

Chapter 11 Reporting for Control

Multiple Choice Questions

1. Which of the following is the numerator in the calculation of the turnover component of ROI?

- A. Invested capital.
- B. Total assets.
- C. Operating income.
- D. Sales.**

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

2. What would be a good example of a common cost that normally could NOT be assigned to products on a segmented income statement except on an arbitrary basis?

- A. Product advertising outlays.
- B. Salary of a corporation president.**
- C. Direct materials.
- D. The product manager's salary.

Blooms Remember

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Easy

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-10 Traceable and Common Fixed Costs

3. All other things being equal, which of the following is a consequence of an increase in a division's traceable fixed expenses?
- A. The division's contribution margin ratio will decrease.
 - B. The division's segment margin ratio will remain the same.
 - C.** The division's segment margin will decrease.
 - D. The overall company operating income will remain the same.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

4. Lyons Company consists of two divisions: A and B. Lyons Company reported a contribution margin of \$50,000 for Division A, and had a contribution margin ratio of 30% in Division B, when sales in Division B were \$200,000. Operating income for the company was \$25,000 and traceable fixed expenses were \$40,000. What were Lyons Company's common fixed expenses?
- A. \$40,000.
 - B.** \$45,000.
 - C. \$70,000.
 - D. \$85,000.

$$50,000 + 200,000 * .30 - 40,000 - 25,000 = \$45,000.$$

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

5. More Company has two divisions: L and M. During July, the contribution margin in Division L was \$60,000. The contribution margin ratio in Division M was 40%, and its sales were \$250,000. Division M's segment margin was \$60,000. The common fixed expenses were \$50,000, and the company operating income was \$20,000. What was the segment margin for Division L?

- A. \$0.
- B. \$10,000.**
- C. \$50,000.
- D. \$60,000.

Total SM = 20,000 + 50,000 = 70,000. L's SM = 70,000 - 60,000 = \$10,000.

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

6. During April, Division D of Carney Company had a segment margin ratio of 15%, a variable expense ratio of 60% of sales, and traceable fixed expenses of \$15,000. Division D's sales were closest to which of the following?

- A. \$22,500.
- B. \$33,333.
- C. \$60,000.**
- D. \$100,000.

using equation $S - .6 S - 15,000 = .15S$. Sales = $15,000 / (1 - .6 - .15) = \$60,000$.

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

7. Divisions A and B of Denner Company reported the following results for October:

	Division A	Division B
Sales	\$90,000	\$150,000
Variable Expenses as a Percentage of Sales	70%	60%
Segment Margin	\$2,000	\$23,000

If common fixed expenses were \$31,000, what were the total fixed expenses?

- A. \$31,000.
- B. \$52,000.
- C. \$62,000.
- D.** \$93,000.

$$31,000 + (90,000 * (1 - .70) - 2,000) + (150,000 * (1 - .60) - 23,000) = \$93,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

8. Johnson Company operates two plants: Plant A and Plant B. Johnson Company reported for the year just ended a contribution margin of \$50,000 for Plant A. Plant B had sales of \$200,000 and a contribution margin ratio of 30%. Net operating income for the company was \$20,000 and traceable fixed costs for the two plants totalled \$50,000. What were Johnson Company's common fixed costs for last year?

- A. \$40,000.
- B. \$50,000.
- C. \$70,000.
- D. \$90,000.

$$50,000 + 200,000 * .30 - 50,000 - 20,000 = \$40,000.$$

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

Ieso Company has two stores: J and K. During November, Ieso Company reported operating income of \$30,000 and sales of \$450,000. The contribution margin in Store J was \$100,000, or 40% of sales. The segment margin in Store K was \$30,000, or 15% of sales. Traceable fixed expenses were \$60,000 in Store J, and \$40,000 in Store K.

9. What were the total sales in Store J?

- A. \$100,000.
- B. \$150,000.
- C. \$250,000.**
- D. \$400,000.

$$100,000 / .40 = \$250,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

10. What were the total variable expenses in Store K?

- A. \$70,000.
- B. \$110,000.
- C. \$130,000.**
- D. \$200,000.

$$\text{CM for K} = 30,000 + 40,000 = \$70,000. \text{ Sales K} = 450,000 - 250,000 = 200,000. \text{ VC for K} = 200,000 - 70,000 = \$130,000.$$

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

11. What were Ieso Company's total fixed expenses for the year?

- A. \$40,000.
- B. \$100,000.
- C. \$140,000.**
- D. \$170,000.

Total SM = 30,000 + 40,000 = 70,000 so, Common FC = 70,000 - 30,000 = 40,000. Total FC = 40,000 + 60,000 + 40,000 = \$140,000.

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

12. What was the segment margin ratio in Store J?

- A. 16%.**
- B. 24%.
- C. 40%.
- D. 60%.

$(100,000 - 60,000)/250,000 = 16\%$.

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

Canon Company has two sales areas: North and South. During last year, the contribution margin in the North was \$50,000, or 20% of sales. The segment margin in the South was \$15,000, or 8% of sales. Traceable fixed costs were \$15,000 in the North and \$10,000 in the South. During last year, the company reported total operating income of \$26,000.

Chapter 11 - Reporting for Control

13. What were the total fixed costs (traceable and common) for Canon Company for the year?

- A. \$24,000.
- B. \$25,000.
- C. \$49,000.**
- D. \$50,000.

Total SM = 50,000 - 15,000 + 15,000 = 50,000. Total FC = (50,000 - 26,000) + 15,000 + 10,000 = \$49,000.

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

14. What were the variable costs for the South area for the year?

- A. \$65,000.
- B. \$162,500.**
- C. \$185,000.
- D. \$230,000.

South sales = 15,000/.08 = 187,500. CM = 15,000 + 10,000. VC = 187,500 - 25,000 = \$162,500.

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

15. Which of the following statements provide(s) an argument in favour of including only a plant's net book value rather than gross book value as part of operating assets in the ROI computation?

- I. Net book value is consistent with how plant and equipment items are reported on a balance sheet.
 - II. Net book value is consistent with the computation of operating income, which includes amortization as an operating expense.
 - III. Net book value allows ROI to decrease over time as assets get older.
- A. I only.
 - B. III only.
 - C. I and II only.**
 - D. I and III only.

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

16. In computing the margin in a ROI analysis, which of the following is used?

- A. Sales in the denominator.**
- B. Operating income in the denominator.
- C. Average operating assets in the denominator.
- D. Residual income in the denominator.

Blooms Remember

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

17. Which of the following is NOT an operating asset?

- A. Cash.
- B. Inventory.
- C. Plant equipment.
- D.** Common shares.

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

18. Assuming that sales and operating income remain the same, which of the following statements about a company's return on investment is correct?

- A. It will increase if operating assets increase.
- B. It will decrease if operating assets decrease.
- C.** It will decrease if turnover decreases.
- D. It will decrease if turnover increases.

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

19. All other things equal, which of the following events would generally cause an increase in a company's return on investment (ROI)?
- A. An increase in average operating assets.
 - B. A decrease in sales.
 - C.** A decrease in operating expenses.
 - D. An increase in operating expenses.

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-31 Example 1 Increased Sales without Any Increase in Operating Assets

Topic 11-32 Example 2 Decreased Operating Expenses with No Change in Sales or Operating Assets

Topic 11-33 Example 3 Invest in Operating Assets to Increase Sales

20. How is a company's return on investment calculated?
- A. Dividing the margin by the turnover.
 - B.** Multiplying the margin by the turnover.
 - C. Dividing the turnover by the average operating assets.
 - D. Multiplying the turnover by the average operating assets.

Blooms Remember

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

21. All other things equal, a company's return on investment is affected by a change in which of the following?

Turnover	Margin
A) Yes	Yes
B) No	Yes
C) No	No
D) Yes	No

- A.** Option A
- B. Option B
- C. Option C
- D. Option D

Blooms Understand
 CPA Competency 3.6.2 Evaluates performance of responsibility centres.
 CPA Competency 3.6.3 Evaluates root causes of performance issues.
 Difficulty Medium
 Learning Objective 11-03 Analyze the return on investment.
 Topic 11-28 The Return on Investment Formula

22. Which of the following is a correct definition of operating income?

- A. Sales minus variable expenses.
- B. Sales minus variable expenses and traceable fixed expenses.
- C. Contribution margin minus traceable and common fixed expenses.
- D.** Income before interest and taxes (EBIT).

Blooms Understand
 CPA Competency 3.6.2 Evaluates performance of responsibility centres.
 CPA Competency 3.6.3 Evaluates root causes of performance issues.
 Difficulty Medium
 Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.
 Learning Objective 11-03 Analyze the return on investment.
 Topic 11-06 Different Levels of Segmented Statements
 Topic 11-29 Operating Income and Operating Assets Defined

23. Delmar Corporation is considering the use of residual income as a measure of the performance of its divisions. What major disadvantage of this method should the company consider before deciding to institute it?

- A. This method does not make allowance for difference in the size of compared divisions.
- B. Opportunities may be undertaken that will decrease the overall return on investment.
- C. The minimum required rate of return may eliminate desirable opportunities from consideration.
- D. Residual income does not measure how effectively the division manager controls costs.

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-37 Divisional Comparison and Residual Income

Topic 11-38 Criticisms of Residual Income

24. Suppose a manager's performance is to be evaluated by residual income. Which of the following will NOT result in an increase in the residual income figure for this manager, assuming other factors remain constant?

- A. An increase in sales.
- B. An increase in the minimum required rate of return.
- C. A decrease in expenses.
- D. A decrease in operating assets.

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

Topic 11-38 Criticisms of Residual Income

25. The performance of the manager of Division A is evaluated by residual income. Which of the following would improve the manager's performance?

- A. Increase in average operating assets.
- B. Decrease in average operating assets.**
- C. Increase in minimum required return.
- D. Decrease in operating income.

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

Topic 11-38 Criticisms of Residual Income

26. (Appendix 11A) Which of the following statements about reciprocal service department costs is correct?

- A. They are allocated to producing departments under the direct method but not allocated to producing departments at all under the step-down method.
- B. They are allocated to producing departments under the step-down method but not allocated to producing departments at all under the direct method.
- C. They are not allocated to producing departments under either the direct or the step-down methods.
- D. They are allocated to producing departments under both the direct and step-down methods.**

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

27. (Appendix 11A) Which of the following statements about the step-down method of allocating service department is correct?

- A. It is a less accurate method of allocation than the direct method.
- B. It cannot be used when a company has more than two service departments.
- C. It is a simpler allocation than the direct method.
- D.** It ignores some interdepartmental services.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-24 Cost Centre

28. (Appendix 11A) Grant Company has several service departments that provide services to each other as well as to operating departments within the company. Which method would be least accurate in allocating the company's service department costs?

- A. The sequential method.
- B.** The direct method.
- C. The step-down method.
- D. The reciprocal method.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Easy

Learning Objective 11-08 Allocate service department costs to operating departments using the direct method.

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-62 Interdepartmental Services

29. (Appendix 11A) What allocation method recognizes that service departments often provide each other with interdepartmental services, and it is therefore considered to be the most accurate method for allocating service department costs to operating departments?

- A. The direct method.
- B. The step-down method.
- C.** The reciprocal method.
- D. The allocation by cost behaviour method.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-08 Allocate service department costs to operating departments using the direct method.

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-62 Interdepartmental Services

30. (Appendix 11A) Parker Company has two service departments-cafeteria and engineering-and two operating departments. The number of employees in each department is given below:

Cafeteria	10
Engineering	40
Operating Department 1	500
Operating Department 2	200

The costs of the Cafeteria are allocated to other departments on the basis of the number of employees in the departments. If these costs are budgeted at \$69,375, what would be the amount of cost allocated to Engineering under the direct method?

- A. \$0.
- B. \$3,700.
- C. \$3,750.
- D. \$17,344.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-08 Allocate service department costs to operating departments using the direct method.

Topic 11-62 Interdepartmental Services

31. (Appendix 11A) Boa Corp. uses the direct method to allocate service department overhead costs to operating departments. Information for the month of June follows:

	Service Maintenance	Departments Utilities
Departmental cost incurred	\$20,000	\$10,000
Service provided to departments:		
Maintenance		10%
Utilities	20%	
Operating - A	40%	30%
Operating - B	40%	60%

Chapter 11 - Reporting for Control

What would be the amount of maintenance department costs allocated to Operating Department A for June?

- A. \$8,000.
- B. \$8,800.
- C. \$10,000.
- D. \$20,000.

$$\$20,000 * 40\%/80\% = \$10,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-08 Allocate service department costs to operating departments using the direct method.

Topic 11-62 Interdepartmental Services

32. (Appendix 11A) When the selling division in an internal transfer has unsatisfied demand from outside customers for the product that is being transferred, what is the lowest acceptable transfer price as far as the selling division is concerned?

- A. Variable cost of producing a unit of product.
- B. The full absorption cost of producing a unit of product.
- C.** The market price charged to outside customers, less any costs saved by transferring internally.
- D. The amount that the purchasing division would have to pay an outside seller to acquire a similar product for its use.

Blooms Understand

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Medium

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-44 Transfer Pricing

33. Which of the following best describes a segment of a business responsible for both revenues and costs?

- A. A cost centre.
- B. An investment centre.
- C.** A profit centre.
- D. A residual income centre.

Blooms Remember

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-02 Differentiate among responsibility centres; such as cost centres; profit centres; and investment centres; and explain how performance is measured in each.

Topic 11-24 Cost Centre

Topic 11-25 Profit Centre

Topic 11-26 Investment Centre

34. Effective decentralization is essential for which of the following management accounting practices in organizations?

- A. Break-even analysis.
- B. Product costing.
- C. Segment reporting.**
- D. Activity-based costing.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-04 Decentralization and Segment Reporting

35. Consider the following three statements:

- I. A profit centre has control over both cost and revenue.
- II. An investment centre has control over invested funds, but not over costs and revenue.
- III. A cost centre has no control over sales.

Which statement(s) is/are correct?

- A. I only.
- B. II only.
- C. I and III only.**
- D. I and II only.

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

Difficulty Medium

Learning Objective 11-02 Differentiate among responsibility centres; such as cost centres; profit centres; and investment centres; and explain how performance is measured in each.

Topic 11-24 Cost Centre

Topic 11-25 Profit Centre

Topic 11-26 Investment Centre

36. (Appendix 11A) An increase in appraisal costs will usually result in an increase in which of the following?
- A. Prevention costs.
 - B. Internal failure costs.**
 - C. External failure costs.
 - D. Opportunity costs.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-56 Distribution of Quality Costs

37. (Appendix 11A) Which of the following statements about *quality costs* is correct?
- A. They relate only to the manufacturing process.
 - B. They should be focused on appraisal activities.
 - C. They are minimized by having a team of well-trained quality control inspectors.
 - D. They cut across departmental lines and often are not accumulated and reported to management.**

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-51 Quality of Conformance

Topic 11-59 Uses of Quality Cost Information

38. (Appendix 11A) Which of the following would be classified as a prevention cost on a quality cost report?
- A. Lost sales arising from a reputation for poor quality.
 - B. Final product testing and inspection.
 - C. Net cost of spoilage.
 - D. Quality data gathering, analysis, and reporting.**

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

39. (Appendix 11A) Which of the following would be classified as a prevention cost on a quality cost report?

- A. Re-entering data because of keying errors.
- B. Rework labour and overhead.
- C. Net cost of scrap.
- D. Technical support provided to suppliers.**

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

40. (Appendix 11A) Which of the following would be classified as a prevention cost on a quality cost report?

- A. Cost of field servicing and handling complaints.
- B. Warranty repairs and replacements.
- C. Systems development.**
- D. Rework labour and overhead.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

41. (Appendix 11A) Which of the following would be classified as an appraisal cost on a quality cost report?

- A. Supervision of testing and inspection activities.
- B. Systems development.
- C. Quality engineering.
- D. Quality training.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

42. (Appendix 11A) Which of the following would be classified as an appraisal cost on a quality cost report?

- A. Returns and allowances arising from quality problems.
- B. Downtime caused by quality problems.
- C. Test and inspection of in-process goods.
- D. Cost of field servicing and handling complaints.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

43. (Appendix 11A) Which of the following would be classified as an appraisal cost on a quality cost report?
- A. Quality circles.
 - B. Downtime caused by quality problems.
 - C. Supplies used in testing and inspection.**
 - D. Quality engineering.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

44. (Appendix 11A) Which of the following would be classified as an internal failure cost on a quality cost report?
- A. Supplies used in testing and inspection.
 - B. Final product testing and inspection.
 - C. Net cost of scrap.**
 - D. Amortization of test equipment.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

45. (Appendix 11A) Which of the following would be classified as an internal failure cost on a quality cost report?

- A. Re-entering data because of keying errors.
- B. Final product testing and inspection.
- C. Supplies used in testing and inspection.
- D. Amortization of test equipment.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

46. (Appendix 11A) Which of the following would be classified as an internal failure cost on a quality cost report?

- A. Rework labour and overhead.
- B. Technical support provided to suppliers.
- C. Quality improvement projects.
- D. Systems development.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

47. (Appendix 11A) Which of the following would be classified as an external failure cost on a quality cost report?

- A. Quality training.
- B. Systems development.
- C. Repairs and replacements beyond the warranty period.**
- D. Quality engineering.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

48. (Appendix 11A) Which of the following would be classified as an external failure cost on a quality cost report?

- A. Product recalls.**
- B. Quality engineering.
- C. Quality training.
- D. Systems development.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

49. (Appendix 11A) Which of the following would be classified as an external failure cost on a quality cost report?

- A. Amortization of test equipment.
- B. Test and inspection of in-process goods.
- C. Test and inspection of incoming materials.
- D. Warranty repairs and replacements.**

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

Eacker Company's quality cost report is to be based on the following data:

Quality engineering	\$72,000
Net cost of spoilage	\$70,000
Re-entering data because of keying errors	\$88,000
Test and inspection of incoming materials	\$68,000
Test and inspection of in-process goods	\$97,000
Technical support provided to suppliers	\$83,000
Maintenance of test equipment	\$31,000
Product recalls	\$73,000
Warranty repairs and replacements	\$46,000

50. (Appendix 11A) What will be the total prevention cost appearing on the quality cost report?

- A. \$103,000.
- B. \$145,000.
- C. \$151,000.
- D.** \$155,000.

$$72,000 + 83,000 = \$155,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

51. (Appendix 11A) What will be the total appraisal cost appearing on the quality cost report?

- A. \$128,000.
- B. \$165,000.
- C. \$185,000.
- D.** \$196,000.

$$68,000 + 97,000 + 31,000 = \$196,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

52. (Appendix 11A) What will be the total internal failure cost appearing on the quality cost report?

- A. \$134,000.
- B. \$143,000.
- C. \$150,000.
- D.** \$158,000.

$$70,000 + 88,000 = \$158,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

53. (Appendix 11A) What will be the total external failure cost appearing on the quality cost report?

- A. \$119,000.
- B. \$143,000.
- C. \$277,000.
- D. \$628,000.

$$73,000 + 46,000 = \$119,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

Eade Company's quality cost report is to be based on the following data:

Systems development	\$32,000
Final product testing and inspection	\$13,000
Quality data gathering, analysis, and reporting	\$11,000
Net cost of scrap	\$62,000
Returns arising from quality problems	\$59,000
Amortization of test equipment	\$57,000
Rework labour and overhead	\$18,000
Test and inspection of incoming materials	\$40,000
Product recalls	\$36,000

54. (Appendix 11A) What will be the total prevention cost appearing on the quality cost report?

- A. \$43,000.
- B. \$45,000.
- C. \$47,000.
- D. \$51,000.

$$32,000 + 11,000 = \$43,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

55. (Appendix 11A) What will be the total appraisal cost appearing on the quality cost report?

- A. \$70,000.
- B. \$97,000.
- C. \$110,000.
- D. \$119,000.

$$13,000 + 57,000 + 40,000 = \$110,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

56. (Appendix 11A) What will be the total internal failure cost appearing on the quality cost report?

- A. \$54,000.
- B. \$75,000.
- C. \$80,000.
- D. \$121,000.

$$62,000 + 18,000 = \$80,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

57. (Appendix 11A) What will be the total external failure cost appearing on the quality cost report?

- A. \$54,000.
- B. \$95,000.**
- C. \$175,000.
- D. \$328,000.

$$59,000 + 36,000 = \$95,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

Eagan Company's quality cost report is to be based on the following data:

Quality training	\$75,000
Lost sales due to poor quality	\$94,000
Test and inspection of in-process goods	\$37,000
Test and inspection of incoming materials	\$65,000
Disposal of defective products	\$86,000
Quality data gathering, analysis, and reporting	\$92,000
Net cost of spoilage	\$27,000
Supervision of testing and inspection activities	\$10,000
Product recalls	\$38,000

58. (Appendix 11A) What will be the total prevention cost appearing on the quality cost report?

- A. \$102,000.
- B. \$112,000.
- C. \$130,000.
- D.** \$167,000.

$$75,000 + 92,000 = \$167,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

59. (Appendix 11A) What will be the total appraisal cost appearing on the quality cost report?

- A. \$75,000.
- B. \$92,000.
- C. \$102,000.
- D.** \$112,000.

$$37,000 + 65,000 + 10,000 = \$112,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

60. (Appendix 11A) What will be the total internal failure cost appearing on the quality cost report?

- A. \$64,000.
- B.** \$113,000.
- C. \$121,000.
- D. \$124,000.

$$86,000 + 27,000 = \$113,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

61. (Appendix 11A) What will be the total external failure cost appearing on the quality cost report?

- A. \$124,000.
- B. \$132,000.**
- C. \$245,000.
- D. \$524,000.

$$94,000 + 38,000 = \$132,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

Faast Company's quality cost report is to be based on the following data:

Quality engineering	\$86,000
Quality circles	\$53,000
Supervision of testing and inspection activities	\$92,000
Net cost of scrap	\$96,000
Test and inspection of in-process goods	\$16,000
Liability arising from defective products	\$13,000
Warranty repairs and replacements	\$62,000
Debugging software errors	\$86,000
Rework labour and overhead	\$29,000

62. (Appendix 11A) What will be the total prevention cost appearing on the quality cost report?

- A. \$69,000.
- B. \$139,000.**
- C. \$148,000.
- D. \$178,000.

$$86,000 + 53,000 = \$139,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

63. (Appendix 11A) What will be the total appraisal cost appearing on the quality cost report?

- A. \$102,000.
- B. \$108,000.**
- C. \$121,000.
- D. \$247,000.

$$92,000 + 16,000 = \$108,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

64. (Appendix 11A) What will be the total internal failure cost appearing on the quality cost report?

- A. \$99,000.
- B. \$102,000.
- C. \$158,000.
- D. \$211,000.**

$$96,000 + 86,000 + 29,000 = \$211,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

65. (Appendix 11A) What will be the total external failure cost appearing on the quality cost report?

- A.** \$75,000.
- B. \$109,000.
- C. \$286,000.
- D. \$533,000.

$$13,000 + 62,000 = \$75,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

Fabri Company's quality cost report is to be based on the following data:

Liability arising from defective products	\$56,000
Lost sales due to poor quality	\$51,000
Test and inspection of in-process goods	\$47,000
Quality circles	\$17,000
Net cost of spoilage	\$93,000
Debugging software errors	\$29,000
Rework labour and overhead	\$95,000
Final product testing and inspection	\$32,000
Statistical process control activities	\$61,000

66. (Appendix 11A) What will be the total prevention cost appearing on the quality cost report?

- A. \$64,000.
- B. \$73,000.
- C. \$78,000.**
- D. \$93,000.

$$17,000 + 61,000 = \$78,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

67. (Appendix 11A) What will be the total appraisal cost appearing on the quality cost report?

- A.** \$79,000.
- B. \$127,000.
- C. \$140,000.
- D. \$157,000.

$$47,000 + 32,000 = \$79,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

68. (Appendix 11A) What will be the total internal failure cost appearing on the quality cost report?

- A. \$85,000.
- B. \$127,000.
- C. \$146,000.
- D.** \$217,000.

$$93,000 + 29,000 + 95,000 = \$217,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

69. (Appendix 11A) What will be the total external failure cost appearing on the quality cost report?

- A. \$80,000.
- B. \$107,000.**
- C. \$324,000.
- D. \$481,000.

$$56,000 + 51,000 = \$107,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

Faust Company's quality cost report is to be based on the following data:

Quality engineering	\$68,000
Quality circles	\$35,000
Supervision of testing and inspection activities	\$72,000
Net cost of scrap	\$76,000
Test and inspection of in-process goods	\$6,000
Liability arising from defective products	\$3,000
Warranty repairs and replacements	\$56,000
Debugging software errors	\$68,000
Rework labour and overhead	\$19,000

70. (Appendix 11A) What will be the total prevention cost appearing on the quality cost report?

- A. \$41,000.
- B. \$103,000.**
- C. \$107,000.
- D. \$140,000.

$$68,000 + 35,000 = \$103,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

71. (Appendix 11A) What will be the total appraisal cost appearing on the quality cost report?

- A. \$74,000.
- B. \$78,000.**
- C. \$81,000.
- D. \$181,000.

$$72,000 + 6,000 = \$78,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

72. (Appendix 11A) What will be the total internal failure cost appearing on the quality cost report?

- A. \$71,000.
- B. \$74,000.
- C. \$132,000.
- D. \$163,000.**

$$76,000 + 68,000 + 19,000 = \$163,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

73. (Appendix 11A) What will be the total external failure cost appearing on the quality cost report?

- A.** \$59,000.
- B. \$79,000.
- C. \$22,000.
- D. \$403,000.

$$3,000 + 56,000 = \$59,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

This Company's quality cost report is to be based on the following data:

Liability arising from defective products	\$65,000
Lost sales due to poor quality	\$61,000
Test and inspection of in-process goods	\$57,000
Quality circles	\$27,000
Net cost of spoilage	\$103,000
Debugging software errors	\$39,000
Rework labour and overhead	\$105,000
Final product testing and inspection	\$42,000
Statistical process control activities	\$71,000

74. (Appendix 11A) What will be the total prevention cost appearing on the quality cost report?

- A. \$84,000.
- B. \$92,000.
- C. \$98,000.**
- D. \$113,000.

$$27,000 + 71,000 = \$98,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

75. (Appendix 11A) What will be the total appraisal cost appearing on the quality cost report?

- A.** \$99,000.
- B. \$155,000.
- C. \$170,000.
- D. \$197,000.

$$57,000 + 42,000 = \$99,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

76. (Appendix 11A) What will be the total internal failure cost appearing on the quality cost report?

- A. \$104,000.
- B. \$147,000.
- C. \$166,000.
- D.** \$247,000.

$$103,000 + 39,000 + 105,000 = \$247,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

77. (Appendix 11A) What will be the total external failure cost appearing on the quality cost report?

- A. \$100,000.
- B. \$126,000.**
- C. \$373,000.
- D. \$570,000.

$$65,000 + 61,000 = \$126,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

Westmore Company has two Service Departments and two Operating Departments. Budgeted costs and other data relating to these departments are presented below:

	Building & Grounds	Personnel	Operating A	Operating B
Departmental costs	\$54,000	\$200,000	\$650,000	\$800,000
Square Metres Occupied	1,000	3,000	12,000	15,000
Number of Employees	10	5	45	55
Direct Labour Hours			76,000	92,000

The costs of Building & Grounds are allocated first on the basis of square metres of space occupied. Personnel costs are allocated on the basis of number of employees. The departmental costs for the Operating Departments are overhead costs. Predetermined overhead rates in the Operating Departments are calculated on the basis of direct labour hours.

78. (Appendix 11A) Assume that the company uses the direct method of allocating Service Department costs to Operating Departments. How much Building & Grounds cost would be allocated to Operating Department A?

- A. \$20,903.
- B. \$21,600.
- C. \$24,000.**
- D. \$29,700.

$$\$54,000 * 12,000/27,000 = \$24,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-08 Allocate service department costs to operating departments using the direct method.

Topic 11-62 Interdepartmental Services

79. (Appendix 11A) Assume that the company uses the step-down method of allocating Service Department costs to Operating Departments, and Building and Grounds costs are allocated first. How much Personnel Department cost would be allocated to Operating Department A?

- A. \$0.
- B. \$90,000.
- C. \$92,430.**
- D. \$205,400.

$$(200,000 + 54,000 * 3,000/30,000) * 45/100 = \$92,430.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

80. (Appendix 11A) Assume that the company uses the step-down method of allocating Service Department costs to Operating Departments, and Building and Grounds costs are allocated first. How much Personnel Department cost would be allocated to Operating Department B?

- A. \$0.
- B. \$107,368.
- C. \$107,590.
- D.** \$112,970.

$$(200,000 + 54,000 * 3,000/30,000) * 55/100 = \$112,970.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

81. (Appendix 11A) Assume again that the company uses the step-down method. What would be the total amount of cost allocated from the two Service Departments to the Operating Departments for the year?

- A.** \$254,000.
- B. \$850,000.
- C. \$1,450,000.
- D. \$1,704,000.

$$54,000 + 200,000 = \$254,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Easy

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

82. The following data are available for the South Division of Redride Products, Inc. and the single product it makes:

Unit Selling Price	\$20
Variable Cost per Unit	\$12
Annual Fixed Costs	\$280,000
Average Operating Assets	\$1,500,000

How many units must South sell each year to have an ROI of 16%?

- A. 52,000 units.
- B. 65,000 units.**
- C. 240,000 units.
- D. 1,300,000 units.

$$(280,000 + 1,500,000 * .16) / (20 - 12) = 65,000 \text{ units.}$$

Note: Students will need to have an understanding of CVP analysis from chapter 4.

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

83. The following data are available for the North Division of Chemicals Products, Inc. and the single product it makes:

Unit Selling Price	\$25
Variable Cost per Unit	\$15
Annual Fixed Costs	\$320,000
Average Operating Assets	\$1,500,000

How many units must South sell each year to have an ROI of 18%?

- A.** 32,760 units.
- B. 35,760 units.
- C. 240,000 units.
- D. 1,300,000 units.

$$(320,000 + 1,500,000 * .18) / (25 - 15) = 32,760 \text{ units.}$$

Note: Students will need to have an understanding of CVP analysis from chapter 4.

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

84. Division B had an ROI last year of 15%. The division's minimum required rate of return is 10%. If the division's average operating assets last year were \$450,000, what was the division's residual income for last year?

- A. \$22,500.
- B. \$37,500.
- C. \$45,000.
- D. \$67,500.

$$450,000 * .15 - 450,000 * .10 = \$22,500.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

85. Reed Company reported total sales of \$150,000 last year and a return on investment (ROI) of 12%. If the company's turnover was 3, what was the company's operating income for the year?

- A. \$2,000.
- B. \$6,000.**
- C. \$18,000.
- D. It is impossible to determine from the data given.

$$(150,000 * .12) / 3 = \$6,000.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

86. Sales and average operating assets for Company P and Company Q are given below:

	Sales Average	Operating Assets
Company P	\$20,000	\$8,000
Company Q	\$50,000	\$10,000

What is the margin that each company (Company P and Company Q, respectively) will have to earn in order to generate a return on investment of 20%?

A. 2.5% and 5%.

B. 8% and 4%.

C. 12% and 16%.

D. 50% and 100%.

$$P = .20 / (20,000 / 8,000) = 8\%. \quad Q = .20 / (50,000 / 10,000) = 4\%.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

87. Last year, a company had shareholders' equity of \$160,000, operating income of \$16,000, and sales of \$100,000. The turnover was 0.5. What was the return on investment (ROI)?

- A. 7%.
- B. 8%.**
- C. 9%.
- D. 10%.

Op. Assets = $100,000 / .5 = 200,000$. ROI = $16,000 / 200,000 = 8\%$.

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

88. A company had the following results last year: sales, \$700,000; return on investment, 28%; and margin, 8%. What were the average operating assets last year?

- A. \$200,000.**
- B. \$540,000.
- C. \$2,450,000.
- D. \$2,500,000.

$.08 * 700,000 / x = .28$ so operating assets = $700,000 / 3.5 = \$200,000$.

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

89. Cable Company had the following results for the year just ended:

Operating Income	\$2,500
Turnover	4
Return on Investment	20%

What were Cable Company's average operating assets during the year?

- A. \$10,000.
- B. \$12,500.**
- C. \$50,000.
- D. \$200,000.

$$2,500 / .20 = \$12,500.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

90. Cumberland Beverage Company had the following results for the year just ended:

Operating Income	\$5,500
Turnover	4
Return on Investment	25%

What were Cumberland Beverage Company's average operating assets during the year?

- A. \$10,000.
- B. \$12,500.
- C. \$22,000.**
- D. \$200,000.

$$2,500 / .20 = \$22,000.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

91. For the past year, Largo Company recorded sales of \$750,000 and average operating assets of \$375,000. What margin did Largo Company need to earn to achieve an ROI of 15%?

- A. 2.00%
- B. 7.50%**
- C. 9.99%
- D. 15.00%

$$\text{Margin} = .15 / (750,000 / 375,000) = 7.5\%.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

92. The Northern Division of the Smith Company had average total operating assets of \$150,000 last year. Its minimum required rate of return was 12%. The division reported operating income of \$20,000. What was the residual income for the Northern Division last year?

- A. \$2,000.**
- B. \$5,000.
- C. \$18,000.
- D. \$20,000.

$$20,000 - 150,000 * .12 = \$2,000.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

93. (Appendix 11A) Division X makes a part that it sells to customers outside of the company. Data concerning this part appear below:

Selling Price to Outside Customers	\$75
Variable Cost per Unit	\$50
Total Fixed Costs	\$400,000
Capacity in Units	25,000

Division Y of the same company would like to use the part manufactured by Division X in one of its products. Division Y currently purchases a similar part made by an outside company for \$70 per unit and would substitute the part made by Division X. Division Y requires 5,000 units of the part each period. Division X can already sell all of the units it can produce on the outside market. What should be the lowest acceptable transfer price from the perspective of Division X?

- A. \$16.
- B. \$50.
- C. \$66.
- D. \$75.**

$$50 + ((75 - 50) * 5,000) / 5,000 = \$75.$$

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Medium

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

Topic 11-46 Transfers to the Selling Division at Cost

94. (Appendix 11A) Division X makes a part that it sells to customers outside of the company. Data concerning this part appear below:

Selling Price to Outside Customers	\$50
Variable cost per Unit	\$30
Total Fixed Costs	\$400,000
Capacity in Units	25,000

Division Y of the same company would like to use the part manufactured by Division X in one of its products. Division Y currently purchases a similar part made by an outside company for \$49 per unit and would substitute the part made by Division X. Division Y requires 5,000 units of the part each period. Division X has ample excess capacity to handle all of Division Y's needs without any increase in fixed costs and without cutting into outside sales. According to the transfer pricing formula, what is the lower limit on the transfer price?

- A. \$30.
- B. \$46.
- C. \$49.
- D. \$50.

Transfer price = 30 + 0 = \$30.

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Easy

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

Topic 11-46 Transfers to the Selling Division at Cost

95. (Appendix 11A) Division A makes a part that it sells to customers outside of the company. Data concerning this part appear below:

Selling Price to Outside Customers	\$40
Variable cost per Unit	\$30
Total Fixed Costs	\$10,000
Capacity in Units	20,000

Division B of the same company would like to use the part manufactured by Division A in one of its products. Division B currently purchases a similar part made by an outside company for \$38 per unit and would substitute the part made by Division A. Division B requires 5,000 units of the part each period. Division A has ample capacity to produce the units for Division B without any increase in fixed costs and without cutting into sales to outside customers. If Division A sells to Division B rather than to outside customers, the variable cost per unit would be \$1 lower. What should be the lowest acceptable transfer price from the perspective of Division A?

- A. \$29.
- B. \$30.
- C. \$38.
- D. \$40.

30 - 1 = \$29.

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Medium

Learning Objective 11-06 Determine the range, if any, within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

Topic 11-46 Transfers to the Selling Division at Cost

96. (Appendix 11A) Division X of Charter Corporation makes and sells a single product that is used by manufacturers of forklift trucks. Presently, it sells 12,000 units per year to outside customers at \$24 per unit. The annual capacity is 20,000 units, and the variable cost to make each unit is \$16. Division Y of Charter Corporation would like to buy 10,000 units a year from Division X to use in its products. There would be no cost savings from transferring the units within the company rather than selling them on the outside market. What should be the lowest acceptable transfer price from the perspective of Division X?

- A. \$16.00.
- B. \$17.60.**
- C. \$21.40.
- D. \$24.00.

$$16 + \{(24 - 16) * (10,000 - 8,000)\} / 10,000 = \$17.60.$$

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Hard

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

Topic 11-46 Transfers to the Selling Division at Cost

97. (Appendix 11A) Division P of Turbo Corporation has the capacity for making 75,000 wheel sets per year and regularly sells 60,000 each year on the outside market. The regular sales price is \$100 per wheel set, and the variable production cost per unit is \$65. Division Q of Turbo Corporation currently buys 30,000 wheel sets (of the kind made by Division P) yearly from an outside supplier at a price of \$90 per wheel set. Division Q would like to buy the 30,000 wheel sets it needs annually from Division P at \$87 per wheel set. What would be the change in annual operating income for the company as a whole, compared to what it is currently?

- A. \$135,000.
- B. \$225,000.**
- C. \$600,000.
- D. \$750,000.

Min. T.P. = $65 + \{(100 - 65) * (30,000 - 15,000)\} / 30,000 = 82.50$. Change in Op. Income = $(90 - 82.50) * 30,000 = \$225,000$.

Blooms Analyze

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Hard

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

98. (Appendix 11A) Division A of Harkin Company has the capacity for making 3,000 motors per month and regularly sells 1,950 motors each month to outside customers at a contribution margin of \$62 per motor. The variable cost is \$40 per motor. Division B of Harkin Company would like to obtain 1,400 motors each month from Division A. What should be the lowest acceptable transfer price from the perspective of Division A?

- A. \$15.50.
- B. \$40.00.
- C. \$55.50.**
- D. \$62.00.

TP = VC + opportunity cost = $40 + \{[1,400 - (3,000 - 1,950)] * 62\} / 1,400 = \55.50 .

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Hard

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

Topic 11-46 Transfers to the Selling Division at Cost

The following information is available on Company A:

Sales	\$900,000
Operating Income	\$36,000
Shareholders' Equity	\$100,000
Average Operating Assets	\$180,000
Minimum Required Rate of Return	15%

99. What is Company A's residual income?

- A. \$9,000.
- B. \$21,000.
- C. \$24,000.
- D. \$45,000.

$$36,000 - 180,000 * .15 = \$9,000.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

100. What is Company A's return on investment (ROI)?

- A. 4%.
- B. 15%.
- C. 20%.
- D. 36%.

$$36,000/180,000 = 20\%.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

101. What is the turnover for Company A?

- A. 25.
- B. 5.**
- C. 9.
- D. 2.

$$\$900,000/180,000 = 5.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

The Axle Division of LaBate Company makes and sells only one product. Annual data on the Axle Division's single product follow:

Unit Selling Price	\$50
Unit Variable Cost	\$30
Total Fixed Costs	\$200,000
Average Operating Assets	\$750,000
Minimum Required Rate of Return	12%

102. If Axle sells 15,000 units per year, what would be the residual income?

- A. \$10,000.
- B. \$30,000.
- C. \$50,000.
- D. \$100,000.

$$[15,000 * (50 - 30) - 200,000] - 750,000 * .12 = \$10,000.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

103. If Axle sells 16,000 units per year, what would be the return on investment?

- A. 12%.
- B. 15%.
- C. 16%.**
- D. 18%.

$$(16,000 * (50 - 30) - 200,000) / 750,000 = 16\%.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

104. Suppose the manager of Axle desires a return on investment of 22%. In order to achieve this goal, Axle must sell how many units per year?

- A. 14,500 units.
- B. 16,750 units.
- C. 18,250 units.**
- D. 19,500 units.

$$(200,000 + 750,000 * .22) / (50 - 30) = 18,250 \text{ units.}$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

105. Suppose the manager of Axle desires an annual residual income of \$45,000. In order to achieve this, Axle should sell how many units per year?

- A. 14,500 units.
- B. 16,750 units.**
- C. 18,250 units.
- D. 19,500 units.

$$\text{Op. Income} = 45,000 + 750,000 * .12 = \$135,000.$$

$$\text{\#units} = (200,000 + 135,000)/(50 - 30) = 16,750 \text{ units.}$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

Estes Company has assembled the following data for its divisions for the past year:

	Division A	Division B
Average Operating Assets	\$500,000	?
Sales	?	\$520,000
Operating Income	\$100,000	\$20,300
Turnover	1.25	4
Margin	?	3.9%
Minimum Required Rate of Return	14%	?
Residual Income	?	\$6,000

Chapter 11 - Reporting for Control

106. What were Division A's sales?

- A. \$125,000.
- B. \$200,000.
- C. \$400,000.
- D.** \$625,000.

$$500,000 * 1.25 = \$625,000.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

107. What was Division A's residual income?

- A. \$20,000.
- B. \$30,000.**
- C. \$35,000.
- D. \$45,000.

$$100,000 - 500,000 * .14 = \$30,000.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

108. What were Division B's average operating assets rounded to the nearest dollars?

- A. \$81,200.
- B. \$130,128.**
- C. \$1,333,333.
- D. \$2,080,000.

$$ROI = 3.9\% * 4 = 15.6\%. \text{ Avg. Op. Assets} = 20,300 / .156 = \$130,128.20.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

The Holmes Division recorded operating data as follows for the past year:

Sales	\$200,000
Operating Income	\$25,000
Average Operating Assets	\$100,000
Shareholders' Equity	\$80,000
Residual Income	\$13,000

109. For the past year, what was the return on investment?

- A. 15.75%.
- B. 20.50%.
- C. 25.00%**
- D. 31.25%.

$$25,000/100,000 = 25\%.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

Chapter 11 - Reporting for Control

110. For the past year, what was the margin?

- A. 12.50%.
- B. 13.00%.
- C. 14.75%.
- D. 15.00%.

$$25,000/200,000 = 12.5\%.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

111. For the past year, what was the turnover?

- A.** 2.
- B. 4.
- C. 10.
- D. 25.

$$200,000/100,000 = 2.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

112. For the past year, what was the minimum required rate of return?

- A. 11%.
- B.** 12%.
- C. 13%.
- D. 14%.

$$(25,000 - 13,000)/100,000 = 12\%.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

The Baily Division recorded operating data as follows for the past two years:

Chapter 11 - Reporting for Control

	Year 1	Year 2
Sales	?	\$1,200,000
Shareholders' Equity	\$540,000	\$720,000
Average Operating Assets	\$600,000	?
Margin	15%	?
Return on Investment	22.5%	18%

Baily Division's turnover was exactly the same in both Year 1 and Year 2.

113. What were the sales in Year 1? (Round your intermediate calculations to one decimal place.)

- A. \$400,000.
- B. \$750,000.
- C. \$900,000.**
- D. \$1,200,000.

Turnover = $.225 / .15 = 1.5$. Sales = $1.5 * 600,000 = \$900,000$.

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

114. What was the operating income in Year 1?

- A. \$90,000.
- B. \$135,000.**
- C. \$140,000.
- D. \$150,000.

$900,000 * .15 = \$135,000$.

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

115. What was the margin in Year 2?

- A. 12.00%.
- B. 18.75%.
- C. 22.50%.
- D. 27.00%.

$$.18/1.5(\text{turnover}) = 12\%.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

116. What were the average operating assets in Year 2?

- A. \$720,000.
- B. \$750,000.
- C. \$800,000.
- D. \$900,000.

$$1,200,000/1.5(\text{turnover}) = \$800,000.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

The following selected data pertain to the belt division of Allen Corp. for last year:

Sales	\$500,000
Average Operating Assets	\$200,000
Operating Income	\$80,000
Turnover	2.5
Minimum Required Return	20%

117. What was the return on investment?

- A. 15%.
- B. 16%.
- C. 20%.
- D.** 40%.

$$80,000/200,000 = 40\%.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

118. What was the residual income?

- A.** \$40,000.
- B. \$80,000.
- C. \$100,000.
- D. \$420,000.

$$80,000 - 200,000 * .20 = \$40,000.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

Chapter 11 - Reporting for Control

The following selected data pertain to Beck Co.'s Beam Division for last year:

Sales	\$400,000
Variable Expenses	\$100,000
Traceable Fixed Expenses	\$250,000
Average Operating Assets	\$200,000
Minimum Required Rate of Return	20%

119. What was the residual income?

- A. \$10,000.
- B. \$40,000.
- C. \$50,000.
- D. \$80,000.

$$(400,000 - 100,000 - 250,000) - 200,000 * .20 = \$10,000.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

120. What was the return on investment?

- A. 12.5%.
- B. 20.0%.
- C. 25.0%.
- D. 40.0%.

$$(400,000 - 100,000 - 250,000)/200,000 = 25.0\%.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

The Northern Division of the Gordon Company reported the following data for last year:

Sales	\$900,000
Shareholders' Equity	\$320,000
Operating Expenses	\$700,000
Average Operating Assets	\$500,000
Interest Expense	\$50,000
Tax Expense	\$60,000
Minimum Required Rate of Return	15%

121. What was the return on investment last year for the Northern Division?

- A. 18.000%.
- B. 28.125%.
- C. 40.000%.
- D. 62.500%.

$$(900,000 - 700,000)/500,000 = 40.00\%.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

122. What was the residual income for the Northern Division last year?

- A. \$48,000.
- B. \$90,000.
- C. \$125,000.**
- D. \$135,000.

$$900,000 - 700,000 - 500,000 * .15 = \$125,000.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

Harstin Corporation has provided the following data for the past year:

Sales	\$625,000
Gross Margin	\$70,000
Operating Income	\$50,000
Shareholders' Equity	\$90,000
Average Operating Assets	\$250,000
Residual Income	\$20,000

Chapter 11 - Reporting for Control

123. What was the margin for the past year?

- A.** 8.0%.
- B. 11.2%.
- C. 14.4%.
- D. 19.2%.

$$50,000/625,000 = 8\%.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

124. What was the return on investment for the past year?

- A. 8%.
- B.** 20%.
- C. 28%.
- D. 36%.

$$50,000/250,000 = 20\%.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

125. What was the turnover for the past year?

- A. 1.40.
- B. 2.50.**
- C. 2.98.
- D. 6.94.

$$625,000/250,000 = 2.50.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

126. What was the minimum required rate of return for the past year?

- A. 8%.
- B. 12%.**
- C. 36%.
- D. 40%.

$$(50,000 - 20,000)/250,000 = 12\%.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

The Millard Division's operating data for the past two years are provided below:

Chapter 11 - Reporting for Control

	Year 1	Year 2
Return on Investment	12%	36%
Shareholders' Equity	\$800,000	\$500,000
Operating Income	?	\$360,000
Turnover	?	3
Margin	?	?
Sales	\$3,200,000	?

Millard Division's margin in Year 2 was 150% of the margin in Year 1.

127. What was the operating income for Year 1?

- A. \$240,000.
- B. \$256,000.**
- C. \$384,000.
- D. \$768,000.

Yr. 2 margin = $.36/3 = 12\%$. Yr. 1 margin = $.12/1.5 = 8\%$. Op. Income = $3,200,000 * .08 = \$256,000$.

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

128. What was the turnover for Year 1?

- A. 1.2.
- B. 1.5.**
- C. 3.0.
- D. 4.0.

$.12 \text{ margin of year 2} / .08 (\text{margin of year 1}) = 1.5$.

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

129. What were the sales for Year 2?

- A. \$1,200,000.
- B. \$3,000,000.**
- C. \$3,200,000.
- D. \$3,333,333.

$$360,000 / .12 (\text{margin of year 2}) = \$3,000,000.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

130. What were the average operating assets for Year 2?

- A. \$1,000,000.**
- B. \$1,080,000.
- C. \$1,200,000.
- D. \$1,388,889.

$$3,000,000 / 3 = \$1,000,000.$$

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

Russet Company has two Service Departments and two Producing Departments. Budgeted costs and budgeted activity in the various departments for the most recent year are presented below:

	Custodial Services	Cafeteria	Cutting Department	Assembly Department
Overhead Costs	\$252,000	\$140,000	\$600,000	\$900,000
Square Metres of Space Occupied	1,000	2,000	8,000	10,000
Number of Employees	20	30	150	200
Machine Hour			40,000	60,000

Service Department costs are allocated to Producing Departments with the costs of Custodial Services allocated first on the basis of square metres of space occupied. The costs of the Cafeteria are allocated on the basis of number of employees. Predetermined overhead rates in the Cutting and Assembly departments are based on machine hours. Round all calculations to the nearest dollar.

131. (Appendix 11A) Under the direct method of allocation, what would be the amount of Custodial Services cost allocated to the Cutting Department?

- A. \$0.
- B. \$96,000.
- C. \$100,800.
- D. \$112,000.**

$$252,000 * 8,000/18,000 = \$112,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-08 Allocate service department costs to operating departments using the direct method.

Topic 11-62 Interdepartmental Services

132. (Appendix 11A) Under the direct method of allocation, what would be the predetermined overhead rate for the year in the Assembly Department? (Round your final answer to the nearest two decimal places)

- A. \$3.17.
- B. \$3.67.
- C. \$18.17.
- D.** \$18.67.

$$(\$900,000 + 252,000 * 10/18 + 140,000 * 200/350)/60,000 \text{ hrs} = \$18.67.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-08 Allocate service department costs to operating departments using the direct method.

Topic 11-62 Interdepartmental Services

133. (Appendix 11A) Under the step-down method of allocation, what would be the amount of Custodial Services cost allocated to the Assembly Department?

- A. \$0.
- B. \$120,000.
- C.** \$126,000.
- D. \$140,000.

$$252,000 * 10,000/20,000 = \$126,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

Division A makes a part with the following characteristics:

Production Capacity in Units	15,000 units
Selling Price to Outside Customers	\$25
Variable Cost per Unit	\$18
Total Fixed Costs	\$60,000

Division B, another division of the same company, would like to purchase 5,000 units of the part each period from Division A. Division B is now purchasing these parts from an outside supplier at a price of \$24 each.

134. (Appendix 11A) Suppose that Division A has ample idle capacity to handle all of Division B's needs without any increase in fixed costs and without cutting into sales to outside customers. If Division B continues to purchase parts from an outside supplier rather than from Division A, what will be the effect on the operating income of the company as a whole?

- A. Lower by \$30,000 each period.
- B. Lower by \$10,000 each period.
- C. Higher by \$15,000 each period.
- D. Lower by \$35,000 each period.

$(24 - 18) * 5,000 = \$30,000$ (Lower by \$30,000 each period).

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Medium

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

Topic 11-46 Transfers to the Selling Division at Cost

135. (Appendix 11A) Suppose that Division A is operating at capacity and can sell all of its output to outside customers at its usual selling price. If Division A sells the parts to Division B at \$24 per unit (Division B's outside price), what will be the effect on the operating income of company as a whole?

- A. Higher by \$5,000 each period.
- B. Lower by \$15,000 each period.
- C. Lower by \$5,000 each period.
- D. There will be no change in the status of the company as a whole.

$\text{Lowest TP} = 18 + [(25 - 18) * 5,000] / 5,000 = 25$. Effect = $(24 - 25) * 5,000 = \$5,000$. (Lower by \$5,000 each period.)

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Medium

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

Division A produces a part with the following characteristics:

Capacity in Units	50,000 units
Selling Price per Unit	\$30
Variable Costs per Unit	\$18
Fixed Costs per Unit	\$3

Division B, another division in the company, would like to buy this part from Division A. Division B is presently purchasing the part from an outside source at \$28 per unit. If Division A sells to Division B, \$1 in variable costs can be avoided.

136. (Appendix 11A) Suppose Division A is currently operating at capacity and can sell all of the units it produces on the outside market for its usual selling price. From the point of view of Division A, any sales to Division B should be priced no lower than which of the following?

- A. \$20.
- B. \$27.
- C. \$28.
- D.** \$29.

$$(18 - 1) + (30 - 18) = \$29.$$

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Medium

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

137. (Appendix 11A) Suppose that Division A has ample idle capacity to handle all of Division B's needs without any increase in fixed costs and without cutting into its sales to outside customers. From the point of view of Division A, any sales to Division B should be priced no lower than which of the following?

- A. \$17.
- B. \$18.
- C. \$29.
- D. \$30.

18 - 1 = \$17.

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Medium

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

The Vega Division of Ace Company makes wheels that can either be sold to outside customers or transferred to the Walsh Division of Ace Company. Last month, the Walsh Division bought all 4,000 of its wheels from the Vega Division for \$42 each. The following data are available from last month's operations for the Vega Division:

Capacity	12,000 wheels
Selling Price per Wheel to Outside Customers	\$45
Variable Costs per Wheel Sold to Outside Customers	\$30

If the Vega Division sells wheels to the Walsh Division, Vega can avoid \$2 per wheel in sales commissions. An outside supplier has offered to supply wheels to the Walsh Division for \$41 each.

138. (Appendix 11A) Suppose that the Vega Division has ample idle capacity so that transfers to the Walsh Division would not cut into its sales to outside customers. What should be the lowest acceptable transfer price from the perspective of the Vega Division?

- A.** \$28.
- B. \$30.
- C. \$42.
- D. \$45.

30 - 2 = \$28.

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Medium

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

139. (Appendix 11A) What is the maximum price per wheel that Walsh should be willing to pay Vega?

- A. \$28.
- B.** \$41.
- C. \$42.
- D. \$45.

Outside suppliers price of \$41.

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Medium

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

140. (Appendix 11A) Suppose that Vega can sell 9,000 wheels each month to outside consumers, so transfers to the Walsh Division cut into outside sales. What should be the lowest acceptable transfer price from the perspective of the Vega Division?

- A. \$28.00.
- B. \$31.75.**
- C. \$41.00.
- D. \$42.00.

$$\{(30 - 2) + [4,000 - (12,000 - 9,000)] * (45 - 30)\} / 4,000 = \$31.75.$$

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Hard

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

The Post Division of the M.T. Woodhead Company produces basic posts that can be sold to outside customers or sold to the Lamp Division of the M.T. Woodhead Company. Last year, the Lamp Division bought all of its 25,000 posts from the Post Division at \$1.50 each. The following data are available for last year's activities of the Post Division:

Capacity in Units	300,000 posts
Selling Price per Post to Outside Customers	\$1.75
Variable Costs per Post	\$0.90
Fixed Costs, Total	\$150,000

The total fixed costs would be the same for all the alternatives considered below.

141. (Appendix 11A) Suppose there is ample capacity so that transfers of the posts to the Lamp Division do not cut into sales to outside customers. What is the lowest transfer price that would not reduce the operating income of the Post Division?

- A. \$0.90.
- B. \$1.35.
- C. \$1.41.
- D. \$1.75.

$$0.90 + 0 = \$0.90.$$

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Medium

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

Topic 11-46 Transfers to the Selling Division at Cost

142. (Appendix 11A) Suppose the transfer of posts to the Lamp Division will cut into sales to outside customers by 15,000 units. What is the lowest transfer price that would not reduce the operating income of the Post Division?

- A. \$0.90.
- B. \$1.35.
- C. \$1.41.
- D. \$1.75.

$$0.90 + [15,000 * (1.75 - .90)/25,000] = \$1.41.$$

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Hard

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

Topic 11-46 Transfers to the Selling Division at Cost

143. (Appendix 11A) Suppose the transfer of posts to the Lamp Division will cut into sales to outside customers by 15,000 units. Further suppose that an outside supplier is willing to provide the Lamp Division with basic posts at \$1.45 each. If the Lamp Division chooses to buy all of its posts from the outside supplier instead of the Post Division, what will be the change in operating income for the company as a whole?

- A.** \$1,000 decrease.
- B. \$1,250 decrease.
- C. \$10,250 increase.
- D. \$13,750 decrease.

$$(1.41 - 1.45) * 25,000 = (\$1,000).$$

Blooms Apply

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Hard

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

Topic 11-46 Transfers to the Selling Division at Cost

The James Company has four departments with data as follows:

	Service Departments		Operating Departments	
	Cafeteria	Maintenance	Milling	Finishing
Budgeted Costs	\$12,000	\$10,000	\$42,000	\$38,000
Number of Employees	12	10	84	66
Labour Hours	1,500	1,250	5,250	4,750

144. (Appendix 11A) Suppose Maintenance Department costs are allocated on the basis of labour hours. What would be the amount of cost allocated to Milling from Maintenance under the direct method?

- A. \$5,250.
- B. \$5,600.
- C. \$5,700.
- D. \$6,720.

$$\$10,000 * 5,250 / (5,250 + 4,750) = \$5,250.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-08 Allocate service department costs to operating departments using the direct method.

Topic 11-62 Interdepartmental Services

145. (Appendix 11A) Suppose Cafeteria Department costs are allocated on the basis of number of employees and that the step-down method is used with costs of the Cafeteria Department allocated first. What would be the amount of cost allocated from the Cafeteria Department to Maintenance Department?

- A. \$0.
- B. \$625.
- C. \$698.
- D.** \$750.

$$\$12,000 * 10 / (10 + 84 + 66) = \$750.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

Anderson Company has two Service Departments and two Producing Departments. The costs of the Personnel Department are allocated to other departments on the basis of the number of employees in the departments. Departments and number of employees are as follows:

	Employees
Personnel Department	30
Engineering Department	90
Producing Department No. 1	590
Producing Department No. 2	<u>290</u>
Total Employees	<u>1,000</u>

146. (Appendix 11A) Total costs in the Personnel Department are \$900,000 per year. Under the step-down method, the costs of the Personnel Department are allocated before the costs of the Engineering Department are allocated. What would be the amount of this cost allocated to the Engineering Department under the step-down method, rounded to the nearest dollar?

- A. \$0.
- B. \$81,000.
- C. \$83,505.
- D. \$92,046.

$$\$900,000 * 90 / (90 + 590 + 290) = \$83,505.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

147. (Appendix 11A) Total costs in the Personnel Department are \$900,000 per year. Under the step-down method, the costs of the Personnel Department are allocated before the costs of the Engineering Department are allocated. What would be the amount of Personnel Department cost that would be allocated to Producing Department 2 under the step method, rounded to the nearest dollar?

- A. \$0.
- B. \$261,000.
- C. \$269,072.**
- D. \$296,591.

$$900,000 * 290 / (90 + 590 + 290) = \$269,072.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

The following information is available on Company B:

Sales	\$950,000
Operating Income	\$56,000
Shareholders' Equity	\$100,000
Average Operating Assets	\$190,000
Minimum Required Rate of Return	20%

Chapter 11 - Reporting for Control

148. What is Company B's residual income?

- A. \$9,000.
- B.** \$18,000.
- C. \$24,000.
- D. \$45,000.

$$36,000 - 180,000 * .15 = \$18,000.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

149. What is Company B's return on investment (ROI) rounded to the nearest dollar?

- A. 4%.
- B. 15%.
- C. 29%.**
- D. 36%.

$$56,000/190,000 = 29.47\%.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

150. What is the turnover for Company B?

- A. 25.
- B. 5.**
- C. 9.
- D. 2.

$$\$950,000/190,000 = 5.$$

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Financial Services Company has two Service Departments and two Operating Departments. Budgeted costs and other data relating to these departments are presented below:

	Building & Grounds	Personnel	Operating A	Operating B
Departmental costs	\$64,000	\$200,000	\$650,000	\$800,000
Square Metres Occupied	1,000	3,000	12,000	18,000
Number of Employees	10	5	45	55
Professional Hours			76,000	92,000

The costs of Building & Grounds are allocated first on the basis of square metres of space occupied. Personnel costs are allocated on the basis of number of employees. The departmental costs for the Operating Departments are overhead costs. Predetermined overhead rates in the Operating Departments are calculated on the basis of professional hours.

151. (Appendix 11A) Assume that the company uses the direct method of allocating Service Department costs to Operating Departments. How much Building & Grounds cost would be allocated to Operating Department A?

- A. \$20,903.
- B. \$21,600.
- C. \$25,600.**
- D. \$29,700.

$$\$64,000 * 12,000/30,000 = \$25,600.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-08 Allocate service department costs to operating departments using the direct method.

Topic 11-62 Interdepartmental Services

152. (Appendix 11A) Assume that the company uses the step-down method of allocating Service Department costs to Operating Departments, and Building and Grounds costs are allocated first. How much Personnel Department cost would be allocated to Operating Department A?

- A. \$0.
- B. \$90,000.
- C. \$92,880.**
- D. \$205,400.

$$(200,000 + 64,000 * 3,000/30,000) * 45/100 = \$92,880.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

153. (Appendix 11A) Assume that the company uses the step-down method of allocating Service Department costs to Operating Departments, and Building and Grounds costs are allocated first. How much Personnel Department cost would be allocated to Operating Department B?

- A. \$0.
- B. \$107,368.
- C. \$107,590.
- D.** \$113,520.

$$(200,000 + 64,000 * 3,000/30,000) * 55/100 = \$113,520.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

154. (Appendix 11A) Assume again that the company uses the step-down method. What would be the total amount of cost allocated from the two Service Departments to the Operating Departments for the year?

- A.** \$264,000.
- B. \$850,000.
- C. \$1,450,000.
- D. \$1,704,000.

$$64,000 + 200,000 = \$264,000.$$

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Easy

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

155. Which of the following is the main assumption that is made about managers in general in support of decentralization?

- A. Managers at the local/divisional level will act in the best interest of the organization.
- B. Top managers at corporate headquarters will act in the best interest of the organization.
- C. Top managers at corporate headquarters have access to better information for operational decisions.
- D. Managers at the local/divisional level have access to better information for operational decisions.**

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-04 Decentralization and Segment Reporting

156. Reardon Retail Company consists of two stores: A and B. During March, Store A had sales of \$80,000, a contribution margin ratio of 30%, and a segment margin of \$11,000. The company as a whole had sales of \$200,000, a contribution margin ratio of 36%, and segment margins for the two stores totalling \$31,000. If net income for the company was \$15,000 for the month, what were the traceable fixed expenses in Store B?

- A. \$16,000.
- B. \$20,000.
- C. \$28,000.**
- D. \$31,000.

CM for B = $200,000 * .36 - 80,000 * .30 = 48,000$. Segment margin B = $31,000 - 11,000 = 20,000$. Traceable FC for B = $48,000 - 20,000 = \$28,000$.

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-11 Identifying Traceable Fixed Costs

157. Leis Retail Company has two stores: M and N. During March, Store N had sales of \$180,000, a segment margin of 30%, and traceable fixed expenses of \$26,000. The company as a whole had a contribution margin ratio of 25% and \$120,000 in total contribution margin. Based on this information, what were the total variable expenses in Store M for the month?
- A. \$140,000.
B. \$260,000.
C. \$300,000.
D. \$360,000.

Total VC = $120,000 / .25 * .75 = 360,000$. VC of N = $180,000 - (180,000 * .3 + 26,000) = 100,000$. VC of M = $360,000 - 100,000 = \$260,000$.

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-15 Segment Margin

True / False Questions

158. Service departments, such as accounting, finance, general administration, legal, and personnel, are usually considered to be cost centres. In addition, manufacturing facilities are often considered to be cost centres.

TRUE

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

Difficulty Medium

Learning Objective 11-02 Differentiate among responsibility centres; such as cost centres; profit centres; and investment centres; and explain how performance is measured in each.

Topic 11-24 Cost Centre

159. In responsibility accounting, each segment in an organization should be charged with the costs for which it is responsible and over which it has control plus its share of common organizational costs.

FALSE

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-04 Decentralization and Segment Reporting

Topic 11-06 Different Levels of Segmented Statements

160. Some managers believe that residual income is superior to return on investment as a means of measuring performance, as it encourages the manager to make investment decisions that are more consistent with the interests of the company as a whole.

TRUE

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-30 Understanding Return on Investment

Topic 11-34 Criticisms of Return on Investment

Topic 11-36 Motivation and Residual Income

Topic 11-37 Divisional Comparison and Residual Income

161. The return on investment can ordinarily be improved by either increasing sales, reducing expenses, or reducing operating assets.

TRUE

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-03 Analyze the return on investment.

Topic 11-30 Understanding Return on Investment

Topic 11-31 Example 1 Increased Sales without Any Increase in Operating Assets

Topic 11-32 Example 2 Decreased Operating Expenses with No Change in Sales or Operating Assets

Topic 11-33 Example 3 Invest in Operating Assets to Increase Sales

162. Since the sales figure is neutral in the return on investment (ROI) formula, $ROI = \text{Margin} \times \text{Turnover}$, a change in total sales will NOT affect ROI.

FALSE

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-30 Understanding Return on Investment

Topic 11-31 Example 1 Increased Sales without Any Increase in Operating Assets

163. Allocations of corporate headquarters expenses to divisions used in return on investment calculations should be limited to the cost of those actual services provided by central headquarters, which the divisions otherwise would have to provide for themselves.

TRUE

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-30 Understanding Return on Investment

Topic 11-34 Criticisms of Return on Investment

164. The use of return on investment as a performance measure may lead managers to make decisions that are NOT in the best interests of the company as a whole.

TRUE

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-30 Understanding Return on Investment

Topic 11-34 Criticisms of Return on Investment

165. Residual income is the operating income that an investment centre earns above the minimum required return on the investment in operating assets.

TRUE

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-36 Motivation and Residual Income

166. There is a growing trend toward greater centralization for effective control as more businesses go global.

FALSE

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-04 Decentralization and Segment Reporting

Topic 11-16 Segment Reporting for Financial Accounting

167. (Appendix 11A) An increase in appraisal costs will usually result in an increase in internal failure costs.

TRUE

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

168. (Appendix 11A) To minimize its total quality costs, a company should usually try to redistribute its quality costs more toward prevention and appraisal.

TRUE

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-56 Distribution of Quality Costs

169. (Appendix 11A) Prevention costs and appraisal costs are incurred in an effort to keep poor quality of conformance from occurring.

TRUE

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

170. (Appendix 11A) Quality of conformance is the degree to which an actual product meets its design specifications and is free of defects or other problems that may affect appearance or performance.

TRUE

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Easy

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-51 Quality of Conformance

Chapter 11 - Reporting for Control

171. (Appendix 11A) Appraisal costs are incurred to identify defective products before they are shipped to customers.

TRUE

Blooms Remember

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Easy

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-53 Appraisal Costs

172. (Appendix 11A) Internal failure costs result when a defective product is used within the company.

FALSE

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-54 Internal Failure Costs

173. (Appendix 11A) External failure costs result when a defective product is shipped to a customer.

TRUE

Blooms Remember

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Easy

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-55 External Failure Costs

174. (Appendix 11A) Ordinarily, managers are NOT aware of the magnitude of their quality costs since these costs cut across departmental lines and are not normally tracked and accumulated by the cost system.

TRUE

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-56 Distribution of Quality Costs

Topic 11-57 Quality Cost Reports

Topic 11-58 Quality Cost Reports in Graphic Form

Topic 11-59 Uses of Quality Cost Information

175. Granting subordinates autonomy and profit responsibility almost invariably also grants them the right to make mistakes.

TRUE

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

Difficulty Hard

Learning Objective 11-02 Differentiate among responsibility centres; such as cost centres; profit centres; and investment centres; and explain how performance is measured in each.

Topic 11-25 Profit Centre

176. The emphasis in the balanced scorecard is on improvement rather than meeting a preset standard.

TRUE

Blooms Remember

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Easy

Learning Objective 11-05 Explain the use of balanced scorecards to assess performance.

Topic 11-40 Common Characteristics of Balanced Scorecards

Topic 11-41 Tying Compensation to the Balanced Scorecard

Topic 11-42 Advantages of Timely Feedback

177. A balanced scorecard should contain every performance measure that can be expected to influence a company's profits.

FALSE

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-05 Explain the use of balanced scorecards to assess performance.

Topic 11-40 Common Characteristics of Balanced Scorecards

Topic 11-41 Tying Compensation to the Balanced Scorecard

Topic 11-42 Advantages of Timely Feedback

178. Many firms tend to adopt a focus or a niche strategy instead of either a cost leadership or a differentiation strategy.

TRUE

Blooms Understand

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-05 Explain the use of balanced scorecards to assess performance.

Topic 11-40 Common Characteristics of Balanced Scorecards

Topic 11-41 Tying Compensation to the Balanced Scorecard

Topic 11-42 Advantages of Timely Feedback

179. (Appendix 11A) When an intermediate market price for a transferred item exists, it represents a lower limit on the charge that should be made on transfers between divisions.

FALSE

Blooms Understand

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Hard

Learning Objective 11-06 Determine the range, if any, within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

180. (Appendix 11A) When a division is operating at full capacity, the transfer price to other divisions should include opportunity costs.

TRUE

Blooms Understand

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Medium

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

181. Assuming that a segment has both variable expenses and traceable fixed expenses, an increase in sales should increase operating income by an amount equal to the sales multiplied by the segment margin ratio.

FALSE

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-15 Segment Margin

182. The salary paid to a store manager is a traceable fixed expense of the store.

TRUE

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-09 The Importance of Fixed Costs

Topic 11-10 Traceable and Common Fixed Costs

183. Segmented statements for internal use should be prepared in the contribution format.

TRUE

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Easy

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-15 Segment Margin

184. Fixed costs that are traceable to a segment may become common if the segment is divided into smaller units.

TRUE

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-14 Traceable Costs Can Become Common

185. Only those costs that would disappear over time if a segment were eliminated should be considered traceable costs of the segment.

TRUE

Blooms Remember

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Easy

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-11 Identifying Traceable Fixed Costs

Short Answer Questions

186. (Appendix 11A) Central Medical Clinic has two Service Departments-Building Services and Energy-and three Operating Departments-Pediatrics, Geriatrics, and Surgery. Central allocates the cost of Building Services on the basis of square metres and Energy on the basis of patient days. Budgeted operating data for the year just completed follow:

	Building & Grounds	Personnel	Operating A	Operating B
Departmental costs	\$64,000	\$200,000	\$650,000	\$800,000
Square Metres Occupied	1,000	3,000	12,000	18,000
Number of Employees	10	5	45	55
Professional Hours			76,000	92,000

Required:

- a) Prepare a schedule to allocate Service Department costs to Operating Departments by the direct method, rounding all dollar amounts to the nearest whole dollar.
- b) Prepare a schedule to allocate Service Department costs to Operating Departments by the step-down method, allocating Building Services first, and rounding all amounts to the nearest whole dollar.

a) Direct method:

	Service Departments		Operating Departments		
	Building Services	Energy	Pediatrics	Geriatrics	Surgery
Budgeted costs before allocation	\$20,000	\$10,000	\$90,000	\$60,000	\$100,000
Allocation of Building Services:	(20,000)				
Pediatrics: $6,000/36,000 \times \$20,000$			3,333		
Geriatrics: $18,000/36,000 \times \$20,000$				10,000	
Surgery: $12,000/36,000 \times \$20,000$					6,667
Allocation of Energy:	(10,000)				
Pediatrics: $5,500/22,000 \times \$10,000$			2,500		
Geriatrics: $1,700/22,000 \times \$10,000$				3,500	
Surgery: $8,800/22,000 \times \$10,000$					<u>4,000</u>
Costs after allocation	<u>\$ -0-</u>	<u>\$ -0-</u>	<u>\$95,833</u>	<u>\$73,500</u>	<u>\$110,66</u>

b) Step-down method:

Chapter 11 - Reporting for Control

	Service Departments		Operating Department		
	Building Services	Energy	Pediatrics	Geriatrics	Surger
Budgeted costs before allocation	\$20,000	\$10,000	\$90,000	\$60,000	\$100,00
Allocation of Building Services:	(20,000)				
Pediatrics: $6,000/36,000 \times \$20,000$			3,333		
Geriatrics: $18,000/36,000 \times \$20,000$				10,000	
Surgery: $12,000/36,000 \times \$20,000$					6,66
Allocation of Energy:	(10,000)				
Pediatrics: $5,500/22,000 \times \$10,000$			2,500		
Geriatrics: $1,700/22,000 \times \$10,000$				3,500	
Surgery: $8,800/22,000 \times \$10,000$	—	—	—	—	<u>4,00</u>
Costs after allocation	<u>\$ -0-</u>	<u>\$ -0-</u>	<u>\$95,833</u>	<u>\$73,500</u>	<u>\$110,6</u>

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-08 Allocate service department costs to operating departments using the direct method.

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-62 Interdepartmental Services

Topic 11-66 Revenue-Producing Department

187. (Appendix 11A) Delta Manufacturing Company has two Service Departments-Custodial Services and Maintenance-and three Production Departments-Cutting, Milling, and Assembly. Delta allocates the cost of Custodial Services on the basis of square metres and Maintenance on the basis of labour hours. Budgeted operating data for the year just completed follow:

	Service Departments		Production Departments		
	Custodial Services	Maintenance	Cutting	Milling	Assembly
Budgeted costs before allocation	\$18,000	\$8,000	\$80,000	\$50,000	\$90,000
Square metres	1,000	10,000	5,000	22,000	13,000
Labour-hours			4,000	8,000	8,000

Required:

- a) Prepare a schedule to allocate Service Department costs to the Production Departments by the direct method, rounding all dollar amounts to the nearest whole dollar.
- b) Prepare a schedule to allocate Service Department costs to the Production Departments by the step-down method, allocating Custodial Services first, and rounding all amounts to the nearest whole dollar.

a) Direct method:

Chapter 11 - Reporting for Control

Services	Service Departments		Production Departments		
	Custodial	Maintenance	Cutting	Milling	Assembly
Budgeted costs before allocation	\$18,000	\$8,000	\$80,000	\$50,000	\$90,000
Allocation of Custodial Services:	(18,000)				
Cutting: $5,000/40,000 \times 18,000$			2,250		
Milling: $22,000/40,000 \times 18,000$				9,900	
Assembly: $13,000/40,000 \times 18,000$					5,850
Allocation of Maintenance:	(8,000)				
Cutting: $4,000/20,000 \times 8,000$			1,600		
Milling: $8,000/20,000 \times 8,000$				3,200	
Assembly: $8,000/20,000 \times 8,000$					<u>3,200</u>
Costs after allocation	<u>\$-0-</u>	<u>\$-0-</u>	<u>\$83,850</u>	<u>\$63,100</u>	<u>\$99,050</u>

b) Step-down method:

Chapter 11 - Reporting for Control

	Service Departments		Production Departments		
Services	Custodial	Maintenance	Cutting	Milling	Assembly
Budgeted costs before allocation	\$18,000	\$8,000	\$80,000	\$50,000	\$90,000
Allocation of Custodial Services:	(18,000)				
Maintenance: 10,000/50,000 × \$18,000		3,600			
Cutting: 5,000/50,000 × 18,000			1,800		
Milling: 22,000/50,000 × \$18,000				7,920	
Assembly: 13,000/50,000 × \$18,000					4,680
Allocation of Maintenance:		(11,600)			
Cutting: 4,000/20,000 × \$11,600			2,320		
Milling: 8,000/20,000 × \$11,600				4,640	
Assembly: 8,000/20,000 × \$11,600					<u>4,640</u>
Costs after allocation	<u>\$-0-</u>	<u>\$-0-</u>	<u>\$84,120</u>	<u>\$62,560</u>	<u>\$99,320</u>

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-08 Allocate service department costs to operating departments using the direct method.

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-62 Interdepartmental Services

Topic 11-66 Revenue-Producing Department

188. (Appendix 11A) Flinders Company has two Service Departments-Factory Administration and Maintenance-and two Operating Departments. Selected information relating to these departments is given below:

Services	Service Departments		Production Departments		
	Custodial	Maintenance	Cutting	Milling	Assembly
Budgeted costs before allocation	\$18,000	\$8,000	\$80,000	\$50,000	\$90,000
Allocation of Custodial Services:	(18,000)				
Maintenance: 10,000/50,000 × \$18,000		3,600			
Cutting: 5,000/50,000 × 18,000			1,800		
Milling: 22,000/50,000 × \$18,000				7,920	
Assembly: 13,000/50,000 × \$18,000					4,680
Allocation of Maintenance:		(11,600)			
Cutting: 4,000/20,000 × \$11,600			2,320		
Milling: 8,000/20,000 × \$11,600				4,640	
Assembly: 8,000/20,000 × \$11,600					<u>4,640</u>
Costs after allocation	<u>\$-0-</u>	<u>\$-0-</u>	<u>\$84,120</u>	<u>\$62,560</u>	<u>\$99,320</u>

The company allocates Service Department costs by the step-down method. Factory Administration costs are allocated first on the basis of number of employees, and then Maintenance costs are allocated on the basis of total labour hours.

Required:

Prepare a schedule showing the allocation of Service Department costs to other departments.

	Factory		Operating Department	
	Administration	Maintenance	X	Y
Departmental costs	\$113,400	\$80,000	\$700,000	\$600,000
Allocation:				
Factory admin.	(113,400)	5,400	43,200	64,800
Maintenance		(85,400)	34,160	51,240
Departmental costs after allocation	\$-0-	\$-0-	\$777,360	\$716,040

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

189. (Appendix 11A) Hancock Company has two Service Departments-Factory Administration and Maintenance-and two Producing Departments. Selected information relating to these departments follow:

	Factory		Producing Departments	
	Administration	Maintenance	X	Y
Number of employees	15	25	200	300
Total labour hours	20,000	30,000	400,000	600,000
Overhead costs	\$300,000	\$250,000	\$850,000	\$1,200,000

The company allocates Service Department costs using the step-down method. Costs of Factory Administration are allocated on the basis of the number of employees. Costs of Maintenance are allocated on the basis of labour hours. Allocation begins with the Factory Administration Department.

Required:

Prepare a schedule showing the allocation of Service Department costs to the other departments.

	Factory		Producing Department	
	Administration	Maintenance	X	Y
Overhead costs	\$300,000	\$250,000	\$850,000	\$1,200,000
Allocation:				
Factory Admin.	(\$300,000)	14,286	114,286	171,428
Maintenance		(264,286)	105,714	158,572
Overhead costs after allocation	<u>\$-0-</u>	<u>\$-0-</u>	<u>\$1,070,000</u>	<u>\$1,530,000</u>

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-09 Allocate service department costs to operating department costs using the step-down method.

Topic 11-66 Revenue-Producing Department

190. Describe the balanced scorecard concept and explain the reasoning behind it.

The balanced scorecard is an important tool designed to focus management's attention on key current goals which, if achieved, will facilitate the attainment of the organization's long-term goals. By achieving current goals in the customer, internal business process, and learning and growth perspectives, the company will ultimately achieve its long-term financial goals.

Blooms Understand

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-05 Explain the use of balanced scorecards to assess performance.

Topic 11-40 Common Characteristics of Balanced Scorecards

191. Hatch Company has two divisions: O and E. During the year just ended, Division O had a segment margin of \$9,000 and variable costs equal to 70% of sales. Traceable fixed costs for Division E were \$19,000. Hatch Company as a whole had a contribution margin of 40%, a segment margin of \$25,000, Common costs of \$10,000 and sales of \$200,000. Given this data, prepare segmented income statements showing the Total as well as amounts for Division O and E.

	TOTAL		Division O		Division E	
Sales	\$200,000	100%	\$150,000	100% (d)	\$50,000	100% (e)
V.C.	<u>120,000</u>	<u>60</u>	<u>105,000</u>	<u>70</u>	<u>15,000</u>	<u>30 (f)</u>
C.M.	\$80,000	40%	\$45,000	30% (c)	\$35,000	70% (b)
Traceable FC	<u>55,000</u>		<u>36,000</u>		<u>19,000</u>	
Segment Margin	\$25,000		<u>\$9,000</u>		<u>\$16,000 (a)</u>	
Less: Common	<u>10,000</u>					
Operating Income	<u>\$15,000</u>					

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

192. The Winter Products Division of American Sports Corporation produces and markets two products for use in the snow: Sleds and Saucers. The following data were gathered on activities last month:

	Sleds	Saucers
Sales in units	2,000	9,000
Selling price per unit	\$50	\$20
Variable fixed production costs	\$20	\$5
Traceable fixed production costs	\$12,000	\$33,000
Variable selling expenses per unit	\$2	\$1
Traceable fixed selling expenses	\$2,000	\$3,000
Allocated division administrative expenses	\$40,000	\$72,000

Required:

- a. Prepare a segmented income statement in the contribution format for last month, showing both "Amount" and "Percent" columns for the division as a whole and for each product.
- b. Why might it be very difficult to calculate separate break-even sales for each product?
- c. Refer to the original data and, if necessary, the results of the segmented income statement prepared in part (a) above. Calculate the total break-even sales (in both units AND dollars) for last month, assuming that none of the fixed production costs and fixed selling expenses is traceable. Allocate the total break-even sales between the two products.
- d. Again, refer to the original data and, if necessary, the results of the segmented income statement prepared in part (a) above. Calculate the total break-even sales (in both units AND dollars) for last month, assuming that the "allocated" amounts of the division's administrative expenses are fixed and actually traceable. Allocate the total break-even sales between the two products.
- e. How reasonable are the total break-even sales numbers calculated in parts (c) and (d) given the actual results for last month?

Chapter 11 - Reporting for Control

a.

	Segments					
	DIVISION		Sleds			Saucers
Sales	\$280,000	100%	\$100,000	100%	\$180,000	100.0%
Variable expense	<u>98,000</u>	<u>35</u>	<u>44,000</u>	<u>44</u>	<u>54,000</u>	<u>30</u>
Contribution margin	\$182,000	65%	\$56,000	56%	\$126,000	70%
Traceable fixed expenses	<u>50,000</u>	<u>18</u>	<u>14,000</u>	<u>14</u>	<u>36,000</u>	<u>20</u>
Segment margins	\$132,000	47%	<u>\$42,000</u>	<u>42%</u>	<u>\$90,000</u>	<u>50%</u>
Common fixed expenses	<u>112,00</u>	<u>40</u>				
Operating Income	<u>\$20,000</u>	<u>7%</u>				

b. All fixed expenses have to be traceable to the two products in order to calculate separate break-even sales for each product. However, the total administrative expenses of the division are not traceable to the two products. This is the main difficulty. The expenses are rather common as indicated in the segmented income statement.

c. Total fixed expenses = \$50,000 + \$112,000
= \$162,000

Weighted average contribution (WACM) ratio = 65% (Part a)

WACM (\$) = \$182,000/11,000
= \$16.55 (rounded)

Total break-even \$ sales = \$162,000/65%
= \$249,231 (rounded)

Allocations:

Sleds (\$100,000/\$280,000) × \$249,231: \$89,011 (rounded)

Saucers: (\$180,000/\$280,000) × \$249,231: \$160,220 (rounded)

Total break-even sales (units) = \$162,000/\$16.55
= 9,789 (rounded)

Allocations:

Sleds (2,000/11,000) × 9,789: 1,780 (rounded)

Saucers (9,000/11,000) × 9,789: 8,009 (rounded)

d. This is the standard case where break-even sales can be calculated separately for each product because there are no common or joint costs.

	SLEDS	SAUCERS	TOTAL
Total fixed expenses (A)	\$54,000	\$108,000	
Contribution margin:			
Per Unit (B)	\$28	\$14	
Ratio (C)	56%	70%	
Break-even sales:			
Units (A/B) rounded	1,929	7,714	9,643
\$(A/C) rounded	\$96,429	\$154,286	\$250,715

Chapter 11 - Reporting for Control

e. The total break-even sales numbers are reasonable in both cases because they are less the reported total actual sales volume. In other words, the company reported positive profits when actual sales exceeded the break-even sales.

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

193. The IT Corporation produces and markets two types of electronic calculators: Model 11 and Model 12. The following data were gathered on activities last month:

	Model 11	Model 12
Sales in units	5,000	3,000
Selling price per unit	\$50	\$100
Variable production costs per unit	\$10	\$26
Traceable fixed production costs	\$100,000	\$150,000
Variable selling expenses per unit	\$5	\$6
Traceable fixed selling expenses	\$5,000	\$7,500
Allocated division administrative expenses	\$50,000	\$60,000

Required:

- Prepare a segmented income statement in the contribution format for last month, showing both "Amount" and "Percent" columns for the company as a whole and for each model.
- Why might it be very difficult to calculate separate break-even sales for each model?
- Refer to the original data and, if necessary, the results of the segmented income statement prepared in part (a) above. Calculate the total break-even sales (in both units AND dollars) for last month, assuming that none of the fixed production costs and fixed selling expenses is traceable. Allocate the total break-even sales between the two models.
- Again, refer to the original data and, if necessary, the results of the segmented income statement prepared in part (a) above. Calculate the total break-even sales (in both units AND dollars) for last month, assuming that the "allocated" amounts of the company's administrative expenses are actually traceable. Allocate the total break-even sales between the two models.
- How reasonable are the total break-even sales numbers calculated in parts (c) and (d) given the actual results for last month?

Chapter 11 - Reporting for Control

a.

	Total Company		Segments			
			Model 11		Model 12	
Sales	\$550,000	100%	\$250,000	100%	\$300,000	100.0%
Variable expense	<u>171,000</u>	<u>31</u>	<u>75,000</u>	<u>30</u>	<u>96,000</u>	<u>32</u>
Contribution margin	\$379,000	69%	\$175,000	70%	\$204,000	68%
Traceable fixed expenses	<u>262,500</u>	<u>48</u>	<u>105,000</u>	<u>42</u>	<u>157,500</u>	<u>52.5</u>
Segment margins	\$116,500	21%	<u>\$70,000</u>	<u>28%</u>	<u>\$46,500</u>	<u>15.5%</u>
Common fixed expenses	<u>110,00</u>	<u>20</u>				
Operating Income	<u>6,500</u>	<u>1%</u>				

b. All fixed expenses have to be traceable to the two products in order to calculate separate break-even sales for each product. However, the total administrative expenses of the division are not traceable to the two products. This is the main difficulty. The expenses are rather common as indicated in the segmented income statement.

c. Total fixed expenses = \$262,500 + \$110,000
= \$372,500

Weighted average contribution (WACM) ratio (rounded) = 69% (Part a)

WACM (\$) = \$379,000/8,000

= \$47.38 (rounded)

Total break-even \$ sales = \$372,500/69%

= \$539,855 (rounded)

Allocations:

Sleds (\$250,000/\$550,000) × \$539,855: \$245,389 (rounded)

Saucers (\$300,000/\$550,000) × \$539,855: \$294,466 (rounded)

Total break-even sales (units) = \$372,500/\$47.38

= 7,862 (rounded)

Allocations:

Sleds (5,000/8,000) × 7,862: 4,914 (rounded)

Saucers (3,000/8,000) × 7,862: 2,948 (rounded)

d. This is the standard case where break-even sales can be calculated separately for each product because there are no common or joint costs.

	MODEL 11	MODEL 12	TOTAL
Total fixed expenses (A)	\$155,000	\$217,500	
Contribution margin:			
Per Unit (B)	\$35	\$68	
Ratio (C)	70%	68%	
Break-even sales:			
Units (A/B) rounded	4,429	3,199	7,628
\$(A/C) rounded	\$221,429	\$319,853	\$541,282

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e. The total break-even sales numbers are reasonable in both cases because they are less the reported total actual sales volume. In other words, the company reported positive profits when actual sales exceeded the break-even sales.

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Hard

Learning Objective 11-01 Prepare a segmented income statement using the contribution format; and explain the difference between traceable fixed costs and common fixed costs.

Topic 11-06 Different Levels of Segmented Statements

Topic 11-08 Sales and Contribution Margin

Topic 11-10 Traceable and Common Fixed Costs

Topic 11-15 Segment Margin

194. Financial data for Beaker Company for last year appear below:

Beaker Company		
Statements of Financial Position		
	Beginning Balance	Ending Balance
Assets:		
Cash	\$50,000	\$70,000
Accounts receivable	20,000	25,000
Inventory	30,000	35,000
Plant and equipment (net)	120,000	110,000
Investment in Cedar Company	80,000	100,000
Land (underdeveloped)	<u>170,000</u>	<u>170,000</u>
Total assets	<u>\$470,000</u>	<u>\$510,000</u>
Liabilities and owners' equity:		
Accounts payable	\$70,000	\$90,000
Long-term debt	250,000	250,000
Owners' equity	<u>150,000</u>	<u>170,000</u>
Total liabilities and owners' equity	<u>\$470,000</u>	<u>\$510,000</u>

Beaker Company		
Income Statement		
Sales		\$414,000
Less operating expenses		<u>351,900</u>
Net operating income		62,100
Less interest and taxes:		
Interest expense	\$30,000	
Tax expense	<u>10,000</u>	<u>40,000</u>
Operating Income		<u>\$22,100</u>

The company paid dividends of \$2,100 last year. The "Investment in Cedar Company" on the statement of financial position represents an investment in the stock of another company.

Required:

- a) Compute the company's margin, turnover, and return on investment for last year.
- b) The Board of Directors of Beaker Company have set a minimum required return of 20%. What was the company's residual income last year?

- a) Operating assets do not include investments in other companies or in undeveloped land.

	Beginning Balance	Ending Balance
Cash	\$50,000	\$70,000
Accounts receivable	20,000	25,000
Inventory	30,000	35,000
Plant and equipment (net)	<u>120,000</u>	<u>110,000</u>
Total operating assets	<u>\$220,000</u>	<u>\$240,000</u>

$$\begin{aligned} \text{Average operating assets} &= (\$220,000 + \$240,000) \div 2 \\ &= \$230,000 \end{aligned}$$

$$\begin{aligned} \text{Margin} &= \text{Net operating income} \div \text{Sales} \\ &= \$62,100 \div \$414,000 \\ &= 15\% \end{aligned}$$

$$\begin{aligned} \text{Turnover} &= \text{Sales} \div \text{Average operating assets} \\ &= \$414,000 \div \$230,000 \\ &= 1.8 \end{aligned}$$

$$\begin{aligned} \text{ROI} &= \text{Margin} \times \text{Turnover} \\ &= 15\% \times 1.8 \\ &= 27\% \end{aligned}$$

(b)

Net operating income	\$62,100
Minimum required return (20% × \$230,000)	<u>46,000</u>
Residual income	<u>\$16,100</u>

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Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

Topic 11-36 Motivation and Residual Income

195. Financial data for Bingham Company for last year appear below:

Bingham Company		
Statements of Financial Position		
	Beginning Balance	Ending Balance
Assets:		
Cash	\$135,000	\$266,000
Accounts receivable	225,000	475,000
Inventory	314,000	394,000
Plant and equipment (net)	940,000	860,000
Investment in Carr Company	104,000	101,000
Land (undeveloped)	<u>198,000</u>	<u>65,000</u>
Total assets	<u>\$1,916,000</u>	<u>\$2,161,000</u>
Liabilities and owners' equity:		
Accounts payable	\$88,000	\$119,000
Long-term debt	585,000	665,000
Owners' equity	<u>1,243,000</u>	<u>1,377,000</u>
Total liabilities and owners' equity	<u>\$1,916,000</u>	<u>\$2,161,000</u>

Bingham Company		
Income Statement		
Sales		\$4,644,000
Less operating expenses		<u>4,291,000</u>
Net operating income		353,000
Less interest and taxes:		
Interest expense	\$90,000	
Tax expense	<u>129,000</u>	<u>219,000</u>
Operating Income		<u>\$134,000</u>

The "Investment in Carr Company" on the statement of financial position represents an investment in the stock of another company.

Required:

- a) Compute the company's margin, turnover, and return on investment for last year.
- b) The Board of Directors of Beaker Company have set a minimum required return of 15%. What was the company's residual income last year?

- a) Operating assets do not include investments in other companies or in undeveloped land.

	Beginning Balance	Ending Balance
Cash	\$135,000	\$266,000
Accounts receivable	225,000	475,000
Inventory	314,000	394,000
Plant and equipment (net)	<u>940,000</u>	<u>860,000</u>
Total operating assets	<u>\$1,614,000</u>	<u>\$1,995,000</u>

$$\begin{aligned} \text{Average operating assets} &= (\$1,614,000 + \$1,995,000) \div 2 \\ &= \$1,804,500 \end{aligned}$$

$$\begin{aligned} \text{Margin} &= \text{net operating income} \div \text{Sales} \\ &= \$353,000 \div \$4,644,000 \\ &= 7.60\% \end{aligned}$$

$$\begin{aligned} \text{Turnover} &= \text{Sales} \div \text{Average operating assets} \\ &= \$4,644,000 \div \$1,804,500 \\ &= 2.57 \end{aligned}$$

$$\begin{aligned} \text{ROI} &= \text{Net operating income} \div \text{Average operating assets} \\ &= \$353,000 \div 1,804,500 \\ &= 19.56\% \end{aligned}$$

Chapter 11 - Reporting for Control

b)

Operating Income	\$353,000
Minimum required return (15% × \$1,804,500)	<u>270,675</u>
Residual income	<u>\$82,325</u>

Blooms Apply

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Hard

Learning Objective 11-03 Analyze the return on investment.

Learning Objective 11-04 Compute residual income; and describe the strengths and weaknesses of this method of measuring performance.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Chapter 11 - Reporting for Control

Topic 11-30 Understanding Return on Investment

Topic 11-36 Motivation and Residual Income

196. The following data have been extracted from the year-end reports of two companies: Company X and Company Y:

	Company X	Company Y
Sales	\$800,000	?
Operating income	\$56,000	?
Average operating assets	?	\$125,000
Margin	?	4%
Turnover	?	6
Return on investment	14%	?

Required:

Fill in the missing data on the above table.

	Company X	Company Y
Sales	\$800,000	\$750,000
Operating income	\$56,000	\$30,000
Average operating assets	\$400,000	\$125,000
Margin	7%	4%
Turnover	2	6
Return on investment	14%	24%

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

197. (Appendix 11A) The following data have been extracted from the year-end reports of two companies: Company X and Company Y:

	Company X	Company Y
Sales	\$2,700,00	?
Operating Income	\$256,000	?
Average Operating Assets	?	\$1,725,000
Margin	?	8.0%
Turnover	?	2.0
Return on Investment	16%	?

Required:

Fill in the missing data on the above table.

	Company X	Company Y
Sales	\$2,700,00	\$3,450,000
Operating Income	\$256,000	\$276,000
Average Operating Assets	\$1,600,000	\$1,725,000
Margin	9.5%	8.0%
Turnover	1.7	2.0
Return on Investment	16%	16%

Blooms Analyze

CPA Competency 3.6.2 Evaluates performance of responsibility centres.

CPA Competency 3.6.3 Evaluates root causes of performance issues.

Difficulty Medium

Learning Objective 11-03 Analyze the return on investment.

Topic 11-28 The Return on Investment Formula

Topic 11-29 Operating Income and Operating Assets Defined

Topic 11-30 Understanding Return on Investment

198. (Appendix 11A) Galant Company's quality cost report is to be based on the following data:

Downtime caused by quality problems	\$11,000
Rework labour and overhead	\$32,000
Quality circles	\$44,000
Returns arising from quality problems	\$97,000
Supervision of testing and inspection activities	\$18,000
Test and inspection of in-process goods	\$90,000
Systems development	\$28,000
Amortization of test equipment	\$25,000
Warranty repairs and replacements	\$59,000

Required:

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Prepare a quality cost report in good form with separate sections for prevention costs, appraisal costs, internal failure costs, and external failure costs.

Prevention Costs	\$44,000	
Quality circles	<u>\$28,000</u>	\$72,000
Systems development		
Appraisal Costs		
Test and inspection of in-process goods	\$90,000	
Supervision of testing and inspection activities	18,000	
Depreciation of test equipment	<u>\$25,000</u>	\$133,000
Internal Failure Costs		
Downtime caused by quality problems	\$11,000	
Rework labour and overhead	<u>\$32,000</u>	\$43,000
External Failure Costs		
Warranty repairs and replacements	\$59,000	
Returns arising from quality problems	<u>\$97,000</u>	\$156,000
		<u>\$404,000</u>

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

199. (Appendix 11A) Galben Company's quality cost report is to be based on the following data:

Quality data gathering, analysis, and reporting	\$38,000
Supervision of testing and inspection activities	\$45,000
Liability arising from defective products	\$30,000
Technical support provided to suppliers	\$39,000
Disposal of defective products	\$72,000
Amortization of test equipment	\$55,000
Downtime caused by quality problems	\$96,000
Test and inspection of in-process goods	\$69,000
Cost of field servicing and handling complaints	\$52,000

Required:

Prepare a quality cost report in good form with separate sections for prevention costs, appraisal costs, internal failure costs, and external failure costs.

Prevention Costs		
Technical support provided to suppliers	\$39,000	
Quality data gathering, analysis, and reporting	<u>\$38,000</u>	\$77,000
Appraisal Costs		
Test and inspection of in-process goods	\$69,000	
Supervision of testing and inspection activities	\$45,000	
Depreciation of test equipment	<u>\$55,000</u>	\$169,000
Internal Failure Costs		
Disposal of defective products	\$72,000	
Downtime caused by quality problems	<u>\$96,000</u>	\$168,000
External failure costs		
Cost of field servicing and handling complaints	\$52,000	
Liability arising from defective products	<u>\$30,000</u>	\$82,000
		<u>\$496,000</u>

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Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

200. (Appendix 11A) Galati Company's quality cost report is to be based on the following data:

Lost sales due to poor quality	\$22,000
Test and inspection of incoming materials	\$91,000
Rework labour and overhead	\$55,000
Test and inspection of in-process goods	\$29,000
Product recalls	\$46,000
Quality data gathering, analysis, and reporting	\$10,000
Disposal of defective products	\$83,000
Maintenance of test equipment	\$57,000
Quality engineering	\$97,000

Required:

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Prepare a quality cost report in good form with separate sections for prevention costs, appraisal costs, internal failure costs, and external failure costs.

Prevention Costs		
Quality engineering	\$97,000	
Quality data gathering, analysis, and reporting	<u>\$10,000</u>	\$107,000
Appraisal Costs		
Test and inspection of in-process goods	\$29,000	
Maintenance of test equipment	\$57,000	
Test and inspection of incoming materials	<u>\$91,000</u>	\$177,000
Internal Failure Costs		
Disposal of defective products	\$83,000	
Rework labour and overhead	<u>\$55,000</u>	\$138,000
External Failure Costs		
Product recalls	\$46,000	
Lost sales due to poor quality	<u>\$22,000</u>	<u>\$68,000</u>
		<u>\$490,000</u>

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

201. (Appendix 11A) Harvie Company's quality cost report is to be based on the following data:

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Lost sales due to poor quality	\$50,000
Quality engineering	\$66,000
Test and inspection of incoming materials	\$88,000
Re-entering data because of keying errors	\$36,000
Net cost of scrap	\$46,000
Tests and inspection of in-process goods	\$62,000
Warranty repairs and replacements	\$32,000
Net cost of spoilage	\$89,000
Technical support provided to suppliers	\$70,000

Required:

Prepare a quality cost report in good form with separate sections for prevention costs, appraisal costs, internal failure costs, and external failure costs.

Prevention costs		
Technical support provided to suppliers	\$70,000	
Quality engineering	<u>\$66,000</u>	\$136,000
Appraisal costs		
Test and inspection of in-process goods	\$62,000	
Test and inspection of incoming materials	<u>\$88,000</u>	\$150,000
Internal failure costs		
Net cost of spoilage	\$89,000	
Re-entering data because of keying errors	\$36,000	
Net cost of scrap	<u>\$46,000</u>	\$171,000
External failure costs		
Lost sales due to poor quality	\$50,000	
Warranty repairs and replacements	<u>\$32,000</u>	\$82,000
		<u>\$539,000</u>

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Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

202. (Appendix 11A) Harwood Company's quality cost report is to be based on the following data:

Amortization of test equipment	\$94,000
Quality circles	\$54,000
Product recalls	\$20,000
Test and inspection of incoming materials	\$82,000
Debugging software errors	\$11,000
Rework labour and overhead	\$48,000
Technical support provided to suppliers	\$12,000
Net cost of scrap	\$29,000
Lost sales due to poor quality	\$74,000

Required:

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Prepare a quality cost report in good form with separate sections for prevention costs, appraisal costs, internal failure costs, and external failure costs.

Prevention costs		
Quality circles	\$54,000	
Technical support provided to suppliers	<u>\$12,000</u>	\$66,000
Appraisal costs		
Test and inspection of incoming materials	\$82,000	
Depreciation of test equipment	<u>\$94,000</u>	\$176,000
Internal failure costs		
Debugging software errors	\$11,000	
Net cost of scrap	\$29,000	
Rework labour and overhead	<u>\$48,000</u>	\$88,000
External failure costs		
Product recalls	\$20,000	
Lost sales due to poor quality	<u>\$74,000</u>	<u>\$94,000</u>
		<u>\$424,000</u>

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

203. (Appendix 11A) Harui Company's quality cost report is to be based on the following data:

Test and inspection of in-process goods	\$32,000
Net cost and spoilage	\$45,000
Quality circles	\$33,000
Downtime caused by quality problems	\$28,000
Final product testing and inspection	\$78,000
Rework labour and overhead	\$48,000
Quality training	\$93,000
Returns arising from quality problems	\$92,000
Warranty repairs and replacements	\$67,000

Required:

- a) Prepare a quality cost report in good form with separate sections for prevention costs, appraisal costs, internal failure costs, and external failure costs.
- b) If Harui's efforts to ensure quality conformance are working, how would you expect the Quality Cost Report next year to compare with this one?

Chapter 11 - Reporting for Control

a.

Prevention costs		
Quality circles	\$33,000	
Quality training	<u>\$93,000</u>	\$126,000
Appraisal Costs		
Test and inspection of in-process goods	\$32,000	
Final product testing and inspection	<u>\$78,000</u>	\$110,000
Internal failure costs		
Rework labour and overhead	\$48,000	
Net cost of spoilage	\$45,000	
Downtime caused by quality problems	<u>\$28,000</u>	\$121,000
External Failure Costs		
Returns arising from quality problems	\$92,000	
Warranty repairs and replacements	<u>\$67,000</u>	<u>\$159,000</u>
		<u>\$416,000</u>

b. In the next year Harui should see a decline in both internal and external failure costs due to the efforts of this year especially due to the implementation of prevention and appraisal efforts. The total quality costs will decrease each year providing the dollars spent toward prevention and appraisal continue to work.

Blooms Analyze

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

204. (Appendix 11A) Godunov Company's quality cost report is to be based on the following data:

Downtime caused by quality problem	\$12,000
Rework labour and overhead	\$42,000
Quality circles	\$34,000
Returns arising from quality problems	\$97,000
Supervision of testing and inspection activities	\$20,000
Test and inspection of in-process goods	\$98,000
Systems development	\$38,000
Amortization of test equipment	\$24,000
Warranty repairs and replacements	\$60,000

Required:

Chapter 11 - Reporting for Control

Prepare a quality cost report in good form with separate sections for prevention costs, appraisal costs, internal failure costs, and external failure costs.

Prevention costs		
Quality circles	\$34,000	
Systems development	<u>\$38,000</u>	\$72,000
Appraisal costs		
Test and inspection of in-process goods	\$98,000	
Supervision of testing and inspection activities	\$20,000	
Depreciation of test equipment	<u>\$24,000</u>	\$142,000
Internal failure costs		
Downtime caused by quality problems	\$12,000	
Rework labour and overhead	<u>\$42,000</u>	\$54,000
External failure costs		
Warranty repairs and replacements	\$60,000	
Returns arising from quality problems	<u>\$97,000</u>	<u>\$157,000</u>
		<u>\$425,000</u>

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

205. (Appendix 11A) Falstaff Company's quality cost report is to be based on the following data:

Chapter 11 - Reporting for Control

Quality data gathering, analysis, and reporting	\$49,000
Supervision of testing and inspection activities	\$46,000
Liability arising from defective products	\$35,000
Technical support provided to suppliers	\$50,000
Disposal of defective products	\$75,000
Amortization of test equipment	\$56,000
Downtime caused by quality problems	\$99,000
Test and inspection of in-process goods	\$70,000
Cost of field servicing and handling complaints	\$54,000

Required:

Prepare a quality cost report in good form with separate sections for prevention costs, appraisal costs, internal failure costs, and external failure costs.

Prevention costs		
Technical support provided to suppliers	\$50,000	
Quality data gathering, analysis, and reporting	<u>\$49,000</u>	\$99,000
Appraisal costs		
Test and inspection of in-process goods	\$70,000	
Supervision of testing and inspection activities	\$46,000	
Depreciation of test equipment	<u>\$56,000</u>	\$172,000
Internal failure costs		
Disposal of defective products	\$75,000	
Downtime caused by quality problems	<u>\$99,000</u>	\$174,000
External failure costs		
Cost of fielding servicing and handling complaints	\$54,000	
Liability arising from defective products	<u>\$35,000</u>	<u>\$89,000</u>
		<u>\$534,000</u>

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Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

206. (Appendix 11A) Rigoletto Company's quality cost report is to be based on the following data:

Lost sales due to poor quality	\$24,000
Test and inspection of incoming materials	\$94,000
Rework labour and overhead	\$55,000
Test and inspection of in-process goods	\$32,000
Product recalls	\$47,000
Quality data gathering, analysis, and reporting	\$15,000
Disposal of defective products	\$88,000
Maintenance of test equipment	\$58,000
Quality engineering	\$98,000

Required:

Chapter 11 - Reporting for Control

Prepare a quality cost report in good form with separate sections for prevention costs, appraisal costs, internal failure costs, and external failure costs.

Prevention costs		
Quality engineering	\$98,000	
Quality data gathering, analysis, and reporting	<u>\$15,000</u>	\$113,000
Appraisal costs		
Test and inspection of in-process goods	\$32,000	
Maintenance of test equipment	\$58,000	
Test and inspection of incoming materials	<u>\$94,000</u>	\$184,000
Internal failure costs		
Disposal of defective products	\$88,000	
Rework labour and overhead	\$55,000	\$143,000
External failure costs		
Product recalls	\$47,000	
Lost sales due to poor quality	<u>\$24,000</u>	<u>\$71,000</u>
		<u>\$511,000</u>

Blooms Apply

CPA Competency 3.6.1 Evaluates performance using accepted frameworks.

Difficulty Medium

Learning Objective 11-07 Identify the four types of quality costs; explain their interaction; and prepare a quality cost report.

Topic 11-52 Prevention Costs

Topic 11-53 Appraisal Costs

Topic 11-54 Internal Failure Costs

Topic 11-55 External Failure Costs

207. (Appendix 11A) Larinore Corporation has a Castings Division that does casting work of various types. The company's Machine Products Division has asked the Castings Division to provide it with 20,000 special castings each year on a continuing basis. The special castings would require \$10 per unit in variable production costs. The Machine Products Division has a bid from an outside supplier of \$29 per unit for the castings.

In order to have time and space to produce the new castings, the Castings Division would have to cut back production of another casting: the RB4, which it presently is producing. The RB4 sells for \$30 per unit, and requires \$12 per unit in variable production costs. Boxing and shipping costs of the RB4 are \$4 per unit. Boxing and shipping costs for the new special casting would be only \$1 per unit. The company is now producing and selling 100,000 units of the RB4 each year. Production and sales of this casting would drop by 20% if the new casting is produced.

Required:

- a) What is the range of transfer prices within which both the divisions' profits would increase as a result of agreeing to the transfer of 20,000 castings per year from the Castings Division to the Machine Products Division?
- b) Is it in the best interests of Larinore Corporation for this transfer to take place? Explain.

a) From the perspective of the Castings Division, profits would increase as a result of the transfer providing that:

Transfer price > Variable cost + Opportunity cost

The opportunity cost is the contribution margin on the lost sales, divided by the number of units transferred:

$$\text{Opportunity cost} = [(\$30 - \$12 - \$4) \times 20,000] / 20,000 = \$14$$

Therefore,

$$\text{Transfer price} > (\$10 + \$1) + \$14 = \$25$$

From the viewpoint of the purchasing division, the transfer price must be less than the cost of buying the units from the outside supplier.

$$\text{Transfer price} < \$29$$

Combining the two requirements, we get the following range of transfer prices:

$$\$25 < \text{Transfer price} < \$29$$

b. Yes, the transfer should take place. From the viewpoint of the entire company, the cost of transferring the units within the company is \$25, but the cost of purchasing them from the outside supplier is \$29. Therefore, the company's profits increase by \$4 for each of the castings that are used within the company rather than sold on the outside market.

Blooms Evaluate

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Hard

Learning Objective 11-06 Determine the range, if any, within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices

208. (Appendix 11A) Geneva Corporation has a Castings Division that does casting work of various types. The company's Machine Products Division has asked the Castings Division to provide it with 10,000 special castings each year on a continuing basis. The special castings would require \$20 per unit in variable production costs. The Machine Products Division has a bid from an outside supplier of \$30 per unit for the castings.

In order to have time and space to produce the new casting, the Castings Division would have to cut back production of another casting: the NW2, which it presently is producing. The NW2 sells for \$40 per unit, and requires \$25 per unit in variable production costs. Boxing and shipping costs of the NW2 are \$4 per unit. Boxing and shipping costs for the new special casting would be only \$2 per unit. The company is now producing and selling 100,000 units of the NW2 each year. Production and sales of this casting would drop by 10% if the new casting were produced.

Required:

- a) What is the range of transfer prices, if any, within which both the divisions' profits would increase as a result of agreeing to the transfer of 10,000 castings per year from the Castings Division to the Machine Products Division?
- b) Is it in the best interests of Geneva Corporation for this transfer to take place? Explain.

a) From the perspective of the Castings Division, profits would increase as a result of the transfer providing that:

Transfer price > Variable cost + Opportunity cost

The opportunity cost is the contribution margin on the lost sales, divided by the number of units transferred:

$$\text{Opportunity cost} = [(\$40 - \$25 - \$4) \times 10,000] / 10,000 = \$11$$

Therefore,

$$\text{Transfer price} > (\$20 + \$2) + \$11 = \$33$$

From the viewpoint of the purchasing division, the transfer price must be less than the cost of buying the units from the outside supplier.

$$\text{Transfer price} < \$30$$

Combining the two requirements, we find that no feasible range of transfer prices exists under current conditions.

b) No, the transfer should not take place. From the viewpoint of the entire company, the cost of transferring the units within the company is \$33, but the cost of purchasing them from the outside supplier is \$30. Therefore, the company's profits decrease by \$3 for each casting that is produced within the company rather than purchased in the outside market.

Blooms Evaluate

CPA Competency 3.4.1 Evaluates sources and drivers of revenue growth.

Difficulty Hard

Learning Objective 11-06 Determine the range; if any; within which a negotiated transfer price should fall; and explain approaches to setting the transfer price.

Topic 11-45 Negotiated Transfer Prices