

**Standard Costing and Variance Analysis**

**Part I. THEORIES**

**A. Multiple Choice**

1. The primary purpose of using a standard cost system is to:
  - A. Make things easier for managers in the production facility.
  - B. Provide a distinct measure of cost control.
  - C. Minimize the cost per unit of production.
  - D. Assure continuous production of goods.
2. When evaluating the operating performance, management sometimes uses the difference between the expected and actual performance. This refers to:
  - A. Management by deviation
  - B. Management by control
  - C. Management by objective
  - D. Management by exception
3. Which of the following contains the two levels that standards may be set at?
  - A. Normal and ideal
  - B. Ideal and less efficient
  - C. Normal and fully efficient
  - D. Fully efficient and fully effective
4. In most companies, machines break down occasionally and employees are often less than perfect. Which type of standard acknowledges these characteristics when determining the standard cost of a product?
  - A. Efficiency standard
  - B. Ideal standard
  - C. Practical standard
  - D. Budgeted standard
5. A company employing very tight standards in a standard cost system should expect that
  - A. No incentive bonus will be paid.
  - B. Most variances will be unfavorable.
  - C. Employees will be strongly motivated to attain the standard.
  - D. Costs will be controlled better than if lower standards were used.
6. Which department is customarily held responsible for an unfavorable materials usage variance?
  - A. Quality control
  - B. Engineering
  - C. Purchasing

**D. Production**

7. Standards that represent levels of operation that can be attained with reasonable effort are called:
  - A. Theoretical standards
  - B. Ideal standards
  - C. Fixed standards
  - D. Normal standards
8. Which of the following is the most probable reason why a company would experience an unfavorable labor rate variance and a favorable labor efficiency variance?
  - A. The mix of workers assigned to the particular job was heavily weighted toward the use of higher-paid, experienced individuals.
  - B. The mix of workers assigned to the particular job was heavily weighted toward the use of new, relatively low paid, unskilled workers.
  - C. Because of the productive schedule, workers from other production areas were assigned to assist in this particular process.
  - D. Defective materials caused more labor to be used in order to produce a standard unit.
9. The variance most useful in evaluating plant utilization is the:
  - A. Variable overhead spending variance
  - B. Fixed overhead spending variance
  - C. Variable overhead efficiency variance
  - D. Fixed overhead volume variance
10. Which of the following statements is true regarding variance analysis in the modern manufacturing environment?
  - A. It requires all variances, regardless of size, to be investigated by managers.
  - B. The use of ideal standards over practical standards will always be the best motivator to employees.
  - C. An unfavorable variance should always be interpreted as bad.
  - D. It is often not performed in a timely enough manner to be useful to employees.
11. A manufacturer generally wants to set a standard that:
  - A. Can be achieved only under the most efficient operating conditions.
  - B. Is high enough to provide motivation and promote efficiency, but is still attainable.
  - C. Makes no allowance for normal spoilage.
  - D. None of these.
12. The fixed overhead application rate is a function of a predetermined normal activity level. If standard hours allowed for good output equal this predetermined activity level for a given period, the volume variance will be:
  - A. Zero

- B. Favorable
  - C. Unfavorable
  - D. Either favorable or unfavorable, depending on the budgeted overhead.
13. When standard costs are used in a process costing system, how, if at all, are equivalent units involved or used in the cost report at standard?
- A. Equivalent units are not used
  - B. Equivalent units are computed using a special approach
  - C. The actual equivalent units are multiplied by the standard cost per unit
  - D. The standard equivalent unit are multiplied by the actual cost per unit
14. If the total materials variance for a given operation is favorable, why must this variance be further evaluated as to price and usage?
- A. There is no need to further evaluate the total materials variance if it is favorable
  - B. Financial reporting standards require that all variances be analyzed in three stages
  - C. All variances must appear in the annual report to equity owners for proper disclosure
  - D. To allow management to evaluate the efficiency of the purchasing and production functions
15. The choice of production volume as a denominator for calculating its factory overhead rate has
- A. No effect on the fixed factory overhead rate for applying costs to production
  - B. An effect on the variable overhead factory overhead rate for applying costs to production
  - C. No effect on the fixed factory overhead budget variance
  - D. No effect on the fixed factory overhead production volume variance
16. Old Republic Products has a favorable fixed overhead spending variance. Which of the following would be the most likely reason for this variance?
- A. More units were actually produced than predicted
  - B. Fewer units were actually produced than predicted
  - C. Actual fixed overhead was more than predicted
  - D. Actual fixed overhead was less than predicted
17. Elise Company uses direct labor hours as the cost driver for variable overhead. In order to calculate the variable overhead spending variance, which of the following items does not need to be known?
- A. Actual overhead costs
  - B. Actual direct labor hours
  - C. Standard variable overhead rate per direct labor hour
  - D. Standard direct labor hours allowed
18. The variable overhead efficiency variance:

- A. Is interpreted in the same manner as the direct labor efficiency variance
  - B. Measures the efficient use of factory utilities, factory maintenance, and factory supplies
  - C. Measures the efficient use of the cost driver used in the flexible budget
  - D. Measures the efficient use of direct materials
19. The variance least significant for purposes of controlling costs is the:
- A. Material usage variance
  - B. Variable overhead efficiency variance
  - C. Fixed overhead spending variance
  - D. Fixed overhead volume variance
20. In analyzing manufacturing overhead variances, the volume variance is the difference between the:
- A. Amount shown in the flexible budget and the amount shown in the debit side of the overhead control account
  - B. Predetermined overhead application rate and the flexible budget application rate times actual hours worked
  - C. Budget allowance based on standard hours allowed for actual production for the period and the amount budgeted to be applied during the period
  - D. Actual amount spent for overhead items during the period and the overhead amount applied to production during the period
21. To measure controllable production inefficiencies, which of the following is the best basis for a company to use in establishing the standard hours allowed for the output of one unit of product?
- A. Average historical performance for the last several years
  - B. Engineering estimates based on ideal performance
  - C. Engineering estimates based on attainable performance
  - D. The hours per unit that would be required for the present workforce to satisfy expected demand over the long run
22. 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
23. A difference between standard costs used for cost control and the budgeted costs representing the same manufacturing effort can exist because:
- A. Standard costs must be determined after the budget is completed
  - B. Standard costs represent what costs should be while budgeted costs represent expected actual costs

- C. Budgeted costs are historical costs while standard costs are based on engineering studies
  - D. Budgeted costs include some slack or padding while standard costs do not
24. A company may set predetermined overhead rates based on normal, expected annual, or theoretical capacity. At the end of the period, the fixed overhead spending variance would:
- A. Be the same regardless of the capacity level selected
  - B. Be the largest if theoretical capacity
  - C. Be the smallest if theoretical capacity had been selected
  - D. Not occur if actual capacity were the same as the capacity level selected
25. The standard price and quantity of direct materials are separated because:
- A. PFRS/IFRS require 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 the standard price
  - D. Standard price changes more frequently than the standard quantities
26. Variance analysis should be used
- A. As the only source of information for performance evaluation
  - B. To understand by variances arise
  - C. To encourage employees to focus on meeting standards
  - D. To administer appropriate disciplinary action to employees that do not meet standards
27. A primary purpose of using a standard cost system is
- a. to make things easier for managers in the production facility.
  - b. to provide a distinct measure of cost control.
  - c. to minimize the cost per unit of production.
  - d. b and c are correct.
28. The standard cost card contains quantities and costs for
- a. direct material only.
  - b. direct labor only.
  - c. direct material and direct labor only.
  - d. direct material, direct labor, and overhead.
29. Which of the following statements regarding standard cost systems is **true**?
- a. Favorable variances are not necessarily good variances.
  - b. Managers will investigate all variances from standard.
  - c. The production supervisor is generally responsible for material price variances.
  - d. Standard costs cannot be used for planning purposes since costs normally change in the future.

30. In a standard cost system, Work in Process Inventory is ordinarily debited with
- actual costs of material and labor and a predetermined overhead cost for overhead.
  - standard costs based on the level of input activity (such as direct labor hours worked).
  - standard costs based on production output.
  - actual costs of material, labor, and overhead.
31. A standard cost system may be used in
- job order costing, but not process costing.
  - process costing, but not job order costing.
  - either job order costing or process costing.
  - neither job order costing nor process costing.
32. Standard costs may be used for
- product costing.
  - planning.
  - controlling.
  - all of the above.
33. A purpose of standard costing is to
- replace budgets and budgeting.
  - simplify costing procedures.
  - eliminate the need for actual costing for external reporting purposes.
  - eliminate the need to account for year-end underapplied or overapplied manufacturing overhead.
34. Standard costs
- are estimates of costs attainable only under the most ideal conditions.
  - are difficult to use with a process costing system.
  - can, if properly used, help motivate employees.
  - require that significant unfavorable variances be investigated, but do not require that significant favorable variances be investigated.
35. A bill of material does **not** include
- quantity of component inputs.
  - price of component inputs.
  - quality of component inputs.
  - type of product output.
36. An operations flow document
- tracks the cost and quantity of material through an operation.
  - tracks the network of control points from receipt of a customer's order through

the delivery of the finished product.

- c. specifies tasks to make a unit and the times allowed for each task.
- d. charts the shortest path by which to arrange machines for completing products.

37. A total variance is best defined as the difference between total
- a. actual cost and total cost applied for the standard output of the period.
  - b. standard cost and total cost applied to production.
  - c. actual cost and total standard cost of the actual input of the period.
  - d. actual cost and total cost applied for the actual output of the period.

38. The term standard hours allowed measures
- a. budgeted output at actual hours.
  - b. budgeted output at standard hours.
  - c. actual output at standard hours.
  - d. actual output at actual hours.

39. A large labor efficiency variance is prorated to which of the following at year-end?

		WIP	FG
	<u>Cost of Goods Sold</u>	<u>Inventory</u>	<u>Inventory</u>

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

40. Which of the following factors should **not** be considered when deciding whether to investigate a variance?
- a. magnitude of the variance
  - b. trend of the variances over time
  - c. likelihood that an investigation will reduce or eliminate future occurrences of the variance
  - d. whether the variance is favorable or unfavorable
41. At the end of a period, a significant material quantity variance should be
- a. closed to Cost of Goods Sold.
  - b. allocated among Raw Material, Work in Process, Finished Goods, and Cost of Goods Sold.
  - c. allocated among Work in Process, Finished Goods, and Cost of Goods Sold.
  - d. carried forward as a balance sheet account to the next period.
42. When computing variances from standard costs, the difference between actual and standard price multiplied by actual quantity used yields a

- a. combined price-quantity variance.
  - b. price variance.
  - c. quantity variance.
  - d. mix variance.
43. A company wishing to isolate variances at the point closest to the point of responsibility will determine its material price variance when
- a. material is purchased.
  - b. material is issued to production.
  - c. material is used in production.
  - d. production is completed.
44. The material price variance (computed at point of purchase) is
- a. the difference between the actual cost of material purchased and the standard cost of material purchased.
  - b. the difference between the actual cost of material purchased and the standard cost of material used.
  - c. primarily the responsibility of the production manager.
  - d. both a and c.
45. The sum of the material price variance (calculated at point of purchase) and material quantity variance equals
- a. the total cost variance.
  - b. the material mix variance.
  - c. the material yield variance.
  - d. no meaningful number.
46. A company would most likely have an unfavorable labor rate variance and a favorable labor efficiency variance if
- a. the mix of workers used in the production process was more experienced than the normal mix.
  - b. the mix of workers used in the production process was less experienced than the normal mix.
  - c. workers from another part of the plant were used due to an extra heavy production schedule.
  - d. the purchasing agent acquired very high quality material that resulted in less spoilage.
47. If actual direct labor hours (DLHs) are less than standard direct labor hours allowed and overhead is applied on a DLH basis, a(n)
- a. favorable variable overhead spending variance exists.
  - b. favorable variable overhead efficiency variance exists.
  - c. favorable volume variance exists.
  - d. unfavorable volume variance exists.



48. If all sub-variances are calculated for labor, which of the following **cannot** be determined?
- labor rate variance
  - actual hours of labor used
  - reason for the labor variances
  - efficiency of the labor force
49. The total labor variance can be subdivided into all of the following **except**
- rate variance.
  - yield variance.
  - learning curve variance.
  - mix variance.
50. The standard predominantly used in Western cultures for motivational purposes is a(n) \_\_\_\_\_ standard.
- expected annual
  - ideal
  - practical
  - theoretical
51. Which of the following standards can commonly be reached or slightly exceeded by workers in a motivated work environment?
- |    | <u>Ideal</u> | <u>Practical</u> | <u>Expected annual</u> |
|----|--------------|------------------|------------------------|
| a. | no           | no               | no                     |
| b. | no           | yes              | yes                    |
| c. | yes          | yes              | no                     |
| d. | no           | yes              | no                     |
52. Management would generally expect unfavorable variances if standards were based on which of the following capacity measures?
- |    | <u>Ideal</u> | <u>Practical</u> | <u>Expected annual</u> |
|----|--------------|------------------|------------------------|
| a. | yes          | no               | no                     |
| b. | no           | no               | yes                    |
| c. | no           | yes              | yes                    |
| d. | no           | no               | no                     |
53. Which of the following capacity levels has traditionally been used to compute the fixed overhead application rate?

- a. expected annual
- b. normal
- c. theoretical
- d. prior year

54. A company has a favorable variable overhead spending variance, an unfavorable variable overhead efficiency variance, and underapplied variable overhead at the end of a period. The journal entry to record these variances and close the variable overhead control account will show which of the following?

<u>VOH spending variance</u>	<u>VOH efficiency variance</u>	<u>VMOH</u>
a. debit	credit	credit
b. credit	debit	credit
c. debit	credit	debit
d. credit	debit	debit

55. Gallagher Corporation. incurred 2,300 direct labor hours to produce 600 units of product. Each unit should take 4 direct labor hours. Gallagher Corporation applies variable overhead to production on a direct labor hour basis. The variable overhead efficiency variance

- a. will be unfavorable.
- b. will be favorable.
- c. will depend upon the capacity measure selected to assign overhead to production.
- d. is impossible to determine without additional information.

56. A variable overhead spending variance is caused by

- a. using more or fewer actual hours than the standard hours allowed for the production achieved.
- b. paying a higher/lower average actual overhead price per unit of the activity base than the standard price allowed per unit of the activity base.
- c. larger/smaller waste and shrinkage associated with the resources involved than expected.
- d. both b and c are causes.

57. Which of the following are considered controllable variances?

<u>VOH spending</u>	<u>Total overhead budget</u>	<u>Volume</u>
a. yes	yes	yes
b. no	no	yes

- c. no                yes                no
- d. yes              yes              no

58. A company may set predetermined overhead rates based on normal, expected annual, or theoretical capacity. At the end of a period, the fixed overhead spending variance would
- a. be the same regardless of the capacity level selected.
  - b. be the largest if theoretical capacity had been selected.
  - c. be the smallest if theoretical capacity had been selected.
  - d. not occur if actual capacity were the same as the capacity level selected.
59. The variance least significant for purposes of controlling costs is the
- a. material quantity variance.
  - b. variable overhead efficiency variance.
  - c. fixed overhead spending variance.
  - d. fixed overhead volume variance.
60. Fixed overhead costs are
- a. best controlled on a unit-by-unit basis of products produced.
  - b. mostly incurred to provide the capacity to produce and are best controlled on a total basis at the time they are originally negotiated.
  - c. constant on a per-unit basis at all different activity levels within the relevant range.
  - d. best controlled as to spending during the production process.
61. The variance **most** useful in evaluating plant utilization is the
- a. variable overhead spending variance.
  - b. fixed overhead spending variance.
  - c. variable overhead efficiency variance.
  - d. fixed overhead volume variance.
62. A favorable fixed overhead volume variance occurs if
- a. there is a favorable labor efficiency variance.
  - b. there is a favorable labor rate variance.
  - c. production is less than planned.
  - d. production is greater than planned.
63. The fixed overhead application rate is a function of a predetermined activity level. If standard hours allowed for good output equal the predetermined activity level for a given period, the volume variance will be
- a. zero.
  - b. favorable.
  - c. unfavorable.
  - d. either favorable or unfavorable, depending on the budgeted overhead.

64. Actual fixed overhead minus budgeted fixed overhead equals the
- fixed overhead volume variance.
  - fixed overhead spending variance.
  - noncontrollable variance.
  - controllable variance.
65. Total actual overhead minus total budgeted overhead at the actual input production level equals the
- variable overhead spending variance.
  - total overhead efficiency variance.
  - total overhead spending variance.
  - total overhead volume variance.
66. A favorable fixed overhead spending variance indicates that
- budgeted fixed overhead is less than actual fixed overhead.
  - budgeted fixed overhead is greater than applied fixed overhead.
  - applied fixed overhead is greater than budgeted fixed overhead.
  - actual fixed overhead is less than budgeted fixed overhead.
67. An unfavorable fixed overhead volume variance is most often caused by
- actual fixed overhead incurred exceeding budgeted fixed overhead.
  - an over-application of fixed overhead to production.
  - an increase in the level of the finished inventory.
  - normal capacity exceeding actual production levels.
68. In a standard cost system, when production is greater than the estimated unit or denominator level of activity, there will be a(n)
- unfavorable capacity variance.
  - favorable material and labor usage variance.
  - favorable volume variance.
  - unfavorable manufacturing overhead variance.
69. In analyzing manufacturing overhead variances, the volume variance is the difference between the
- amount shown in the flexible budget and the amount shown in the debit side of the overhead control account.
  - predetermined overhead application rate and the flexible budget application rate times actual hours worked.
  - budget allowance based on standard hours allowed for actual production for the period and the amount budgeted to be applied during the period.
  - actual amount spent for overhead items during the period and the overhead

amount applied to production during the period.

70. Variance analysis for overhead normally focuses on
- efficiency variances for machinery and indirect production costs.
  - volume variances for fixed overhead costs.
  - the controllable variance as a lump-sum amount.
  - the difference between budgeted and applied variable overhead.
71. The efficiency variance computed on a three-variance approach is
- equal to the variable overhead efficiency variance computed on the four-variance approach.
  - equal to the variable overhead spending variance plus the variable overhead efficiency variance computed on the four-variance approach.
  - computed as the difference between applied variable overhead and actual variable overhead.
  - computed as actual variable overhead minus the flexible budget for variable overhead based on actual hours worked.
72. The use of separate variable and fixed overhead rates is better than a combined rate because such a system
- is less expensive to operate and maintain.
  - does not result in underapplied or overapplied overhead.
  - is more effective in assigning overhead costs to products.
  - is easier to develop.
73. Under the two-variance approach, the volume variance is computed by subtracting \_\_\_\_\_ based on standard input allowed for the production achieved from budgeted overhead.
- applied overhead
  - actual overhead
  - budgeted fixed overhead plus actual variable overhead
  - budgeted variable overhead
74. The overhead variance calculated as total budgeted overhead at the actual input production level minus total budgeted overhead at the standard hours allowed for actual output is the
- efficiency variance.
  - spending variance.
  - volume variance.
  - budget variance.
75. Analyzing overhead variances will **not** help in
- controlling costs.
  - evaluating performance.
  - determining why variances occurred.
  - planning costs for future production cycles.

76. In a just-in-time inventory system,
- practical standards become ideal standards.
  - ideal standards become expected standards.
  - variances will not occur because of the zero-defects basis of JIT.
  - standard costing cannot be used.
77. A company using very tight (high) standards in a standard cost system should expect that
- no incentive bonus will be paid.
  - most variances will be unfavorable.
  - employees will be strongly motivated to attain the standards.
  - costs will be controlled better than if lower standards were used.

**B. True or False**

- Specifications for materials are compiled on a bill of materials.
- Specifications for materials are compiled on a purchase requisition.
- An operations flow document shows all processes necessary to manufacture one unit of a product.
- A standard cost card is prepared after manufacturing standards have been developed for direct materials, direct labor, and factory overhead.
- A standard cost card is prepared before developing manufacturing standards for direct materials, direct labor, and factory overhead.
- The total variance can provide useful information about the source of cost differences.
- The total variance does not provide useful information about the source of cost differences.
- The price variance reflects the difference between the quantity of inputs used and the standard quantity allowed for the output of a period.
- The price variance reflects the difference between the price paid for inputs and the standard price for those inputs.
- The usage variance reflects the difference between the price paid for inputs and the standard price for those inputs.
- The usage variance reflects the difference between the quantity of inputs used and the standard quantity allowed for the output of a period.
- The point of purchase model calculates the materials price variance using the quantity of materials purchased.

13. The point of purchase model calculates the materials price variance using the quantity of materials used in production.
14. The difference between the actual wages paid to employees and the standard wages for all hours worked is the labor rate variance.
15. The difference between the actual wages paid to employees and the standard wages for all hours worked is the labor efficiency variance.
16. The difference between the standard hours worked for a specific level of production and the actual hours worked is the labor efficiency variance.
17. The difference between the standard hours worked for a specific level of production and the actual hours worked is the labor rate variance.
18. A flexible budget is an effective tool for budgeting factory overhead.
19. The difference between actual variable overhead and budgeted variable overhead based upon actual hours is referred to as the variable overhead spending variance.
20. The difference between actual variable overhead and budgeted variable overhead based upon actual hours is referred to as the variable overhead efficiency variance.
21. The difference between budgeted variable overhead for actual hours and standard overhead is the variable overhead efficiency variance.
22. The difference between budgeted variable overhead for actual hours and standard overhead is the variable overhead spending variance.
23. The difference between actual and budgeted fixed factory overhead is referred to as a fixed overhead spending variance.
24. The difference between actual and budgeted fixed factory overhead is referred to as a fixed overhead volume variance.
25. The difference between budgeted and applied fixed factory overhead is referred to as a fixed overhead volume variance.
26. A fixed overhead volume variance is a controllable variance.
27. A fixed overhead volume variance is a noncontrollable variance.
28. A one-variance approach calculates only a total overhead variance
29. A budget variance is a controllable variance.

30. An overhead efficiency variance is related entirely to variable overhead
31. Managers have no ability to control the budget variance,
32. Unfavorable variances are represented by debit balances in the overhead account.
33. Unfavorable variances are represented by credit balances in the overhead account.
34. Favorable variances are represented by credit balances in the overhead account.
35. Favorable variances are represented by debit balances in the overhead account.
36. Favorable variances are always desirable for production.
37. Expected standards are a valuable tool for motivation and control.
38. Practical standards are the most effective standards for controlling and motivating workers.
39. Ideal standards are an effective means of controlling variances and motivating workers.
40. Ideal standards do not allow for normal operating delays or human limitations.
41. Expected standards generally yield unfavorable variances
42. Expected standards generally yield favorable variances
43. Ideal standards generally yield favorable variances
44. Ideal standards generally yield unfavorable variances
45. Total quality management (TQM) and just-in-time (JIT) production systems are based on the premise of ideal production standards.
  
46. In a totally automated organization, using theoretical capacity will generally provide the lowest fixed overhead application rate.
  
47. In a totally automated organization, using theoretical capacity will generally provide the highest fixed overhead application rate.
  
48. A conversion variance combines labor and overhead variances.
49. The effect of substituting a non-standard mix of materials during the production process is referred to as a material mix variance.
  
50. The effect of substituting a non-standard mix of materials during the production process is referred to as a material yield variance.
  
51. When multiple labor categories are used, the financial effect of using a different mix of workers in a production process is referred to as a labor mix variance.
  
52. When multiple labor categories are used, the financial effect of using a different mix of workers in a production process is referred to as a labor yield variance.
  
53. When multiple labor categories are used, the monetary impact of using a higher or lower number of hours than a standard allows is referred to as a labor mix variance.
  
54. When multiple labor categories are used, the monetary impact of using a higher or lower number of hours than a standard allows is referred to as a labor yield variance.

**Part II. PROBLEMS**



**PROBLEM 1:**

Sam Company produces a product with the following standard costs:

Materials, 2 pieces @ P 5 per piece	P 10
Labor, 4 hours @ P 8 per hour	32
Variable overhead, 4 hours @ P 6 per hour	24
Fixed overhead, 4 hours @ P 4 per hour *	16
Total standard manufacturing cost per unit	<u><b>P 82</b></u>

\* based on a capacity level of 5,000 units

1. If a flexible budget for (a) 4,500 units (b) 5,000 units and (c) 5,500 units is prepared for a certain month, the budgeted costs are?
2. What is the flexible budget formula that the company may use to compute total budgeted cost for any value of X within the relevant range?
3. Assume that during the month, the company actually produced 4,800 units and incurred actual total manufacturing costs of P 400,000, how much is the flexible budget for the actual production?
4. How much is the flexible budget variance for the month? (indicate whether the difference favorable or unfavorable)
5. How much is the total standard cost that should have been incurred for the actual production of 4,800 units?
6. How much is the total standard cost variance? (indicate whether the difference is favorable or unfavorable)

**PROBLEM 2:**

During July, Pringles company's direct materials costs for the production of Product A4 were as follows:

Standard unit price	P 12.50
Standard quantity allowed for actual production	6,300 units
Actual unit purchase price	P 13
Quantity purchased and used for actual production	6,900 units

7. The total materials cost variance is...
8. The materials efficiency variance is...
9. The materials spending variance is...

**PROBLEM 3:**

Aby Company produced 3,200 units of product. Each unit requires 2 standard hours. The standard labor rate is P 15 per hour. Actual direct labor for the period was P 79,200 (6,600 hours x P 12).

10. What is the direct labor time variance?

11. What is the direct labor rate variance?

**PROBLEM 4:**

Josie Company uses a standard cost system. The following information pertains to direct labor for Product BB-122 for the month of March:

Standard rate per hour	P 12.00
Standard hours allowed for actual production	3,000 hours
Actual rate per hour	P 12.60
Labor efficiency variance – unfavorable	P 2,400

12. What were the actual hours worked?

**PROBLEM 5:**

For the month of June, Julia Company's records disclosed the following data relating to direct labor:

Actual cost	P 25,000
Spending variance	2,500 favorable
Efficiency variance	3,750 unfavorable
The actual direct labor hours used during June was 5,000 hours.	

13. What is the standard cost?

14. How much was the company's standard direct labor rate per hour?

**PROBLEM 6:**

The accountant of Mike Company prepared the following cost analysis report on direct labor costs for the jobs completed the previous months:

<i>Job #:</i>	<i>Actual hours @ actual rates</i>	<i>Actual hours @ standard rates</i>	<i>Standard hours @ standard rates</i>
500	P 2,270	P 2,590	P 2,170
501	10,740	10,970	10,500
502	4,730	4,900	4,620
503	13,850	13,600	13,480
	<u>P 31,590</u>	<u>P 32,060</u>	<u>P 30,770</u>

15. What is the total flexible budget direct labor variance for the jobs completed?

16. What is the labor rate variance?

17. What is the labor time variance?

**PROBLEM 7:**

The following information pertains to Jethro Company's production of one unit of Product CA-0138:

	<b>Quantity:</b>	<b>Price:</b>	<b>Cost per unit:</b>
Materials – standard	7.5 kgs.	P 0.30/kg.	P 2.25/unit
Labor – standard	0.6 hr.	P 10.00/hr.	P 6.00/unit

During the period, the company produced 15,000 units of Product CA-0138. It purchased 140,000 kgs. of materials at P 0.25 per kilo. It incurred direct labor cost of P 90,780 at P 10.20 per labor hour used. At the end of the period, the company's inventory of materials increased by 25,000 kgs.

The company recognizes the materials price variance when materials are purchased.

18. How much was the company's material price variance?
19. What was the company's materials efficiency variance?
20. The company's labor efficiency variance during the period was...
21. The direct labor spending variance for the period was...
22. The total prime cost variance is...

**PROBLEM 8:**

Albert Corporation's standard cost system contains the following overhead costs, computed based on a monthly normal volume of 25,000 units or 50,000 direct labor hours:

Variable factory overhead	P 12 per unit
Fixed factory overhead	8 per unit
Total	<u><b>P 20</b></u>

The following information pertains to the month of April:

Actual FOH costs incurred:

Variable	P 316,680
Fixed	225,000
Actual production	26,000 units
Actual direct labor hours worked	54,600 hours

**COMPUTE:**

23. The total FOH cost variance.
24. The variable overhead variance.
25. The variable overhead spending variance.
26. The variable overhead efficiency variance.
27. The fixed overhead variance.
28. The fixed overhead budget variance.
29. The fixed overhead capacity variance.

30. The controllable variance, using the two-way analysis method.  
 31. The spending variance, using the three-way analysis method of analyzing FOH variance.  
 32. The efficiency variance under the three-way analysis method of analyzing FOH variance.

**PROBLEM 9:**

Following are data about Jamison Corporation's fixed and variable overhead for the month of May:

	<b>Actual:</b>	<b>Flexible budget:</b>	<b>Applied:</b>
Fixed overhead	P 120,000	?	P 125,000
Variable overhead	80,000	P 90,000	?
Variable overhead rate variance	P 2,000 U		
Volume variance	P 5,000 F		
Standard variable OH rate per hour	P 20		

33. How efficient or inefficient is Jamison Corp. in terms of using direct labor hours as an activity base?  
 34. What was the total budgeted fixed factory overhead?  
 35. How much is the fixed FOH spending variance?

**PROBLEM 10:**

Michael, Katrina, and Company, CPAs, prepares income tax returns (ITR) for individual taxpayers. The company uses the weighted-average method and actual costs for financial reporting purposes. However, for internal reporting, Michael uses the FIFO method and a standard cost system. The standards, based on equivalent performance, have been established as follows:

	<b>Standard time per ITR</b>	<b>Rate per hour</b>	<b>Cost per ITR</b>
Labor cost	5 hours	P 100	P 500
Overhead	5 hours	50	250

For March, budgeted overhead is P 245,000.

Additional information for March performance:

**In-process data:**

ITRs in process, March 1 (25% complete)	100
ITRs started in March	800
ITRs in process, March 31 (20% incomplete)	200

**Actual costs:**

ITRs in process, March 1: Labor	P 30,000
Overhead	12,500
Labor, month of March, 4,000 hours	344,960
Overhead, month of March	224,860

**COMPUTE:**

36. The equivalent units of performance for labor and overhead using the weighted-average method.
37. The actual costs of Labor and overhead, respectively, per equivalent unit.
38. The actual cost of ITRs in process at March 31.
39. The standard cost per ITR.
40. The equivalent units for current production under the FIFO method.
41. Labor rate variance for March.
42. Labor time variance for March.
43. Total FOH cost variance.
44. Total overhead budget variance.
45. Volume variance in units.

**PROBLEM 11:**

Boss Lemuel, Inc. uses a standard cost system in its Powder Soap Division. The standard cost of manufacturing one sack of powder soap is as follows:

Materials	48 kilos @ P 75 per kilo	P 3,600
Labor	4 hours @ P 40 per hour	160
Factory overhead	P 50 per direct labor hour	200
Total standard cost per sack		<u><b>P 3,960</b></u>

The budgeted fixed factory overhead is P 14,400 for a normal monthly production of 180 sacks of powder soap.

During the month, Boss Lemuel produced 160 sacks of powder soap. The actual costs were:

Materials purchased and used – 7,700 kilos @	
P 73 per kilo	P 562,100
Labor – 650 hours @ P 38 per hour	24,700
Factory overhead: Fixed	14,400
Variable	20,800
Total actual cost	<u><b>P 622,000</b></u>

**COMPUTE:**

46. Materials cost variances
  - (a) Spending variance.
  - (b) Efficiency variance.
47. Labor cost variances

(a) Spending variance.

(b) Efficiency variance.

**48. Factory overhead cost variances**

(a) Controllable variance.

(b) Volume variance.

**PROBLEM 12:**

Standard direct labor hours	30,000
Actual direct labor hours	29,000
Direct labor efficiency variance	P 4,000 favorable
Direct labor rate variance	P 5,800 favorable
Total payroll	P 110,200

**49. What was the standard direct labor rate?**

**50. What was the actual direct labor rate?**

**PROBLEM 13:**

Marisse Products applies fixed overhead at a rate of P 3.00 per direct labor hour. Each unit produced is expected to take 2 direct labor hours. Marisse expected production in the current year to be 10,000 units but 9,000 units were actually produced. Actual direct labor hours were 19,000 and actual fixed overhead costs were P 62,000.

**51. Fixed overhead spending variance is?**

**52. Fixed overhead volume variance is?**

**PROBLEM 14:**

The Michigan Company has made the following information available for its production facility for the month of June. Fixed overhead was estimated at 19,000 machine hours for the production cycle. Actual machine hours for the period were 18,900, which generated 3,900 units.

Material purchased (80,000 pieces)	\$314,000	
Material quantity variance	\$6,400	U
Machine hours used (18,900 hours)		
VOH spending variance	\$50	U
Actual fixed overhead	\$60,000	
Actual labor cost	\$40,120	
Actual labor hours	5,900	

Michigan's standard costs are as follows:

Direct material	20 pieces @ \$4 per piece
Direct labor	1.5 hours @ \$6 per hour

Variable overhead (applied on a machine hour basis)	4.8 hours @ \$2.50 per hour
Fixed overhead (applied on a machine hour basis)	4.8 hours @ \$3 per hour

**Determine the following items:**

- 53. material purchase price variance
- 54. standard quantity allowed for material
- 55. total standard cost of material allowed
- 56. actual quantity of material used
- 57. labor rate variance
- 58. standard hours allowed for labor
- 59. total standard cost of labor allowed
- 60. labor efficiency variance
- 61. actual variable overhead incurred
- 62. standard machine hours allowed
- 63. variable overhead efficiency variance
- 64. budgeted fixed overhead
- 65. applied fixed overhead
- 66. fixed overhead spending variance
- 67. volume variance \$ 840 unfavorable
- 68. total overhead variance \$ 4,340 unfavorable

**SHORT PROBLEMS:**

- 69. Jason Corporation's master budget calls for the production of 5,000 units of product monthly. The annual master budget includes indirect labor of P 144,000 annually. Jason considers indirect labor to be a variable cost. During the month of April, 4,500 units of product were produced, and indirect labor costs of P 10,100 were incurred. A performance report utilizing flexible budgeting would report a budget variance for indirect labor of?
- 70. Each finished unit of Product ER-0012F contains 60 pounds of raw material. The manufacturing process must provide for a 20% waste allowance. The raw material can be purchased for P 2.50 a pound under terms of 2/10, n/30. The company takes all cash discounts. The standard direct material cost for each unit of ER-0012F is?
- 71. Under a standard cost system, the materials quantity variance was recorded at P 1,970 unfavorable, the materials price variance was recorded at P 3,740 favorable, and the goods in process was debited for P 51,690. 96,000 units were completed. What was the per unit price of the actual materials used?
- 72. Vladimer Company has a standard price of P 5.50 per pound for materials. July's results showed an unfavorable material price variance of P 44 and a favorable quantity variance

of P 209. If 1,066 pounds were used in production, what was the standard quantity allowed for materials?

73. Trisha Company uses a standard costing system in the manufacture of its single product. The 35,000 units of raw material in inventory were purchased for P 105,000 and two units of raw materials are required to produce one unit of final product. In November, the company produced 12,000 units of product. The standard cost allowed for materials was P 60,000, and there was an unfavorable quantity variance of P 2,500. The materials price variance for the units used in November was?
74. Jericho Company has a standard of 15 parts of component FR-2231 costing P 1.50 each. Jericho purchased 14,910 units of component FR-2231 for P 22,145. Jericho generated a P 220 favorable price variance and a P 3,735 favorable quantity variance. If there were no change in the component inventory, how many units of finished product were produced?

-end-



Suggested Key		
I. Theories		
A. Multiple Choice		
1. B	27. B	53. A
2. D	28. D	54. B
3. A	29. A	55. B
4. C	30. C	56. D
5. B	31. C	57. D
6. D	32. D	58. A
7. D	33. B	59. D
8. A	34. C	60. B
9. D	35. B	61. D
10. D	36. C	62. D
11. B	37. D	63. A
12. A	38. C	64. B
13. C	39. D	65. C
14. D	40. D	66. D
15. C	41. C	67. D
16. D	42. B	68. C
17. D	43. A	69. C
18. C	44. A	70. A
19. D	45. D	71. A
20. C	46. A	72. C
21. C	47. B	73. A
22. C	48. C	74. A
23. B	49. C	75. C
24. A	50. C	76. B
25. B	51. B	77. B
26. B	52. A	
True or False		
1. T	21. T	41. F
2. F	22. F	42. T
3. T	23. T	43. F
4. T	24. F	44. T
5. F	25. T	45. T
6. F	26. F	46. T
7. T	27. T	47. F
8. F	28. T	48. T
9. T	29. T	49. T
10. F	30. T	50. F
11. T	31. F	51. T
12. T	32. T	52. F
13. F	33. F	53. F
14. T	34. T	54. T
15. F	35. F	

16. T	36. F	
17. F	37. F	
18. T	38. T	
19. T	39. F	
20. F	40. T	
<b>II. PROBLEMS</b>		
1. (a) P 377,000 (b) 410,000 (c) P 443,000	26. P 15,600 unfavorable	51. P 2,000 unfavorable
2. 80,000 + 66x	27. P 17,000 unfavorable	52. P 6,000 unfavorable
3. P 396,800	28. P 25,000 unfavorable	53. \$ 6,000 favorable
4. P 3,200 unfavorable	29. P 8,000 favorable	54. 78,000
5. P 393,600	30. P 29,680 unfavorable	55. \$312,000
6. P 6,400 unfavorable	31. P 14,080 unfavorable	56. 79,600
7. P 10,950 unfavorable	32. P 15,600 unfavorable	57. \$ 4,720 unfavorable
8. P 7,500 unfavorable	33. 600 hours efficient	58. 5,850
9. P 3,450 unfavorable	34. P 120,000	59. \$ 35,100
10. P 3,000 unfavorable	35. 0	60. <u>\$ 300 unfavorable</u>
11. P 19,800 favorable	36. 860 units	61. <u>\$ 47,300</u>
12. 3,200 hours	37. P 436; P 276	62. 18,720
13. P 23,750	38. P 113,920	63. <u>\$ 450 unfavorable</u>
14. P 5.50	39. P 750	64. \$ 57,000
15. P 820 unfavorable	40. 835 units	65. \$ 56,160
16. P 470 favorable	41. P 55,040 favorable	66. <u>\$ 3,000 unfavorable</u>
17. P 1,290 unfavorable	42. P 17,500 favorable	67. <u>\$ 840 unfavorable</u>
18. P 7,000 favorable	43. P 16,110 unfavorable	68. <u>\$ 4,340 unfavorable</u>
19. P 750 unfavorable	44. P 20,140 favorable	69. P 700 favorable
20. P 1,000 favorable	45. 145 units under-absorbed	70. P 183.75
21. P 1,780 unfavorable	46. (a) P 15,400 favorable (b) P 1,500 unfavorable	71. P 0.52
22. P 4,220 favorable	47. (a) P 1,300 favorable (b) P 400 unfavorable	72. 1,104 units
23. P 21,680 unfavorable	48. (a) P 1,600 unfavorable (b) P 1,600 unfavorable	73. P 12,500 unfavorable
24. P 4,680 unfavorable	49. P 4.00	74. 1,160 units
25. P 10,920 favorable	50. P 3.80	