnover component of the rate of return on investment.

ANS: T DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

50. If income from operations for a division is $6,000, invested assets are $25,000, and sales are $30,000, the profit margin is 20%.

ANS: T DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

51. If income from operations for a division is $6,000, invested assets are $25,000, and sales are $30,000, the profit margin is 24%.

ANS: F DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

52. If income from operations for a division is $6,000, invested assets are $25,000, and sales are $30,000, the investment turnover is 1.2.

ANS: T DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

53. If income from operations for a division is $6,000, invested assets are $25,000, and sales are $30,000, the investment turnover is 5.

ANS: F DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

54. If income from operations for a division is $30,000, sales are $243,750, and invested assets are $187,500, the investment turnover is 1.3.

ANS: T DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

55. If income from operations for a division is $120,000, sales are $975,000, and invested assets are $750,000, the investment turnover is 6.3.

ANS: F DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

56. If divisional income from operations is $75,000, invested assets are $637,500, and the minimum rate of return on invested assets is 6%, the residual income is $36,750.

ANS: T DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

57. If divisional income from operations is $100,000, invested assets are $850,000, and the minimum rate of return on invested assets is 8%, the residual income is $68,000.

ANS: F DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

58. The profit margin component of rate of return on investment analysis focuses on profitability by indicating the rate of profit earned on each sales dollar.

ANS: T DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

59. In rate of return on investment analysis, the investment turnover component focuses on efficiency in the use of assets and indicates the rate at which sales are being generated for each dollar of invested assets.

ANS: T DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

60. The minimum amount of desired divisional income from operations is set by top management by establishing a minimum rate of return considered acceptable for invested assets.

ANS: T DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

61. A disadvantage to using the Residual Income performance measure is that it encourages managers to spend only the minimum acceptable rate of return on assets set by upper management.

ANS: F DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

62. The DuPont formula uses financial information to measure the performance of a business.

ANS: T DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

63. The DuPont formula uses financial and nonfinancial information to measure the performance of a business.

ANS: F DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

64. The balanced scorecard is a set of financial and nonfinancial measures that reflect the performance of the business.

ANS: T DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

65. The objective of transfer pricing is to encourage each division manager to transfer goods and services between divisions if overall company income can be increased by doing so.

ANS: T DIF: Easy OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

66. Transfer prices may be used when decentralized units are organized as cost, profit, or investment centers.

ANS: T DIF: Easy OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

67. Under the cost price approach, the transfer price is the price at which the product or service transferred could be sold to outside buyers.

ANS: F DIF: Easy OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

68. Under the negotiated price approach, the transfer price is the price at which the product or service transferred could be sold to outside buyers.

ANS: F DIF: Easy OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

69. The negotiated price approach allows the managers of decentralized units to agree among themselves as to the transfer price.
ANS: T DIF: Easy OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

70. It is beneficial for related companies to negotiate a transfer price when the supplying company has unused capacity in its plant.
ANS: T DIF: Easy OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

71. It is beneficial for two related companies to use the cost price approach for transfer pricing when both of the companies operate as cost centers and are not concerned with the revenue.
ANS: T DIF: Easy OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

MATCHING

Depending on the type of responsibility center, managers have different responsibilities. Match the responsibilities with the responsibility center.

a. Cost center
b. Profit center
c. Investment center
d. Cost and Profit centers
e. Cost and Investment centers
f. Profit and Investment centers
g. Cost, Profit, and Investment centers

1. Factory wages

2. Purchase of equipment

3. Property taxes

4. Repairs and maintenance expense

5. Sales

6. Indirect expenses

1. **ANS:** G DIF: Easy
OBJ: 23(8)-02 | 23(8)-03 | 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

2. **ANS:** C DIF: Easy
OBJ: 23(8)-02 | 23(8)-03 | 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

3. **ANS:** C DIF: Easy
OBJ: 23(8)-02 | 23(8)-03 | 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

4. **ANS:** G DIF: Easy
OBJ: 23(8)-02 | 23(8)-03 | 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

5. **ANS:** F DIF: Easy
OBJ: 23(8)-02 | 23(8)-03 | 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

6. **ANS:** D DIF: Easy
OBJ: 23(8)-02 | 23(8)-03 | 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

An activity base is used to charge service department expenses. Match each of the following questions with an activity base.

a. Purchasing
b. Payroll Accounting
c. Human Resources
d. Maintenance
e. Information systems
f. Marketing
g. President's office
h. Transportation

7. Number of work orders

8. Number of employees

9. Number of payroll checks

10. Number of purchase requisitions

11. Equally amongst divisions

12. Number of advertising campaigns

13. Number of miles

14. Number of computers in department

7. **ANS:** D DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

8. **ANS:** C DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

9. **ANS:** B DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

10. **ANS:** A DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

11. **ANS:** G DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

12. **ANS:** F DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

13. **ANS:** H DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

14. **ANS:** E DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

MULTIPLE CHOICE

1. Which of the following would be most effective in a small owner/manager-operated business?
   a. Profit centers
   b. Centralization
   c. Investment centers
   d. Cost centers

ANS: B DIF: Moderate OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

2. Businesses that are separated into two or more manageable units in which managers have authority and responsibility for operations are said to be:
   a. decentralized
   b. consolidated
   c. diversified
   d. centralized

ANS: A DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

3. Which of the following is NOT a disadvantage of decentralized operation?
   a. Competition among managers decreases profits
   b. Duplication of operations
   c. Price cutting by departments that are competing in the same product market
   d. Top management freed from everyday tasks to do strategic planning

ANS: D DIF: Difficult OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

4. Which is the best example of a decentralized operation?
   a. One owner who prepares plans and makes decisions for the entire company.
   b. Each unit is responsible for their own operations and decision making.
   c. In a major company, operating decisions are made by top management.
   d. None of the above. All are examples of a centralized management.

ANS: B DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

5. The following are advantages of decentralization except:
   a. Managers make better decisions when closer to the operation of the company.
   b. Expertise in all areas of the business is difficult, decentralization makes it better to delegate certain responsibilities.
   c. Each decentralized operation purchases their own assets and pays for operating costs.
   d. Decentralized managers can respond quickly to customer satisfaction and quality service.

ANS: C DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

6. Which of the following is not one of the common types of responsibility centers?
   a. Cost Center
   b. Profit Center
   c. Investment Center
   d. Revenue Center

ANS: D DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

7. Which of the following is a disadvantage of decentralization?
   a. Decisions made by one manager may negatively affect the profitability of the entire company.
   b. Helps retain quality managers.
   c. Decision making by managers closest to the operations.
   d. Managers are able to acquire expertise in their areas of responsibility.

ANS: A DIF: Easy OBJ: 23(8)-01
NAT: AACSB Analytic | IMA-Performance Measurement

8. A manager is responsible for costs only in a(n):
   a. profit center
   b. investment center
   c. volume center
   d. cost center

ANS: D DIF: Easy OBJ: 23(8)-02
NAT: AACSB Analytic | IMA-Performance Measurement

9. In a cost center, the manager has responsibility and authority for making decisions that affect:
   a. revenues
   b. assets
   c. both costs and revenues
   d. costs

ANS: D DIF: Easy OBJ: 23(8)-02
NAT: AACSB Analytic | IMA-Performance Measurement

10. For higher levels of management, responsibility accounting reports:
   a. are more detailed than for lower levels of management
   b. are more summarized than for lower levels of management
   c. contain about the same level of detail as reports for lower levels of management
   d. are rarely provided or reviewed

ANS: B DIF: Moderate OBJ: 23(8)-02
NAT: AACSB Analytic | IMA-Performance Measurement

11. Most manufacturing plants are considered cost centers because the have control over
    a. sales and costs.
    b. fixed assets and costs.
    c. costs only.
    d. fixed assets and sales.

ANS: C DIF: Easy OBJ: 23(8)-02
NAT: AACSB Analytic | IMA-Performance Measurement

12. The following is a measure of a manager's performance working in a cost center.
    a. budget performance report
    b. rate of return and residual income measures
    c. divisional income statements
    d. balance sheet

ANS: A DIF: Easy OBJ: 23(8)-02
NAT: AACSB Analytic | IMA-Performance Measurement

13. A responsibility center in which the department manager has responsibility for and authority over costs and revenues is called a(n):
    a. profit center
    b. investment center
    c. volume center
    d. cost center

ANS: A DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

14. In a profit center, the department manager has responsibility for and the authority to make decisions that affect:
    a. not only costs and revenues, but also assets invested in the center
    b. the assets invested in the center, but not costs and revenues
    c. both costs and revenues for the department or division
    d. costs and assets invested in the center, but not revenues

ANS: C DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

15. Which of the following expenses incurred by the sporting goods department of a department store is a direct expense?
    a. Depreciation expense--office equipment
    b. Insurance on inventory of sporting goods
    c. Uncollectible accounts expense
    d. Office salaries

ANS: B DIF: Difficult OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

16. Which of the following expenses incurred by a department store is an indirect expense?
    a. Insurance on merchandise inventory
    b. Sales salaries
    c. Depreciation on store equipment
    d. Salary of vice-president of finance

ANS: D DIF: Difficult OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

17. In a profit center, the manager has responsibility and authority for making decisions that affect:
    a. liabilities
    b. assets
    c. equity
    d. costs

ANS: D DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

18. Operating expenses directly traceable to or incurred for the sole benefit of a specific department and usually subject to the control of the department manager are termed:
    a. miscellaneous administrative expenses
    b. direct expenses
    c. indirect expenses
    d. operating expenses

ANS: B DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

19. In evaluating the profit center manager, the income from operations should be compared:
    a. across profit centers
    b. to historical performance or budget
    c. to the competition's net income
    d. to the total company earnings per share

ANS: B DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

20. Income from operations of the Commercial Aviation Division is $2,225,000. If income from operations before service department charges is $3,250,000:
    a. operating expenses are $1,025,000
    b. total service department charges are $1,025,000
    c. noncontrollable charges are $1,025,000
    d. direct manufacturing charges are $1,025,000

ANS: B DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

21. The costs of services charged to a profit center on the basis of its use of those services are called:
    a. operating expenses
    b. noncontrollable charges
    c. service department charges
    d. activity charges

ANS: C DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

22. Division T reported income from operations of $875,000 and total service department charges of $575,000. Therefore:
    a. net income was $300,000
    b. the gross profit margin was $300,000
    c. income from operations before service department charges was $1,450,000
    d. consolidated net income was $300,000

ANS: C DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

23. To calculate income from operations, total service department charges are:
    a. added to income from operations before service department charges
    b. subtracted from operating expenses
    c. subtracted from income from operations before service department charges
    d. subtracted from gross profit margin

ANS: C DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

24. Income from operations for Division B is $150,000, total service department charges are $400,000 and operating expenses are $2,266,000. What are the revenues for Division B?
    a. $550,000
    b. $3,216,000
    c. $2,816,000
    d. $2,666,000

ANS: C DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

25. Income from operations for Division M is $120,000, and income from operations before service department charges is $975,000. Therefore:
    a. total operating expenses are $855,000
    b. total manufacturing expenses are $855,000
    c. direct materials, direct labor, and factory overhead total $855,000
    d. total service department charges are $855,000

ANS: D DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

26. The following data are taken from the management accounting reports of Dancer Co.:

	Div. A	Div. B	Div. C
Income from operations	$1,800,000	$1,350,000	$1,350,000
Total service department charges	1,700,000	1,050,000	1,100,000

If an incentive bonus is paid to the manager who achieved the highest income from operations before service department charges, it follows that:
    a. Division A's manager is given the bonus
    b. Division B's manager is given the bonus
    c. Division C's manager is given the bonus
    d. The managers of Divisions B and C divide the bonus

ANS: A DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

27. What is the term used to describe expenses that are incurred for the benefit of a specific department?
    a. Indirect expenses
    b. Margin expenses
    c. Departmental expenses
    d. Direct expenses

ANS: D DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

The following financial information was summarized from the accounting records of Block Corporation for the current year ended December 31:

	Software Division	Hardware Division	Corporate Total
Cost of goods sold	$47,200	$30,720	
Direct operating expenses	27,200	20,040	
Net sales	95,000	64,000	
Interest expense			$ 2,040
General overhead			18,160
Income tax			4,700

28. The gross profit for the Software Division is:
    a. $47,800
    b. $20,600
    c. $13,240
    d. $33,280

ANS: A DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

29. The income from operations for the Software Division is:
    a. $47,800
    b. $20,600
    c. $13,240
    d. $33,280

ANS: B DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

30. The gross profit for the Hardware Division is:
    a. $47,800
    b. $20,600
    c. $13,240
    d. $33,280

ANS: D DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

31. The income from operations for the Hardware Division is:
    a. $47,800
    b. $20,600
    c. $13,240
    d. $33,280

ANS: C DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

32. The net income for Block Corporation is:
    a. $13,640
    b. $ 8,940
    c. $15,680
    d. $10,980

ANS: B DIF: Difficult OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

33. Responsibility accounting reports for profit centers will include
    a. costs.
    b. revenues.
    c. expenses and fixed assets.
    d. revenues, expenses, net income or loss from operations.

ANS: D DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

34. Some organizations use internal service departments to provide like services to several divisions or departments within an organization. Which of the following would probably not lend itself as a service department?
    a. Inventory Control
    b. Payroll Accounting
    c. Information Systems
    d. Human Resources

ANS: A DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

35. The following is a measure of a manager's performance working in a profit center.
    a. balance sheet
    b. rate of return and residual income measures
    c. budget performance report
    d. divisional income statements

ANS: D DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

36. Which of the following would not be considered an internal centralized service department?
    a. Payroll accounting department
    b. Manufacturing department
    c. Information systems department
    d. Purchasing department

ANS: B DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

37. Stevenson Corporation had $275,000 in invested assets, sales of $330,000, income from operations amounting to $49,500 and a desired minimum rate of return of 7.5%. The rate of return on investment for Stevenson is:
    a. 8%
    b. 10%
    c. 18%
    d. 7.5%

ANS: C DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

Stevenson Corporation had $550,000 in invested assets, sales of $660,000, income from operations amounting to $99,000, and a desired minimum rate of return of 15%.

38. The profit margin for Stevenson is:
    a. 16%
    b. 20%
    c. 18%
    d. 15%

ANS: D DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

39. The investment turnover for Stevenson is:
    a. 1.2
    b. 1.0
    c. 1.1
    d. 1.3

ANS: A DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

40. The residual income for Stevenson is:
    a. $0
    b. $17,820
    c. $14,850
    d. $16,500

ANS: D DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

41. Espinosa Corporation had $220,000 in invested assets, sales of $242,000, income from operations amounting to $48,400, and a desired minimum rate of return of 3%. The rate of return on investment for Espinosa is:
    a. 4%
    b. 22%
    c. 3%
    d. 6.4%

ANS: B DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

Espinosa Corporation had $1,100,000 in invested assets, sales of $1,210,000, income from operations amounting to $242,000, and a desired minimum rate of return of 15%.

42. The profit margin for Espinosa is:
    a. 20%
    b. 22%
    c. 15%
    d. 32%

ANS: A DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

43. The investment turnover for Espinosa is:
    a. 1.3
    b. 1.2
    c. 1.0
    d. 1.1

ANS: D DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

44. The residual income for Espinosa is:
    a. $60,500
    b. $22,000
    c. $77,000
    d. $24,200

ANS: C DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

The Anderson Company has sales of $4,500,000. It also has invested assets of $2,000,000 and operating expenses of $3,600,000. The company has established a minimum rate of return of 7%.

45. What is Anderson Company's profit margin?
    a. 20%
    b. 80%
    c. 44.4%
    d. 18%

ANS: A DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

46. What is Anderson Company's investment turnover?
    a. 1.80
    b. 2.25
    c. 1.25
    d. 1.4

ANS: B DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

47. What is Anderson Company's rate of return on investment?
    a. 56%
    b. 20%
    c. 45%
    d. 25%

ANS: C DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

48. What is Anderson Company's residual income?
    a. $252,000
    b. $900,000
    c. $1,400,000
    d. $760,000

ANS: D DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

49. Managers of what type of decentralized units have authority and responsibility for revenues, costs, and assets invested in the unit?
    a. Profit center
    b. Investment center
    c. Production center
    d. Cost center

ANS: B DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

50. A responsibility center in which the department manager is responsible for costs, revenues, and assets for a department is called:
    a. a cost center
    b. a profit center
    c. an operating center
    d. an investment center

ANS: D DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

51. In an investment center, the manager has the responsibility for and the authority to make decisions that affect:
    a. the assets invested in the center, but not costs and revenues
    b. costs and assets invested in the center, but not revenues
    c. both costs and revenues for the department or division
    d. not only costs and revenues, but also assets invested in the center

ANS: D DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

52. In an investment center, the manager has responsibility and authority for making decisions that affect:
    a. costs
    b. revenues
    c. assets
    d. costs, revenues, and assets

ANS: D DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

53. The profit margin is the:
    a. ratio of income from operations to sales
    b. ratio of income from operations to invested assets
    c. ratio of assets to liabilities
    d. ratio of sales to invested assets

ANS: A DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

54. The investment turnover is the:
    a. ratio of income from operations to sales
    b. ratio of income from operations to invested assets
    c. ratio of assets to liabilities
    d. ratio of sales to invested assets

ANS: D DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

55. Identify the formula for the rate of return on investment.
    a. Invested Assets/Income From Operations
    b. Sales/Invested Assets
    c. Income From Operations/Sales
    d. Income From Operations/Invested Assets

ANS: D DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

56. Which of the following expressions is termed the profit margin factor as used in determining the rate of return on investment?
    a. Sales/Income From Operations
    b. Income From Operations/Sales
    c. Invested Assets/Sales
    d. Sales/Invested Assets

ANS: B DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

57. Which of the following expressions is termed the investment turnover factor as used in determining the rate of return on investment?
    a. Invested Assets/Sales
    b. Income From Operations/Invested Assets
    c. Income From Operations/Sales
    d. Sales/Invested Assets

ANS: D DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

58. The profit margin for Division E is 28% and the investment turnover is 2.8. What is the rate of return on investment for Division E?
    a. 20%
    b. 28%
    c. 14%
    d. 78.4%

ANS: D DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

59. Division Q for Mott Company has a rate of return on investment of 28% and an investment turnover of 1.4. What is the profit margin?
    a. 28%
    b. 20%
    c. 14%
    d. 39.2%

ANS: B DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

60. Division I of Norris Company has a rate of return on investment of 28% and a profit margin of 20%. What is the investment turnover?
    a. 3.6
    b. 1.4
    c. 5.0
    d. .7

ANS: B DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

61. What additional information is needed to find the rate of return on investment if income from operations is known?
    a. Invested assets
    b. Residual income
    c. Direct expenses
    d. Sales

ANS: A DIF: Difficult OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

62. Division A of Purvis Company has a rate of return on investment of 15% and an investment turnover of 1.2. What is the profit margin?
    a. 10%
    b. 12.5%
    c. 9%
    d. 6%

ANS: B DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

63. The best measure of managerial efficiency in the use of investments in assets is:
    a. rate of return on stockholders' equity
    b. investment turnover
    c. income from operations
    d. inventory turnover

ANS: B DIF: Difficult OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

64. Two divisions of Halloway Company (Divisions X and Y) have the same profit margins. Division X's investment turnover is larger than that of Division Y (1.2 to 1.0). Income from operations for Division X is $50,000, and income from operations for Division Y is $38,000. Division X has a higher return on investment than Division Y by:
    a. using income from operations as a performance measure
    b. comparing income from operations
    c. applying a negotiated price measure
    d. using its assets more efficiently in generating sales

ANS: D DIF: Difficult OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

65. The profit margin for Division K is 8% and the investment turnover is 1.20. What is the rate of return on investment for Division K?
    a. 8%
    b. 6.7%
    c. 7.3%
    d. 9.6%

ANS: D DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

66. The excess of divisional income from operations over a minimum amount of divisional income from operations is termed:
    a. profit margin
    b. residual income
    c. rate of return on investment
    d. gross profit

ANS: B DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

67. Assume that divisional income from operations amounts to $187,000 and top management has established 15% as the minimum rate of return on divisional assets totaling $1,000,000. The residual income for the division is:
    a. $37,000
    b. $28,050
    c. $67,000
    d. $0

ANS: A DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

68. Which one of the following is NOT a measure that management can use in evaluating and controlling investment center performance?
    a. Rate of return on investment
    b. Negotiated price
    c. Residual income
    d. Income from operations

ANS: B DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

69. A factor in determining the rate of return on investment--the ratio of income from operations to sales--is called:
    a. profit margin
    b. indirect expenses
    c. investment turnover
    d. cost

ANS: A DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

70. A factor in determining the rate of return on investment--the ratio of sales to invested assets--is called:
    a. profit margin
    b. indirect margin
    c. investment turnover
    d. cost ratio

ANS: C DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

71. Assume that Division P has achieved income from operations of $165,000 using $900,000 of invested assets. If management desires a minimum rate of return of 8%, the residual income is:
    a. $72,000
    b. $13,200
    c. $185,000
    d. $93,000

ANS: D DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

Division W of Comer Company has sales of $140,000, cost of goods sold of $83,000, operating expenses of $43,000, and invested assets of $100,000.

72. What is the rate of return on investment for Division W?
    a. 14%
    b. 2.8%
    c. 10%
    d. 5.47%

ANS: A DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

73. What is the profit margin for Division W?
    a. 14%
    b. 2.8%
    c. 10%
    d. 5.47%

ANS: C DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

74. What is the investment turnover for Division W?
    a. 1.4
    b. 1.2
    c. 1.7
    d. 0.7

ANS: A DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

Division R of O'Murray Company has sales of $200,000, cost of goods sold of $120,000, operating expenses of $58,000, and invested assets of $125,000.

75. What is the rate of return on investment for Division R?
    a. 9.15%
    b. 17.6%
    c. 20%
    d. 5.5%

ANS: B DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

76. What is the profit margin for Division R?
    a. 8.8%
    b. 9.15%
    c. 11%
    d. 20%

ANS: C DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

77. Investment centers differ from profit centers in that they
    a. are responsible for net income only.
    b. are able to invest in assets.
    c. have less responsibilities than cost centers and profit centers.
    d. are only responsible for revenues.

ANS: B DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

78. Starrs Shoe Factory is an investment center and is responsible for all of their net income and the use of their assets. In 2008, the invested assets totaled $460,000 and net income was $115,000. What is to rate of return on assets?
    a. 25%
    b. 25
    c. 4
    d. 400%

ANS: A DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

79. The balanced scorecard measures financial and nonfinancial performance of a business. The balanced scorecard measures four areas. Identify one of the following that is not included as a performance measurement.
    a. Internal Process
    b. Financial
    c. Innovation and Learning
    d. Employees

ANS: D DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

80. The following is a measure of a manager's performance working in an investment center.
    a. budget performance report
    b. rate of return and residual income measures
    c. divisional income statements
    d. all of the responses

ANS: D DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

The Koko Company has income from operations of $80,000, invested assets of $400,000, and sales of $930,000.

81. What is the profit margin?
    a. 43%
    b. 8.6%
    c. 20%
    d. 4.3%

ANS: B DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

82. What is the investment turnover?
    a. 5.000
    b. 2.325
    c. 20
    d. 4.30

ANS: B DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

83. The balanced scorecard measures
    a. only financial information
    b. only nonfinancial information
    c. both financial and nonfinancial information
    d. external and internal information

ANS: C DIF: Easy OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

84. Which of the following is not a commonly used approach to setting transfer prices?
    a. Market price approach
    b. Revenue price approach
    c. Negotiated price approach
    d. Cost price approach

ANS: B DIF: Moderate OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

85. Determining the transfer price as the price at which the product or service transferred could be sold to outside buyers is known as the:
    a. Cost price approach
    b. Negotiated price approach
    c. Revenue price approach
    d. Market price approach

ANS: D DIF: Easy OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

Materials used by Aro-Products Inc. in producing Division 3's product are currently purchased from outside suppliers at a cost of $5 per unit. However, the same materials are available from Division 6. Division 6 has unused capacity and can produce the materials needed by Division 3 at a variable cost of $3 per unit. A transfer price of $3.20 per unit is established, and 40,000 units of material are transferred, with no reduction in Division 6's current sales.

86. How much would Division 3's income from operations increase?
    a. $150,000
    b. $50,000
    c. $32,000
    d. $72,000

ANS: D DIF: Moderate OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

87. How much would Division 6's income from operations increase?
    a. $8,000
    b. $15,000
    c. $80,000
    d. $150,000

ANS: A DIF: Moderate OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

88. How much would Aro-Products total income from operations increase?
    a. $32,000
    b. $112,000
    c. $80,000
    d. $150,000

ANS: C DIF: Moderate OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

Materials used by Bristol Company in producing Division C's product are currently purchased from outside suppliers at a cost of $10 per unit. However, the same materials are available from Division A. Division A has unused capacity and can produce the materials needed by Division C at a variable cost of $8.50 per unit. A transfer price of $9.50 per unit is negotiated and 30,000 units of material are transferred, with no reduction in Division A's current sales.

89. How much would Division C's income from operations increase?
    a. $0
    b. $90,000
    c. $15,000
    d. $60,000

ANS: C DIF: Moderate OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

90. How much would Division A's income from operations increase?
    a. $0
    b. $90,000
    c. $30,000
    d. $60,000

ANS: C DIF: Moderate OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

91. How much would Bristol's total income from operations increase?
    a. $45,000
    b. $120,000
    c. $60,000
    d. $150,000

ANS: A DIF: Moderate OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

The Hua Company's radio division currently is purchasing transistors from the Xiang Co. for $3.50 each. The total number of transistors needed is 8,000 per month. Hua Company's electronics division can produce the transistors for a cost of $4.00 each. The $4 is made up of $3 in variable costs, and $1 in allocated fixed costs.

92. What should be the range of a possible transfer price?
    a. No transfer should take place.
    b. $3.51 to $3.99
    c. $3.01 to $3.99
    d. $3.01 to $3.49

ANS: D DIF: Moderate OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

93. What would be the total savings (or additional costs) if the transfer were to take place?
    a. $4,000 Savings
    b. $4,000 in additional costs
    c. $8,000 Savings
    d. $8,000 in additional costs

ANS: A DIF: Moderate OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

94. When is it appropriate to use the market price approach when two related companies are providing services or products to each other?
    a. The production for the selling company is falling under full capacity and it needs to increase its sales.
    b. The purchasing company is currently purchasing a product at a price from an outside supplier as it would from its related company that is operating at full capacity.
    c. The purchasing company is considered a cost center and is not concerned with maximizing profits for the company.
    d. The policy of the parent company is that when a product is sold by an outside supplier and by a related party, purchases must be made within the company.

ANS: B DIF: Moderate OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

95. Which transfer price approach is used when the transfer price is set at the amount sold to outside buyers?
    a. Market Price
    b. Cost Price
    c. Negotiated Price
    d. Variable Price

ANS: A DIF: Easy OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

96. The transfer price which is uses a variety of cost concepts is the
    a. Negotiated price approach
    b. Standard cost approach
    c. Cost price approach
    d. Market price approach

ANS: C DIF: Easy OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

97. The transfer price that must be less than the market price but greater than the supplying division's variable costs per unit is called
    a. the cost price approach
    b. the negotiated cost approach
    c. the standard cost approach
    d. the market price approach

ANS: B DIF: Moderate OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

98. Koko Company has two divisions. Division A is interested in purchasing 10,000 units from Division B. Capacity is available for Division B to produce these units. The per unit market price is $30 per unit, with a variable cost of $17. The manager of Division A has offered to purchase the units at $15 per unit. In an effort to make this transfer price beneficial for the company as a whole, what is the range of prices that should be used during negotiations between the two divisions?
   a. $15 to $30
   b. $15 to $17
   c. over $30
   d. $17 to $30

ANS: D DIF: Moderate OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

EXERCISE/OTHER

1. Koko Company's costs were over budget by $48,000. The Koko Company is divided in two regions. The first region's costs were over budget by $5,000. Determine the amount that the second region's cost was over or under budget.

ANS:
$43,000 over budget

DIF: Easy OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement TOP: Example Exercise 23(8)-1

2. Using the data from the Koko Company, determine the divisional income from operations for the A and B regions.

	A Region	B Region	
Sales	$600,000	$900,000	
Cost of goods sold	200,000	350,000	
Selling expenses	150,000	275,000	
Service department expenses			
Purchasing			$80,000
Payroll accounting			40,000

Allocate service department expenses proportional to the sales of each region.

ANS:
A Region = $600,000 - ($200,000 + $150,000) - ($600,000/$1,500,000 * $120,000)
Income A region = $202,000

B Region = $900,000 - ($350,000 + $275,000) - ($900,000/$1,500,000 * $120,000)
Income A region = $203,000

DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement TOP: Example Exercise 23(8)-2

3. The Koko Company has income from operations of $60,000, invested assets of $345,000, and sales of $786,000. Use the DuPont formula to calculate the rate of return on investment, and show (a) the profit margin, (b) the investment turnover, and (c) rate of return on investment.

ANS:

(a) Profit Margin = $60,000 / $786,000 = 7.63%

(b) Investment turnover = $786,000 / $345,000 = 2.278

(c) Rate of return on investment = 7.63% × 2.278 = 17.38%

DIF: Moderate OBJ: 23(8)-04

NAT: AACSB Analytic | IMA-Performance Measurement TOP: Example Exercise 23(8)-3

4. The Koko Company Division A has income from operations of $80,000 and assets of $400,000. The minimum acceptable rate of return on assets is 14%. What is the residual income for the division?

ANS:

Income from operations	$80,000
Minimum acceptable income from operations as a percent of assets: $400,000 * 14%	56,000
Residual income	$24,000

DIF: Easy OBJ: 23(8)-04

NAT: AACSB Analytic | IMA-Performance Measurement TOP: Example Exercise 23(8)-4

5. The materials used by the Koko Company Division A are currently purchased from outside supplier at $55 per unit. Division B is able to supply Division A with 20,000 units at a variable cost of $42 per unit. The two divisions have recently negotiated a transfer price of $48 per unit for the 20,000 units. By how much will each division's income increase as a result of this transfer?

ANS:

Division A	
Change in sales	$0
Decrease in variable costs (20,000 * ($55 - $48))	140,000
Increase in income	$140,000
Division B	
Increase in sales (20,000 * $48)	$960,000
Increase in variable cost (20,000 * $42)	840,000
Increase in income	$120,000
Total Increase in income for Koko Company	$260,000

DIF: Moderate OBJ: 23(8)-05

NAT: AACSB Analytic | IMA-Performance Measurement TOP: Example Exercise 23(8)-5

6. The materials used by the Koko Company Division A are currently purchased from outside supplier. Division B is able to supply Division A with 20,000 units at a variable cost of $42 per unit. The normal price that Division B normally sells its units is $53 per unit. What is the range of transfer prices that the two division managers should negotiate?

ANS:
$53 to $42 per unit.

DIF: Easy OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement

PROBLEM

1. The budget for Department 10 of Plant M for the current month ending March 31 is as follows:

Materials	$208,000
Factory wages	265,000
Supervisory salaries	67,800
Depreciation of plant and equipment	35,000
Power and light	22,500
Insurance and property taxes	15,500
Maintenance	9,700

During March, the costs incurred in Department 10 of Plant M were materials, $204,000; factory wages, $285,000; supervisory salaries, $63,600; depreciation of plant and equipment, $35,000; power and light, $21,360; insurance and property taxes, $14,400; maintenance, $9,456.

(a) Prepare a budget performance report for the supervisor of Department 10 of Plant M for the month of March.
(b) Are there any significant variances (greater than 5%) of the budgeted amounts that should be examined by the supervisor?

ANS:
(a)

BUDGET PERFORMANCE REPORT
Supervisor, Department 10--Plant M
For Month Ended March 31, 20--

	Budget	Actual	Over	Under
Materials	$208,000	$204,000		$ 4,000
Factory wages	265,000	285,000	$20,000	
Supervisory salaries	67,800	63,600		$ 4,200
Depreciation of plant and equipment	35,000	35,000	--	--
Power and light	22,500	21,360		1,140
Insurance and property taxes	15,500	14,400		1,100
Maintenance	9,700	9,456		244
	$623,500	$632,816	$20,000	$10,684

(b) The factory wages and supervisory salaries expenses should be examined by the supervisor.

DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

2. A department store apportions payroll costs on the basis of the number of payroll checks issued. Accounting costs are apportioned on the basis of the number of reports. The payroll costs for the year were $231,000 and the accounting costs for the year totaled $75,500. The departments and the average cost of store equipment and average cost of inventory for each are as follows:

	Number of Payroll Checks	Number of Reports
Department R	483	70
Department S	1,470	85
Department T	147	345

Determine the amount of (a) payroll cost and (b) accounting cost to be apportioned to each department.

ANS:
(a)

	Total	Department R	Department S	Department T
Number of payroll checks	2,100	483	1,470	147
Percent	100%	23%	70%	7%
Payroll cost	$231,000	$53,130	$161,700	$16,170

(b)

Number of reports	500	70	85	345
Percent	100%	14%	17%	69%
Accounting cost	$75,500	$10,570	$12,835	$52,095

DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

3. A portion of the divisional income statement for the year just ended is presented below in condensed form.

	Department F
Net sales	$ 250,000
Cost of goods sold	180,000
Gross profit	$ 70,000
Operating expenses	90,000
Loss from operations	$ (20,000)

The operating expenses of Department F include $45,000 for direct expenses.

It is estimated that the discontinuance of Department F would not have affected the sales of the other departments nor have reduced the indirect expenses of the business. Assuming the accuracy of these estimates, determine the effect (increase or decrease and amount) on the income from operations of the business if Department F had been discontinued.

ANS:
$25,000 decrease, which is the income from operations for Department F ($250,000 net sales - $180,000 cost of goods sold - $45,000 direct expenses).

DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

4. Some items are omitted from each of the following condensed divisional income statements of Willis Inc.

	Division L	Division M	Division N
Sales	$ (1)	$320,000	$580,000
Cost of goods sold	480,000	120,000	$ (5)
Gross profit	$220,000	$ (3)	$180,000
Operating expenses	95,000	160,000	$ (6)
Income from operations	$ (2)	$ (4)	$ 75,000

(a) Determine the amount of the missing items, identifying them by number.
(b) Based on income from operations, which division is the most profitable?

ANS:
(a) (1) $700,000
(2) $125,000
(3) $200,000
(4) $40,000
(5) $400,000
(6) $105,000

(b) Division L

DIF: Moderate OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

5. Using the data from the Koko Company,
   (a) determine the divisional income from operations for the three regions by allocating the service department expenses proportional to the sales of the regions.
   (b) determine the increase or decrease to net income if C Region did not operate.

	A Region	B Region	C Region
Sales	$600,000	$900,000	$300,000
Cost of goods sold	200,000	350,000	190,000
Selling expenses	150,000	275,000	100,000
Service department expenses			
Purchasing			120,000
Payroll accounting			80,000

ANS:
(a)

	A Region	B Region	C Region	Total
Sales	$600,000	$900,000	$300,000	$1,800,000
Cost of goods sold	200,000	350,000	190,000	740,000
Selling expenses	150,000	275,000	100,000	525,000
Serv. dept. expenses	66,667	100,000	33,333	200,000
Net income	$183,333	$175,000	$(23,333)	$335,000

(b) $10,000 decrease

DIF: Difficult OBJ: 23(8)-03
NAT: AACSB Analytic | IMA-Performance Measurement

6. Casey Co. has two divisions, F and G. Invested assets and condensed income statement data for each division for the past year ended December 31 are as follows:

	Division F	Division G
Revenues	$175,000	$112,500
Operating expenses	112,500	92,750
Service department charges	27,500	12,625
Invested assets	225,000	97,500

(a) Prepare condensed income statements for the past year for each division.
(b) Using the expanded expression, determine the profit margin, investment turnover, and rate of return on investment for each division.

ANS:
(a)

Casey Co.
Divisional Income Statements
For the Year Ended December 31, 20--

	Division F	Division G
Revenues	$175,000	$112,500
Operating expenses	112,500	92,750
Income from operations before service department charges	$ 62,500	$ 19,750
Service department charges	27,500	12,625
Income from operations	$ 35,000	$ 7,125

(b) Rate of return on investment (ROI) = Profit margin × investment turnover

$$\text{ROI} = \frac{\text{Income From Operations}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Invested Assets}}$$

$$\underline{\text{Division F}} = \frac{\$35{,}000}{\$175{,}000} \times \frac{\$175{,}000}{\$225{,}000}$$

ROI = 20.0% × .778
ROI = 15.6%

$$\underline{\text{Division G}} = \frac{\$7{,}125}{\$112{,}500} \times \frac{\$112{,}500}{\$97{,}500}$$

ROI = 6.3% × 1.15
ROI = 7.2%

DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

7. Data for Divisions R, S, T, U, and V are as follows:

Div.	Sales	Income from Operations	Inv. Assets	Rate of Return on Inv.	Profit Margin	Invest. Turnover
R	(1)	$35,000	$200,000	(2)	(3)	1.6
S	$455,000	(4)	$284,375	16%	(5)	(6)
T	$525,000	$73,500	(7)	(8)	(9)	1.2
U	$800,000	(10)	(11)	(12)	13.0%	2.5
V	(13)	(14)	$250,000	(15)	16.0%	2.0

(a) Determine the missing items, identifying each by number.
(b) Which division is most profitable in terms of income from operations?
(c) Which division is most profitable in terms of rate of return on investment?

ANS:
(a)
(1) $320,000 ($200,000 × 1.6)
(2) 17.5% ($35,000/$200,000)
(3) 10.9% ($35,000/$320,000)
(4) $45,500 ($284,375 × 16%)
(5) 10% ($45,500/$455,000)
(6) 1.6 ($455,000/$284,375)
(7) $437,500 ($525,000/1.2)
(8) 16.8% ($73,500/$437,500)
(9) 14% ($73,500/$525,000)
(10) $104,000 ($800,000 × 13.0%)
(11) $320,000 ($800,000/2.5)
(12) 32.5% ($104,000/$320,000)
(13) $500,000 ($250,000 × 2.0)
(14) $80,000 ($500,000 × 16%)
(15) 32% (16% × 2.0)

(b) Division U

(c) Division U

DIF: Difficult OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

8. Several items are missing from the following table of rate of return on investment and residual income. Determine the missing items, identifying each item by the appropriate letter.

Invested Assets	Income from Oper.	Rate of Return on Inv.	Min. Rate of Return	Min. Amt. of Income from Oper.	Residual Income
(a)	(b)	(c)	16%	$128,000	$10,000
$850,000	$153,000	(d)	12%	(e)	(f)
$825,000	(g)	20%	(h)	(i)	$24,000
(j)	$129,000	24%	(k)	$ 60,000	(l)

ANS:

(a) $800,000 ($128,000/16%)
(b) $138,000 ($128,000 + $10,000)
(c) 17.3% ($138,000/$800,000)
(d) 18% ($153,000/$850,000)
(e) $102,000 ($850,000 × 12%)
(f) $51,000 ($153,000 - $102,000)
(g) $165,000 ($825,000 × 20%)
(h) 17.1% ($141,000/$825,000)
(i) $141,000 ($165,000 - $24,000)
(j) $537,500 ($129,000/24%)
(k) 11.2% ($60,000/$537,500)
(l) $69,000 ($129,000 - $60,000)

DIF: Difficult OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

9. The sales, income from operations, and invested assets for each division of Jamieson Company are as follows:

	Sales	Income from Operations	Invested Assets
Division E	$4,000,000	$550,000	$2,400,000
Division F	4,800,000	760,000	2,500,000
Division G	7,000,000	860,000	2,800,000

(a) Using the expanded expression, determine the profit margin, investment turnover, and rate of return on investment for each division. Round to one decimal place.
(b) Which is (are) the most profitable per dollar invested?

ANS:
(a) Rate of Return on Investment:

ROI = Profit Margin × Investment Turnover

$$\text{ROI} = \frac{\text{Income from Operations}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Invested Assets}}$$

Division E:

$$\text{ROI} = \frac{\$550{,}000}{\$4{,}000{,}000} \times \frac{\$4{,}000{,}000}{\$2{,}400{,}000}$$

ROI = 13.8% × 1.67
ROI = 23.0%

Division F:

$$\text{ROI} = \frac{\$760{,}000}{\$4{,}800{,}000} \times \frac{\$4{,}800{,}000}{\$2{,}500{,}000}$$

ROI = 15.8% × 1.92
ROI = 30.3%

Division G:

$$\text{ROI} = \frac{\$860{,}000}{\$7{,}000{,}000} \times \frac{\$7{,}000{,}000}{\$2{,}800{,}000}$$

ROI = 12.3% × 2.5

ROI = 30.8%

(b) Divisions F and G are almost equally profitable.

DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

10. The sales, income from operations, and invested assets for each division of Winston Company are as follows:

	Sales	Income from Operations	Invested Assets
Division C	$5,000,000	$630,000	$3,900,000
Division D	6,800,000	760,000	4,300,000
Division E	3,750,000	750,000	7,250,000

Management has established a minimum rate of return for invested assets of 8%.

(a) Determine the residual income for each division.

(b) Based on residual income, which of the divisions is the most profitable?

ANS:

(a) Division C: $318,000 ($630,000 - $312,000)
Division D: $416,000 ($760,000 - $344,000)
Division E: $170,000 ($750,000 - $580,000)

(b) Division D

DIF: Moderate OBJ: 23(8)-04
NAT: AACSB Analytic | IMA-Performance Measurement

11. Materials used by Nead Company in producing Division A's product are currently purchased from outside suppliers at a cost of $30 per unit. However, the same materials are available from Division B. Division B has unused capacity and can produce the materials needed by Division A at a variable cost of $20 per unit.

    (a) If a transfer price of $25 per unit is established and 60,000 units of material are transferred, with no reductions in Division B's current sales, how much would Nead Company's total income from operations increase?

    (b) Assuming transfer price of $25, how much would the income from operations of Division A increase?

    (c) Assuming transfer price of $25, how much would the income from operations of Division B increase?

    (d) If the negotiated price approach is used, what would be the range of acceptable transfer prices?

ANS:
(a) $600,000

(b) Division A would save $5 per unit on 60,000 units or $300,000.

(c) Division B would earn an additional $300,000 by selling 60,000 units at $5 above the variable cost.

(d) $20.01 to $29.99

DIF: Easy OBJ: 23(8)-05
NAT: AACSB Analytic | IMA-Performance Measurement