Chapter 22(7)
Performance Evaluation Using Variances From Standard Costs

OBJECTIVES

Obj 1	Describe the types of standards and how they are established for businesses.
Obj 2	Explain and illustrate how standards are used in budgeting.
Obj 3	Calculate and interpret direct material and direct labor variances.
Obj 4	Calculate and interpret factory overhead controllable and volume variances.
Obj 5	Journalize the entries for recording standards in the accounts and prepare an income statement that includes variances from standard.
Obj 6	Explain and provide examples of nonfinancial performance measures.

TRUE/FALSE

1. A variable cost system is an accounting system where standards are set for each manufacturing cost element.
ANS: F DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

2. One reason not to depend solely on historical records to set standards is that there may be inefficiencies contained in past costs.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

3. Standard costs serve as a device for measuring efficiency.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

4. The standard cost is how much a product should cost to manufacture.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

5. Standard costs can be used with both the process cost and job order cost systems.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

6. Cost systems using detailed estimates of each element of manufacturing cost entering into the finished product are called standard cost systems.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

7. Cost systems using detailed estimates of each element of manufacturing cost entering into the finished product are called budgeted cost systems.
ANS: F DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

8. Normally standard costs should be revised when labor rates change to incorporate new union contracts.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

9. Standard costs should always be revised when they differ from actual costs.
ANS: F DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

10. Financial reporting systems that are guided by the principle of exceptions concept focus attention on variances from standard costs.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

11. In most businesses, cost standards are established principally by accountants.
ANS: F DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

12. It is correct to rely exclusively on past cost data when establishing standards.
ANS: F DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

13. Ideal standards are developed under conditions that assume no idle time, no machine breakdowns, and no materials spoilage.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

14. Currently attainable standards do not allow for reasonable production difficulties.
ANS: F DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

15. If employees are given bonuses for exceeding normal standards, the standards may be very effective in motivating employees.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

16. The fact that workers are unable to meet a properly determined direct labor standard is sufficient cause to change the standard.
ANS: F DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

17. Standards cannot be used for inventory valuation on financial statements.
ANS: F DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

18. Changes in technology, machinery, or production methods may make past cost data irrelevant when setting standards.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

19. The difference between the standard cost of a product and its actual cost is called a variance.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

20. Standards are performance goals used to evaluate and control operations.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

21. Standards are set for only direct labor and direct materials.
ANS: F DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

22. Principle of exceptions allows managers to focus on correcting variances between standard costs and actual costs.
ANS: T DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

23. Because accountants have financial expertise, they are the only ones that are able to set standard costs for the production area.
ANS: F DIF: Moderate OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

24. While setting standards, the managers should never allow for spoilage or machine breakdowns in their calculations.
ANS: F DIF: Moderate OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

25. A budget performance report compares actual results with the budgeted amounts and reports differences for possible investigation.
ANS: T DIF: Easy OBJ: 22(7)-02
NAT: AACSB Analytic | IMA-Performance Measurement

26. A favorable cost variance occurs when actual cost is less than budgeted cost at actual volumes.
ANS: T DIF: Easy OBJ: 22(7)-02
NAT: AACSB Analytic | IMA-Performance Measurement

27. An unfavorable cost variance occurs when budgeted cost at actual volumes exceeds actual cost.
ANS: F DIF: Easy OBJ: 22(7)-02
NAT: AACSB Analytic | IMA-Performance Measurement

28. Standards are designed to evaluate price and quantity variances separately.
ANS: T DIF: Easy OBJ: 22(7)-02
NAT: AACSB Analytic | IMA-Performance Measurement

29. If the standard to produce a given amount of product is 2,000 units of direct materials at $12 and the actual was 1,600 units at $13, the direct materials quantity variance was $5,200 favorable.
ANS: F DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

30. If the standard to produce a given amount of product is 1,000 units of direct materials at $11 and the actual was 800 units at $12, the direct materials quantity variance was $2,200 unfavorable.
ANS: F DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

31. If the standard to produce a given amount of product is 1,000 units of direct materials at $11 and the actual was 800 units at $12, the direct materials price variance was $800 unfavorable.
ANS: T DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

32. If the standard to produce a given amount of product is 1,000 units of direct materials at $11 and the actual was 800 units at $12, the direct materials price variance was $800 favorable.
ANS: F DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

33. If the standard to produce a given amount of product is 1,000 units of direct materials at $11 and the actual was 800 units at $12, the direct materials quantity variance was $1,000 unfavorable.
ANS: F DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

34. If the standard to produce a given amount of product is 600 direct labor hours at $17 and the actual was 500 hours at $15, the time variance was $1,500 unfavorable.
ANS: F DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

35. If the standard to produce a given amount of product is 600 direct labor hours at $15 and the actual was 500 hours at $17, the time variance was $1,700 unfavorable.
ANS: F DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

36. If the standard to produce a given amount of product is 600 direct labor hours at $15 and the actual was 600 hours at $17, the rate variance was $1,200 unfavorable.
ANS: T DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

37. If the standard to produce a given amount of product is 500 direct labor hours at $15 and the actual was 600 hours at $17, the rate variance was $1,200 favorable.
ANS: F DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

38. Standard costs are determined by multiplying expected price by expected quantity.
ANS: T DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

39. The direct labor time variance measures the efficiency of the direct labor force.
ANS: T DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

40. The variance from standard for factory overhead cost resulting from operating at a level above or below 100% of normal capacity is termed volume variance.
ANS: T DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

41. The variance from standard for factory overhead resulting from incurring a total amount of factory overhead cost that is greater or less than the amount budgeted for the level of operations achieved is termed controllable variance.
ANS: T DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

42. The most effective means of presenting standard factory overhead cost variance data is through a factory overhead cost budget.
ANS: F DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

43. The most effective means of presenting standard factory overhead cost variance data is through a factory overhead cost variance report.
ANS: T DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

44. Since the controllable variance measures the efficiency of using variable overhead resources, if budgeted variable overhead exceeds actual results, the variance is favorable.
ANS: T DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

45. An unfavorable volume variance may be due to a failure of supervisors to maintain an even flow of work.
ANS: T DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

46. Favorable volume variances are never harmful, since achieving them encourages managers to run the factory above normal capacity.
ANS: F DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

47. When using a flexible budget, the variable costs will be the same regardless of the production levels.
ANS: F DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

48. Volume variance measures fixed factory overhead.
ANS: T DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

49. Though favorable volume variances are usually good news, if inventory levels are too high, additional production could be harmful.
ANS: T DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

50. Standard costs are a useful management tool that can be used solely as a statistical device apart from the ledger or they can be incorporated in the accounts.
ANS: T DIF: Easy OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement

51. At the end of the fiscal year, the variances from standard are usually transferred to the finished goods account.
ANS: F DIF: Difficult OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement

52. Standard cost variances are usually not reported in reports to stockholders.
ANS: T DIF: Easy OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement

53. Standards are more widely used for nonmanufacturing expenses than for manufacturing costs.
ANS: F DIF: Easy OBJ: 22(7)-06
NAT: AACSB Analytic | IMA-Performance Measurement

54. Variances from standard rarely conflict with nonfinancial performance measures, such as employee satisfaction.
ANS: F DIF: Easy OBJ: 22(7)-06
NAT: AACSB Analytic | IMA-Performance Measurement

55. On-time delivery and elapsed time between customer order and product delivery should not enter into the process of developing cost standards.
ANS: T DIF: Easy OBJ: 22(7)-06
NAT: AACSB Analytic | IMA-Performance Measurement

56. Though it is harder to apply, standards for nonmanufacturing expenses can be used for common and repetitive operations.
ANS: T DIF: Easy OBJ: 22(7)-06
NAT: AACSB Analytic | IMA-Performance Measurement

57. A company must choice either a standard system or nonfinancial performance measures to evaluate the performance of a company.
ANS: F DIF: Easy OBJ: 22(7)-06
NAT: AACSB Analytic | IMA-Performance Measurement

58. Employees may work quickly to meet expected production but fail to meet quality standards, in turn, it may cause expensive rework, rejects, and customer dissatisfaction.
ANS: T DIF: Easy OBJ: 22(7)-06
NAT: AACSB Analytic | IMA-Performance Measurement

MULTIPLE CHOICE

1. Which of the following conditions normally would not indicate that standard costs should be revised?
   a. The engineering department has revised product specifications in responding to customer suggestions.
   b. The company has signed a new union contract which increases the factory wages on average by $2.00 an hour.
   c. Actual costs differed from standard costs for the preceding week.
   d. The world price of raw materials increased.

ANS: C DIF: Difficult OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

2. Standards that represent levels of operation that can be attained with reasonable effort are called:
   a. theoretical standards
   b. ideal standards
   c. variable standards
   d. normal standards

ANS: D DIF: Difficult OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

3. Manufacturing companies use standard costs for the following except:
   a. Variable costs
   b. Direct Materials
   c. Direct Labor
   d. Factory Overhead

ANS: A DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

4. Standard costs are used in companies for a variety of reasons. Which of the following is not one of the benefits for using standard costs?
   a. Used to indicate where changes in technology and machinery need to be made.
   b. Used to value inventory
   c. Used to plan direct materials, direct labor, and factory manufacturing cost.
   d. Used to control costs.

ANS: A DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

5. The principle of exceptions allows managers to
   a. focus on correcting variances between standard costs and actual costs.
   b. focus on correcting variances between variable costs and actual costs.
   c. focus on correcting variances between competitor's costs and actual costs.
   d. focus on correcting variances between competitor's costs and standard costs.

ANS: A DIF: Easy OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

6. Several people play an essential part in setting standards. Which of the following is incorrect as to setting standards?
   a. Accountants expresses judgement in dollars and cents.
   b. Engineers identify material, labor, and machine requirements.
   c. Human resource managers provide personnel information.
   d. Quality managers provide quality measures that will be used to evaluate rejects.

ANS: D DIF: Moderate OBJ: 22(7)-01
NAT: AACSB Analytic | IMA-Performance Measurement

7. Periodic comparisons between planned objectives and actual performance are reported in:
   a. zero-base reports
   b. budget performance reports
   c. master budgets
   d. budgets

ANS: B DIF: Easy OBJ: 22(7)-02
NAT: AACSB Analytic | IMA-Performance Measurement

8. The standard price and quantity of direct materials are separated because:
   a. GAAP reporting requires this separation
   b. direct materials prices are controlled by the purchasing department, and quantity used is controlled by the production department
   c. standard quantities are more difficult to estimate than standard prices
   d. standard prices change more frequently than standard quantities

ANS: B DIF: Easy OBJ: 22(7)-02
NAT: AACSB Analytic | IMA-Performance Measurement

9. Standard costs are divided into which of the following components?
   a. Price Standard and Quantity Standard
   b. Materials Standard and Labor Standard
   c. Quality Standard and Quantity Standard
   d. Price Standard and Quantity Standard

ANS: D DIF: Easy OBJ: 22(7)-02
NAT: AACSB Analytic | IMA-Performance Measurement

10. A favorable cost variance occurs when
   a. Actual costs are more than standard costs.
   b. Standard costs are more than actual costs.
   c. Standard costs are less than actual costs.
   d. None of the above.

ANS: B DIF: Easy OBJ: 22(7)-02
NAT: AACSB Analytic | IMA-Performance Measurement

11. Total manufacturing cost variance includes:
    a. Direct materials price variance, direct labor cost variance, and fixed factory overhead volume variance
    b. Direct materials cost variance, direct labor rate variance, and factory overhead cost variance
    c. Direct materials cost variance, direct labor cost variance, variable factory overhead controllable variance
    d. Direct materials cost variance, direct labor cost variance, factory overhead cost variance

ANS: D DIF: Moderate OBJ: 22(7)-02
NAT: AACSB Analytic | IMA-Performance Measurement

12. Which of the following is not a reason standard costs are separated in two components?
    a. the price and quantity variances need to be identified separately to correct the actual major differences.
    b. identifying variances determines which manager must find a solution to major discrepancies.
    c. if a negative variance is over-shadowed by a favorable variance, managers may overlook potential corrections.
    d. variances brings attention to discrepancies in the budget and requires managers to revise budgets closer to actual.

ANS: D DIF: Difficult OBJ: 22(7)-02
NAT: AACSB Analytic | IMA-Performance Measurement

13. The standard costs and actual costs for direct materials for the manufacture of 2,500 actual units of product are as follows:

	Standard Costs
Direct materials (per completed unit)	1.04 kilograms @$8.75

	Actual Costs
Direct materials	2,500 kilograms @ $8

The amount of direct materials price variance is:
    a. $1,875 unfavorable
    b. $1,950 favorable
    c. $1,875 favorable
    d. $1,950 unfavorable

ANS: C DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

14. The standard costs and actual costs for direct materials for the manufacture of 2,500 actual units of product are as follows:

Standard Costs	
Direct materials	2,500 kilograms @ $8

Actual Costs	
Direct materials	2,600 kilograms @ $8.75

The amount of the direct materials quantity variance is:
a. $875 favorable
b. $800 unfavorable
c. $800 favorable
d. $875 unfavorable

ANS: B DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

The following data relate to direct materials costs for November:

Actual costs	4,600 pounds at $5.50
Standard costs	4,500 pounds at $6.00

15. What is the direct materials price variance?
a. $2,250 favorable
b. $2,250 unfavorable
c. $2,300 favorable
d. $1,700 unfavorable

ANS: C DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

16. What is the direct materials quantity variance?
a. $550 unfavorable
b. $600 favorable
c. $550 favorable
d. $600 unfavorable

ANS: D DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

17. If the actual quantity of direct materials used in producing a commodity differs from the standard quantity, the variance is termed:
a. controllable variance
b. price variance
c. quantity variance
d. rate variance

ANS: C DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

18. If the price paid per unit differs from the standard price per unit for direct materials, the variance is termed:
    a. variable variance
    b. controllable variance
    c. price variance
    d. volume variance

ANS: C DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

The following data is given for the Walker Company:

Budgeted production	1,000 units
Actual production	980 units
Materials:	
Standard price per lb	$2.00
Standard pounds per completed unit	12
Actual pounds purchased and used in production	11,800
Actual price paid for materials	$23,000
Labor:	
Standard hourly labor rate	$14 per hour
Standard hours allowed per completed unit	4.5
Actual labor hours worked	4,560
Actual total labor costs	$62,928
Overhead:	
Actual and budgeted fixed overhead	$27,000
Standard variable overhead rate	$3.50 per standard labor hour
Actual variable overhead costs	$15,500

Overhead is applied on standard labor hours.

19. The direct material price variance is:
    a. 600F
    b. 600U
    c. 80F
    d. 80U

ANS: A DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

20. The direct material quantity variance is:
    a. 600F
    b. 600U
    c. 80F
    d. 80U

ANS: D DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

The following data is given for the Walker Company:

Budgeted production	26,000 units
Actual production	27,500 units
Materials:	
Standard price per ounce	$6.50
Standard ounces per completed unit	8
Actual ounces purchased and used in production	228,000
Actual price paid for materials	$1,504,800
Labor:	
Standard hourly labor rate	$22 per hour
Standard hours allowed per completed unit	6.6
Actual labor hours worked	183,000
Actual total labor costs	$4,020,000
Overhead:	
Actual and budgeted fixed overhead	$1,029,600
Standard variable overhead rate	$24.50 per standard labor hour
Actual variable overhead costs	$4,520,000

Overhead is applied on standard labor hours.

21. The direct material price variance is:
    a. 22,800U
    b. 22,800F
    c. 52,000U
    d. 52,000F

ANS: A DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

22. The direct material quantity variance is:
    a. 22,800F
    b. 22,800U
    c. 52,000F
    d. 52,000U

ANS: D DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

The Joyner Corporation purchased and used 126,000 board feet of lumber in production, at a total cost of $1,449,000. Original production had been budgeted for 22,000 units with a standard material quantity of 5.5 board feet per unit and a standard price of $12 per board foot. Actual production was 23,000 units.

23. Compute the material price variance.
    a. 63,000F
    b. 63,000U
    c. 6,000F
    d. 6,000U

ANS: A DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

24. Compute the material quantity variance.
    a. 63,000F
    b. 63,000U
    c. 6,000F
    d. 6,000U

ANS: C DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

25. If the wage rate paid per hour differs from the standard wage rate per hour for direct labor, the variance is termed:
    a. variable variance
    b. rate variance
    c. quantity variance
    d. volume variance

ANS: B DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

26. If the actual direct labor hours spent producing a commodity differ from the standard hours, the variance is termed:
    a. time variance
    b. price variance
    c. quantity variance
    d. rate variance

ANS: A DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

27. The following data relate to direct labor costs for the current period:

Standard costs	7,500 hours at $11.60
Actual costs	6,000 hours at $12.00

What is the direct labor time variance?
    a. $3,000 favorable
    b. $15,000 unfavorable
    c. $2,400 favorable
    d. $17,400 favorable

ANS: D DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

28. The following data relate to direct labor costs for the current period:

Standard costs	6,000 hours at $12.00
Actual costs	7,500 hours at $11.60

What is the direct labor rate variance?
a. $15,000 unfavorable
b. $3,000 favorable
c. $17,400 unfavorable
d. $2,400 favorable

ANS: B DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

29. The following data relate to direct labor costs for the current period:

Standard costs	9,000 hours at $5.50
Actual costs	8,750 hours at $5.75

What is the direct labor rate variance?
a. $2,250.00 unfavorable
b. $2,187.50 unfavorable
c. $1,438.00 favorable
d. $1,375.00 favorable

ANS: B DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

30. The following data relate to direct labor costs for the current period:

Standard costs	36,000 hours at $22.50
Actual costs	35,000 hours at $23.00

What is the direct labor time variance?
a. $17,500 unfavorable
b. $18,000 unfavorable
c. $5,000 favorable
d. $22,500 favorable

ANS: D DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

31. The standard costs and actual costs for direct labor for the manufacture of 2,500 actual units of product are as follows:

Standard Costs	
Direct labor	7,500 hours @ $12

Actual Costs	
Direct labor	7,400 hours @ $11.40

The amount of the direct labor rate variance is:
a. $4,440 unfavorable
b. $4,500 favorable
c. $4,440 favorable
d. $4,500 unfavorable

ANS: C DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

32. The standard costs and actual costs for direct materials, direct labor, and factory overhead for the manufacture of 2,500 units of product are as follows:

Standard Costs	
Direct labor	7,500 hours @ $12

Actual Costs	
Direct labor	7,400 hours @ $11.40

The amount of the direct labor time variance is:
a. $1,200 favorable
b. $1,140 unfavorable
c. $1,200 unfavorable
d. $1,140 favorable

ANS: A DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

The following data relate to direct labor costs for February:

Actual costs	7,700 hours at $13
Standard costs	7,000 hours at $9

33. What is the direct labor time variance?
a. $9,100 favorable
b. $9,100 unfavorable
c. $6,300 unfavorable
d. $6,300 favorable

ANS: C DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

34. What is the direct labor rate variance?
    a. $28,000 favorable
    b. $28,000 unfavorable
    c. $30,800 favorable
    d. $30,800 unfavorable

ANS: D DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

The following data is given for the Walker Company:

Budgeted production	1,000 units
Actual production	980 units
Materials:	
Standard price per lb	$2.00
Standard pounds per completed unit	12
Actual pounds purchased and used in production	11,800
Actual price paid for materials	$23,000
Labor:	
Standard hourly labor rate	$14 per hour
Standard hours allowed per completed unit	4.5
Actual labor hours worked	4,560
Actual total labor costs	$62,928
Overhead:	
Actual and budgeted fixed overhead	$27,000
Standard variable overhead rate	$3.50 per standard labor hour
Actual variable overhead costs	$15,500

Overhead is applied on standard labor hours.

35. The direct labor rate variance is:
    a. 912U
    b. 912F
    c. 2,100U
    d. 2,100F

ANS: B DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

36. The direct labor time variance is:
    a. 912F
    b. 912U
    c. 2,100U
    d. 2,100F

ANS: C DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

The following data is given for the Walker Company:

Budgeted production	26,000 units
Actual production	27,500 units
Materials:	
Standard price per ounce	$6.50
Standard ounces per completed unit	8
Actual ounces purchased and used in production	228,000
Actual price paid for materials	$1,504,800
Labor:	
Standard hourly labor rate	$22 per hour
Standard hours allowed per completed unit	6.6
Actual labor hours worked	183,000
Actual total labor costs	$4,020,000
Overhead:	
Actual and budgeted fixed overhead	$1,029,600
Standard variable overhead rate	$24.50 per standard labor hour
Actual variable overhead costs	$4,520,000

Overhead is applied on standard labor hours.

37. The direct labor rate variance is:
    a. 6,000U
    b. 6,000F
    c. 33,000F
    d. 33,000U

ANS: B DIF: Difficult OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

38. The direct labor time variance is:
    a. 6,000F
    b. 6,000U
    c. 33,000U
    d. 33,000F

ANS: C DIF: Difficult OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

The Joyner Corporation had 8,000 actual direct labor hours at an actual rate of $12.20 per hour. Original production had been budgeted for 1,100 units, but only 1,000 units were actually produced. Labor standards were 7.5 hours per completed unit at a standard rate of $13 per hour.

39. Compute the labor rate variance.
    a. 6,400U
    b. 6,400F
    c. 6,500U
    d. 6,500U

ANS: B DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

40. Compute the labor time variance.
    a. 6,400F
    b. 6,400U
    c. 6,500U
    d. 6,500F

ANS: C DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

	Standard	Actual
Material Cost Per Yard	$2.00	$2.04
Standard Yards per Unit	5 yards	4.75 yards
Units of Production		9,450

41. Calculate the Total Direct Materials cost variance using the above information:
    a. $2,929.50 Unfavorable
    b. $2,929.50 Favorable
    c. $3,780.00 Unfavorable
    d. $3,562.50 Favorable

ANS: B DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

42. Calculate the Total Direct Materials Price variance using the above information:
    a. $1,795.50 Favorable
    b. $378 Favorable
    c. $1,795.50 Unfavorable
    d. $378 Unfavorable

ANS: C DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

43. Calculate the Total Direct Materials Quantity variance using the above information:
    a. $2,929.50 Unfavorable
    b. $2,929.50 Favorable
    c. $4,725 Unfavorable
    d. $4,725 Favorable

ANS: D DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

	Standard	Actual
Rate	$12.00	$12.25
Hours	18,900	17,955
Units of Production		9,450

44. Calculate the Direct Labor Variance using the above information
    a. $6,851.25 Favorable
    b. $6,851.25 Unfavorable
    c. $2,362.50 Unfavorable
    d. $2,362.50 Favorable

ANS: A DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

45. Calculate the Direct Labor Time Variance using the above information
    a. $2,362.50 Favorable
    b. $2,362,50 Unfavorable
    c. $11,340.00 Favorable
    d. $11,340.00 Unfavorable

ANS: C DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

46. Calculate the Direct Labor Rate Variance using the above information
    a. $4,488.75 Unfavorable
    b. $6,851.25 Favorable
    c. $4,488.75 Favorable
    d. $6,851.25 Unfavorable

ANS: A DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

47. Which of the following is not a reason for a direct materials quantity variance?
    a. Malfunctioning equipment
    b. Purchasing of inferior raw materials
    c. Material requiring rework
    d. Spoilage of materials

ANS: C DIF: Difficult OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

48. The formula to compute direct labor rate variance is to calculate the difference between
    a. actual costs + (actual hours * standard rate)
    b. actual costs - standard cost
    c. (actual hours * standard rate) - standard costs
    d. actual costs - (actual hours * standard rate)

ANS: D DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

49. The formula to compute direct labor time variance is to calculate the difference between
    a. actual costs - standard costs
    b. actual costs + standard costs
    c. (actual hours * standard rate) - standard costs
    d. actual costs - (actual hours * standard rate)

ANS: C DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

50. The formula to compute direct materials price variance is to calculate the difference between
    a. actual costs - (actual quantity * standard price)
    b. actual cost + standard costs
    c. actual cost - standard costs
    d. (actual quantity * standard price) -standard costs

ANS: A DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

51. The formula to compute direct material quantity variance is to calculate the difference between
    a. actual costs - standard costs
    b. standard costs - actual costs
    c. (actual quantity * standard price) - standard costs
    d. actual costs - (standard price * standard costs)

ANS: C DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

52. Which of the following would not lend itself to applying direct labor variances?
    a. Help desk
    b. Administrative assistant
    c. Customer service personnel
    d. Telemarketer

ANS: B DIF: Easy OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

The standard costs and actual costs for factory overhead for the manufacture of 2,500 units of actual production are as follows:

Standard Costs

Fixed overhead (based on 10,000 hours)	3 hours @ $.80 per hour
Variable overhead	3 hours @ $2 per hour

Actual Costs

Total variable cost, $18,000
Total fixed cost, $8,000

53. The amount of the factory overhead volume variance is:
    a. $2,000 favorable
    b. $2,000 unfavorable
    c. $2,500 unfavorable
    d. $0

ANS: B DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

54. The amount of the total factory overhead cost variance is:
    a. $2,000 favorable
    b. $5,000 unfavorable
    c. $2,500 unfavorable
    d. $0

ANS: B DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

55. The amount of the factory overhead controllable variance is:
    a. $2,000 unfavorable
    b. $3,000 favorable
    c. $0
    d. $3,000 unfavorable

ANS: D DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

The standard factory overhead rate is $10 per direct labor hour ($8 for variable factory overhead and $2 for fixed factory overhead) based on 100% capacity of 30,000 direct labor hours. The standard cost and the actual cost of factory overhead for the production of 5,000 units during May were as follows:

Standard:	25,000 hours at $10	$250,000
Actual:	Variable factory overhead	202,500
	Fixed factory overhead	60,000

56. What is the amount of the factory overhead volume variance?
    a. $12,500 favorable
    b. $10,000 unfavorable
    c. $12,500 unfavorable
    d. $10,000 favorable

ANS: B DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

57. What is the amount of the factory overhead controllable variance?
    a. $10,000 favorable
    b. $2,500 unfavorable
    c. $10,000 unfavorable
    d. $2,500 favorable

ANS: B DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

58. Assuming that the standard fixed overhead rate is based on full capacity, the cost of available but unused productive capacity is indicated by the:
    a. factory overhead cost volume variance
    b. direct labor cost time variance
    c. direct labor cost rate variance
    d. factory overhead cost controllable variance

ANS: A DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

The standard factory overhead rate is $7.50 per machine hour ($6.20 for variable factory overhead and $1.30 for fixed factory overhead) based on 100% capacity of 80,000 machine hours. The standard cost and the actual cost of factory overhead for the production of 15,000 units during August were as follows:

Actual:	Variable factory overhead	$360,000
	Fixed factory overhead	104,000
Standard hours allowed for units produced:	60,000 hours at $7.50	450,000

59. What is the amount of the factory overhead volume variance?
    a. $12,000 unfavorable
    b. $12,000 favorable
    c. $14,000 unfavorable
    d. $26,000 unfavorable

ANS: D DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

60. What is the amount of the factory overhead controllable variance?
    a. $12,000 unfavorable
    b. $12,000 favorable
    c. $14,000 unfavorable
    d. $26,000 unfavorable

ANS: B DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

61. Incurring actual indirect factory wages in excess of budgeted amounts for actual production results in a:
    a. quantity variance
    b. controllable variance
    c. volume variance
    d. rate variance

ANS: B DIF: Difficult OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

62. The controllable variance measures:
    a. operating results at less than normal capacity
    b. the efficiency of using variable overhead resources
    c. operating results at more than normal capacity
    d. control over fixed overhead costs

ANS: B DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

63. The unfavorable volume variance may be due to all but the following factors:
    a. failure to maintain an even flow of work
    b. machine breakdowns
    c. unexpected increases in the cost of utilities
    d. failure to obtain enough sales orders

ANS: C DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

64. Favorable volume variances may be harmful when:
    a. machine repairs cause work stoppages
    b. supervisors fail to maintain an even flow of work
    c. production in excess of normal capacity cannot be sold
    d. there are insufficient sales orders to keep the factory operating at normal capacity

ANS: C DIF: Difficult OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

65. The following data is given for the Walker Company:

Budgeted production	1,000 units
Actual production	980 units
Materials:	
Standard price per lb	$2.00
Standard pounds per completed unit	12
Actual pounds purchased and used in production	11,800
Actual price paid for materials	$23,000
Labor:	
Standard hourly labor rate	$14 per hour
Standard hours allowed per completed unit	4.5
Actual labor hours worked	4,560
Actual total labor costs	$62,928
Overhead:	
Actual and budgeted fixed overhead	$27,000
Standard variable overhead rate	$3.50 per standard direct labor hour
Actual variable overhead costs	$15,500

Overhead is applied on standard labor hours.

The factory overhead controllable variance is:

a. 65U
b. 65F
c. 540U
d. 540F

ANS: A DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

66. The following data is given for the Walker Company:

Budgeted production	1,000 units
Actual production	980 units
Materials:	
Standard price per lb	$2.00
Standard pounds per completed unit	12
Actual pounds purchased and used in production	11,800
Actual price paid for materials	$23,000
Labor:	
Standard hourly labor rate	$14 per hour
Standard hours allowed per completed unit	4.5
Actual labor hours worked	4,560
Actual total labor costs	$62,928
Overhead:	
Actual and budgeted fixed overhead	$27,000
Standard variable overhead rate	$3.50 per standard labor hour
Actual variable overhead costs	$15,500

Overhead is applied on standard labor hours.

The factory overhead volume variance is:

a. 65U
b. 65F
c. 540U
d. 540F

ANS: C DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

The following data is given for the Walker Company:

Budgeted production	26,000 units
Actual production	27,500 units
Materials:	
Standard price per ounce	$6.50
Standard ounces per completed unit	8
Actual ounces purchased and used in production	228,000
Actual price paid for materials	$1,504,800
Labor:	
Standard hourly labor rate	$22 per hour
Standard hours allowed per completed unit	6.6
Actual labor hours worked	183,000
Actual total labor costs	$4,020,000
Overhead:	
Actual and budgeted fixed overhead	$1,029,600
Standard variable overhead rate	$24.50 per standard labor hour
Actual variable overhead costs	$4,520,000

Overhead is applied on standard labor hours.

67. The factory overhead controllable variance is:
    a. 73,250F
    b. 73,250U
    c. 59,400F
    d. 59,400U

ANS: B DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

68. The factory overhead volume variance is:
    a. 73,250U
    b. 73,250F
    c. 59,400F
    d. 59,400U

ANS: C DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

The Joyner Corporation originally budgeted for $360,000 of fixed overhead. Production was budgeted to be 12,000 units. The standard hours for production were 5 hours per unit. The variable overhead rate was $3 per hour. Actual fixed overhead was $360,000 and actual variable overhead was $170,000. Actual production was 11,700 units.

69. Compute the factory overhead controllable variance.
    a. 9,000F
    b. 9,000U
    c. 5,500F
    d. 5,500U

ANS: C DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

70. Compute the factory overhead volume variance.
    a. 9,000F
    b. 9,000U
    c. 5,500F
    d. 5,500U

ANS: B DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

	Standard	Actual
Variable OH Rate	$3.35	
Fixed OH Rate	$1.80	
Hours	18,900	17,955
Fixed Overhead	$46,000	
Factory Overhead		$101,450

71. Calculate the total factory overhead cost variance using the above information:
    a. $4,866.75 Unfavorable
    b. $4,866.75 Favorable
    c. $8,981.75 Favorable
    d. $8,981.75 Unfavorable

ANS: D DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

72. Calculate the fixed factory overhead volume variance using the above information:
    a. $1,701 Favorable
    b. $4,866.75 Unfavorable
    c. $1,701 Unfavorable
    d. $4,866.75 Favorable

ANS: C DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

73. Calculate the variable factory overhead controllable variance using the above information:
    a. $8,981.75 Favorable
    b. $7,280.75 Unfavorable
    c. $8,981.75 Unfavorable
    d. $7,280.75 Favorable

ANS: B DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

74. A negative fixed overhead volume variance can be caused due to the following except:
    a. Sales orders at a low level
    b. Machine breakdowns
    c. Employee inexperience
    d. Increase in utility costs

ANS: D DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

75. At the end of the fiscal year, variances from standard costs are usually transferred to the:
    a. direct labor account
    b. factory overhead account
    c. cost of goods sold account
    d. direct materials account

ANS: C DIF: Easy OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement

76. Variances from standard costs are usually reported to:
    a. suppliers
    b. stockholders
    c. management
    d. creditors

ANS: C DIF: Easy OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement

77. If at the end of the fiscal year the variances from standard are significant, the variances should be transferred to the:
    a. work in process account
    b. cost of goods sold account
    c. finished goods account
    d. work in process, cost of goods sold, and finished goods accounts

ANS: D DIF: Difficult OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement

78. Assuming that the Morrita Desk Co. purchases 8,000 feet of lumber at $5.50 per foot and the standard price for direct materials is $5.00, the entry to record the purchase and unfavorable direct materials price variance is:

a. Direct Materials	40,000	
Direct Materials Price Variance	4,000	
Accounts Payable		44,000
b. Direct Materials	40,000	
Accounts Payable		40,000
c. Direct Materials	44,000	
Direct Materials Price Variance		4,000
Accounts Payable		40,000
d. Work in Process	44,000	
Direct Materials Price Variance		4,000
Accounts Payable		40,000

ANS: A DIF: Easy OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement

79. A company records their inventory purchases at standard cost but also records purchase price variances. The company purchased 5,000 widgets $8.00, the standard cost for the widgets is $7.90. Which of the following would be included in the journal entry?
    a. $39,500 Debit to Accounts Payable
    b. $500 Credit to Direct Materials Price Variance
    c. $39,500 Credit to Accounts Payable
    d. $500 Debit to Direct Materials Price Variance

ANS: D DIF: Easy OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement

80. The use of standards for nonmanufacturing expenses is:
    a. not as common as it is for manufacturing costs
    b. as common as it is for manufacturing costs
    c. not useful
    d. impossible

ANS: A DIF: Difficult OBJ: 22(7)-06
NAT: AACSB Analytic | IMA-Performance Measurement

EXERCISE/OTHER

1. Diamond Company produces a chair that requires 5 yds. of material per unit. The standard price of one yard of material is $7.50. During the month, 8,500 chairs were manufactured, using 43,700 yards at a cost of $7.60. Determine the (a) price variance, (b) quantity variance, and (c) cost variance.

ANS:
(a) Price variance - ($7.50 - $7.60) * 43,700 = $4,370 unfavorable

(b) Quantity variance - ((5 * 8,500) - 43,700) * $7.50 = $9,000 unfavorable

(c) Cost variance - $13,370 unfavorable

DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement TOP: Example Exercise 22(7)-1

2. Diamond Company produces a chair that requires 5 yds. of material per unit. The standard price of one yard of material is $7.50. During the month, 8,500 chairs were manufactured, using 43,700 yards at a cost of $7.30. Determine the (a) price variance, (b) quantity variance, and (c) cost variance.

ANS:
(a) Price variance - ($7.50 - $7.30) * 43,700 = $8,740 favorable

(b) Quantity variance - ((5 * 8,500) - 43,700)) * $7.50 = $9,000 unfavorable

(c) Cost variance - $260 unfavorable

DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

3. Diamond Company produces a chair that requires 5 yds. of material per unit. The standard price of one yard of material is $7.50. During the month, 8,500 chairs were manufactured, using 40,000 yards at a cost of $7.60. Determine the (a) price variance, (b) quantity variance, and (c) cost variance.

ANS:
(a) Price variance - ($7.50 - $7.60) * 40,000 = $4,000 unfavorable

(b) Quantity variance - ((8,500 * 5) - 40,000) * $7.50 = $18,750 favorable

(c) Cost variance $14,750 favorable

DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

4. Koko company produces lamps that require 2.25 standard hours per unit at an hourly rate of $15 per hour. If 7,700 units required 19,250 hours at an hourly rate of $14.90 per hour, what is the direct labor (a) rate variance, (b) time variance, and (c) cost variance.

ANS:
(a) Rate variance - ($15.00 - $14.90) * 19,250 = $1,925 favorable

(b) Time variance - ((7,700 * $2.25) - 19,250) * $15 = $28,875 unfavorable

(c) Cost variance - $286,825 - $259,875 = $26,950 unfavorable

DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement TOP: Example Exercise 22(7)-2

5. Koko company produces lamps that require 2.25 standard hours per unit at an hourly rate of $15 per hour. If 7,700 units required 17,550 hours at an hourly rate of $15.20 per hour, what is the direct labor (a) rate variance, (b) time variance, and (c) cost variance.

ANS:
(a) Rate variance - ($15.00- $15.20) * 17,550 = $3,510 unfavorable

(b) Time variance - ((2.25 * 7,700) - 17,550) * $15 = $3,375 unfavorable

(c) Cost variance - ((2.25 * 7,700 * $15) - (17,550 * $15.20) = $6,885 unfavorable
or $3,530 + $3,375 = $6,885 unfavorable

DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

6. Good News Company produced 8,600 units of their product that required 3.25 standard hours per unit. The standard variable overhead cost per unit is $4.00 per hour. The actual variance factory overhead was $111,000. Determine the variable factory overhead controllable variance.

ANS:
(8,600 * 3.25 * $4.00) - $111,000 = $800 favorable

DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement TOP: Example Exercise 22(7)-3

7. The Good News Company produced 8,600 units of their product that required 3.25 standard hours per unit. The standard fixed overhead cost per unit is $1.20 per hour at 29,000 hours, which is 100% of normal capacity. Determine the fixed factory overhead volume variance.

ANS:
((8,600 * 3.25) - 29,000)* $1.20 = $1,260 unfavorable

DIF: Easy OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement TOP: Example Exercise 22(7)-4

8. Diamond Company produces a chair that requires 5 yds. of material per unit. The standard price of one yard of material is $7.50. During the month, 8,500 chairs were manufactured, using 40,000 yards. Journalize the entry to record the standard direct materials used in production.

ANS:

Work in Process	318,750	
Direct Materials Quantity Variance		18,750
Materials		300,000

DIF: Moderate OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement TOP: Example Exercise 22(7)-5

9. Prepare an income statement for the year ended December 31, 2008, through gross profit for Koko Company using the following information. Assume Koko Company sold 8,600 units at $125 per unit. (Note: Normal production is (9,000 units))

Standard: 5 yards per unit @ $6.30 per yard	Actual yards used: 43,240 yards @ $6.25 per yard
Standard: 2.25 hours per unit @ $15	Actual hours worked: 19,100 @ $14.90 per hour
Standard: Variable overhead $1.05 per unit	
Standard: Fixed overhead $211,500	Actual factory overhead $235,500

ANS:

Koko Company
Income Statement Through Gross Profit
For the year ended December 31, 2008

Sales				$1,075,000
Cost of goods sold - at standard				772,280
Gross profit - at standard *				302,720
		Favorable	Unfavorable	
Less variances from standard cost				
Direct materials price		2,162		
Direct materials quantity			1,512	
Direct labor rate		1,910		
Direct labor time		3,750		
Factory overhead controllable			14,970	
Factory overhead volume			9,400	
				18,060
Gross Profit				284,660

* (5* $6.30) + ($2.25 * 15) + ($211,500/9,000) + $1.05= $89.90

DIF: Difficult OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement TOP: Example Exercise 22(7)-6

10. If a company records their inventory purchases at standard cost but also records purchase price variances, what journal entry would be recorded if a purchase of 5,000 widgets were bought at $8.00 having a standard cost of $8.15?

ANS:

	Dr	**Cr**
Materials (5,000 * $8.15)	40,750	
Direct Materials Price Variance		750
Accounts Payable (5,000 * $8.00)		40,000

DIF: Easy OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement

11. The following are inputs and outputs to the help desk.

Operator training
Number of calls per day
Maintenance of computer equipment
Number of operators
Number of complaints

Identify whether each is an input or an output to the help desk.

ANS:
Operator training - Input
Number of calls per day - Output
Maintenance of computer equipment - Input
Number of operators - Input
Number of complaints - Output

DIF: Difficult OBJ: 22(7)-06
NAT: AACSB Analytic | IMA-Performance Measurement TOP: Example Exercise 22(7)-7

PROBLEM

1. Compute the standard cost for one hat, based on the following standards for each hat:

Standard Material Quantity:	1/2 yard of fabric at $4.00 per yard
Standard Labor:	1 hour at $5.75 per hour
Factory Overhead:	$2.90 per direct labor hour

ANS:

Standard Material:	1/2 yard at $4.00 per yard	$ 2.00
Standard Labor:	1 hour at $5.75 per hour	5.75
Factory Overhead:	1 hour at $2.90 per hour	2.90
Total standard cost		$10.65

DIF: Easy OBJ: 22(7)-02
NAT: AACSB Analytic | IMA-Performance Measurement

2. Standard and actual costs for direct materials for the manufacture of 1,000 units of product were as follows:

Actual costs	1,550 lbs. @ $9.10
Standard costs	1,600 lbs. @ $9.00

Determine the (a) quantity variance, (b) price variance, and (c) total direct materials cost variance.

ANS:

(a)

Actual quantity	1,550 lbs.
Standard quantity	1,600 lbs.
Quantity variance--favorable	(50) lbs.
× standard price	$ 9.00
	$(450)

(b)

Actual price	$9.10 per lb.
Standard price	9.00 per lb.
Price variance--unfavorable	$ .10 per lb.
× actual quantity	1,550
	$ 155

(c)

Quantity variance--favorable	$(450)
Price variance--unfavorable	155
Total direct materials cost variance--favorable	$(295)

DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

3. Standard and actual costs for direct labor for the manufacture of 1,000 units of product were as follows:

Actual costs	960 hours @ $36.00
Standard costs	970 hours @ $35.50

Determine the (a) time variance, (b) rate variance, and (c) total direct labor cost variance.

ANS:

(a)

Actual time	960 hours
Standard time	970 hours
Time variance--favorable	(10) hours
× standard rate	$35.50
	$ (355)

(b)

Actual rate	$36.00 per hour
Standard rate	35.50 per hour
Rate variance--unfavorable	$ .50 per hour
× actual time	960
	$ 480

(c)

Time variance--favorable	$(355)
Rate variance--unfavorable	480
Total direct labor cost variance--unfavorable	$ 125

DIF: Moderate OBJ: 22(7)-03
NAT: AACSB Analytic | IMA-Performance Measurement

4. The following information is for the standard and actual costs for the Miller Corporation.

Standard Costs:
Budgeted units of production - 16,000 (80% of capacity)
Standard labor hours per unit - 4
Standard labor rate $26 per hour
Standard material per unit - 8 lbs.
Standard material cost - $ 12 per lb.
Budgeted fixed overhead $640,000
Standard variable overhead rate - $15 per labor hour.
Fixed overhead rate is based on budgeted labor hours at 80% capacity.

Actual Cost:
Actual production - 16,500 units
Actual fixed overhead - $640,000
Actual variable overhead - $1,000,000
Actual labor - 65,000 hours, total labor costs $1,700,000
Actual material purchased and used - 130,000 lbs, total material cost $1,600,000
Actual variable overhead - $1,000,000

Determine: (a) the quantity variance, price variance, and total direct materials cost variance; (b) the time variance, rate variance, and total direct labor cost variance; and (c) the volume variance, controllable variance, and total factory overhead cost variance.

ANS:

(a)

Quantity variance:

Actual quantity × standard price 130,000 × 12 =	$1,560,000
Standard quantity × standard price 132,000 × 12 =	1,584,000
Quantity variance (favorable)	24,000

Price variance:

Actual total price	$1,600,000
Actual quantity × standard price 130,000 × 12 =	$1,560,000
Price variance (unfavorable)	40,000

Total direct material cost variance:

Price variance (unfavorable)	40,000
Quantity variance (favorable)	24,000
Total (unfavorable)	64,000

(b)

Time variance:

Actual hours × standard rate 65,000 × 26 =	$1,690,000
Standard hours × standard rate 66,000 × 26 =	1,716,000
time variance (favorable)	26,000

Rate variance:

Actual labor costs	$1,700,000
Actual hours × standard rate 65,000 × 26 =	$1,690,000
rate variance (unfavorable)	10,000

Total direct labor cost variance:	
Time variance (favorable)	26,000
Rate variance (unfavorable)	10,000
Total (favorable)	16,000

(c)

Volume variance:	
Actual fixed overhead	$640,000
Applied FOH (16,500 × 4) × $10 =	660,000
Volume variance (favorable)	20,000
Controllable variance:	
Actual variable overhead	$1,000,000
Applied VOH (16,500 × 4) × $15 =	990,000
Controllable variance (unfavorable)	10,000
Total factory overhead cost variance:	
Volume variance (favorable)	20,000
Controllable variance (unfavorable)	10,000
Total (favorable)	10,000

DIF: Difficult OBJ: 22(7)-03 | 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

5. The Finishing Department of Paragon Manufacturing Co. prepared the following factory overhead cost budget for October of the current year, during which it expected to operate at a 100% capacity of 10,000 machine hours:

Variable cost:		
Indirect factory wages	$18,000	
Power and light	12,000	
Indirect materials	4,000	
Total variable cost		$34,000
Fixed cost:		
Supervisory salaries	$12,000	
Depreciation of plant and equipment	8,800	
Insurance and property taxes	3,200	
Total fixed cost		24,000
Total factory overhead		$58,000

During October, the plant was operated for 9,000 machine hours and the factory overhead costs incurred were as follows: indirect factory wages, $16,400; power and light, $10,000; indirect materials, $3,000; supervisory salaries, $12,000; depreciation of plant and equipment, $8,800; insurance and property taxes, $3,200.

Prepare a factory overhead cost variance report for October. (The budgeted amounts for actual amount produced should be based on 9,000 machine hours.)

ANS:

Paragon Manufacturing Co. - Finishing Department
Factory Overhead Cost Variance Report
For Month Ended October 31, 20--

Productive capacity for the month				10,000 hours
Actual production for the month				9,000 hours
			Variances	
	Budget	Actual	Favorable	Unfavorable
Variable cost:				
Indirect factory wages	$16,200	16,400		$ 200
Power and light	10,800	10,000	$ 800	
Indirect materials	3,600	3,000	600	
Total variable cost	$30,600	$29,400		
Fixed costs:				
Supervisory salaries	$12,000	$12,000		
Depreciation of plant and equipment	8,800	8,800		
Insurance and property taxes	3,200	3,200		
Total fixed cost	$24,000	$24,000		
Total factory overhead cost	$54,600	$51,600		
Total controllable variances			$1,400	$ 200
Net controllable variance--favorable				$1,200
Volume variance--unfavorable:				
Idle hours at the standard rate for fixed overhead-- 1,000 × $2.40				2,400
Total factory overhead cost variance--unfavorable				$1,200

DIF: Difficult OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

6. The following information relates to manufacturing overhead for the Parker Company:

Standards:
Total fixed factory overhead - $450,000
Estimated production - 25,000 units (100% of capacity)
Overhead rates are based on machine hours.
Standard hours allowed per unit produced - 2
Fixed overhead rate - $9 per machine hour
Variable overhead rate - $3.50 per hour.

Actual:
Fixed factory overhead - $450,000
Production 24,000 units.
Variable overhead - $170,000

Required:
(a) Compute the volume variance.
(b) Compute the controllable variance.
(c) Compute the total factory overhead cost variance.

ANS:

(a)

Productive capacity of 25,000 units	50,000 hours
Standard for product produced (24,000 units)	48,000 hours
Productive capacity not used	2,000 hours
Standard fixed factory overhead cost rate	$ 9 per hour
Volume variance (unfavorable)	$18,000

(b)

Actual Variable overhead incurred	$170,000
Budgeted factory overhead for standard units product produced (applied) $24{,}000 \times 2 \times 3.5 =$	168,000
Controllable variance (unfavorable)	$ 2,000

(c)

Volume variance (unfavorable)	$18,000
Controllable variance (unfavorable)	2,000
Cost variance (unfavorable)	$20,000

DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

7. Using the following information, prepare a factory overhead flexible budget for Koko Company where 6,000 units is considered normal capacity. Include capacity at 75%, 90%, 100%, and 110%. Total variable cost is $6.25 per unit and total fixed costs are $38,000. The information is for month ended August 31, 2008.

ANS:

Koko Company
Factory Overhead Cost Budget
For the Month Ending August 31, 2008

Percent of normal capacity	75%	90%	100%	110%
Units produced	4,500	5,400	6,000	6,600
Variable costs per unit $6.25	$28,125	$33,750	$37,500	$41,250
Fixed costs	38,000	38,000	38,000	38,000
Total factory overhead cost	$66,125	$71,750	$75,500	$79,250

DIF: Moderate OBJ: 22(7)-04
NAT: AACSB Analytic | IMA-Performance Measurement

8. Prepare an income statement (through income before income tax) for presentation to management, using the following data from the records of Brixton Manufacturing Company for November of the current year:

Administrative expenses	$ 73,500
Cost of goods sold (at standard)	470,000
Direct materials quantity variance-unfavorable	1,200
Direct materials price variance-favorable	2,400
Direct labor time variance-unfavorable	900
Direct labor rate variance-favorable	500
Factory overhead volume variance-unfavorable	10,000
Factory overhead controllable variance-favorable	1,500
Sales	900,000
Selling expenses	165,800

ANS:

Brixton Manufacturing Company
Income Statement
For Month Ended November 30, 20--

	Favorable	Unfavorable	
Sales			$900,000
Cost of goods sold--at standard			470,000
Gross profit--at standard			$430,000
Less variances from standard cost:			
Direct materials price	$2,400		
Direct materials quantity		$ 1,200	
Direct labor rate	500		
Direct labor time		900	
Factory overhead controllable	1,500		
Factory overhead volume		10,000	7,700
Gross profit			$422,300
Operating expenses:			
Selling expenses		$165,800	
Administrative expenses		73,500	239,300
Income before income tax			$183,000

DIF: Moderate OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement

9. Bee Company purchased 1,000 pounds of direct materials on account at $2 per pound. The standard price for direct materials is $1.90 per pound. Prepare the journal entry to record the purchase and the variance.

ANS:

Materials	1,900	
Direct Materials Price Variance	100	
Accounts Payable		2,000

DIF: Easy OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement

10. Bee Company used 500 pounds of direct materials to produce a product with a 520-pound standard direct materials requirement. The standard materials price is $1.90. The actual materials price is $2.00. Prepare the journal entry to record the material entering production and the variance.

ANS:

Work in Process	988	
Direct Materials Quantity Variance		38
Materials		950

DIF: Easy OBJ: 22(7)-05
NAT: AACSB Analytic | IMA-Performance Measurement