

Cost Accounting, 14e (Horngren/Datar/Rajan)

Chapter 8 Flexible Budgets, Overhead Cost Variances, and Management Control

Objective 8.1

1) Overhead costs have been increasing due to all of the following EXCEPT:

- A) increased automation
- B) more complexity in distribution processes
- C) tracing more costs as direct costs with the help of technology
- D) product proliferation

Answer: C

Diff: 3

Terms: total-overhead variance

Objective: 1

AACSB: Reflective thinking

2) Effective planning of variable overhead costs means that a company performs those variable overhead costs that primarily add value for:

- A) the current shareholders
- B) the customer using the products or services
- C) plant employees
- D) major suppliers of component parts

Answer: B

Diff: 2

Terms: total-overhead variance

Objective: 1

AACSB: Reflective thinking

3) Variable overhead costs include:

- A) plant-leasing costs
- B) the plant manager's salary
- C) depreciation on plant equipment
- D) machine maintenance

Answer: D

Diff: 1

Terms: total-overhead variance

Objective: 1

AACSB: Reflective thinking

4) Fixed overhead costs include:

- A) the cost of sales commissions
- B) property taxes paid on plant facilities
- C) energy costs
- D) indirect materials

Answer: B

Diff: 1

Terms: total-overhead variance

Objective: 1

AACSB: Reflective thinking

5) Effective planning of fixed overhead costs includes all of the following EXCEPT:

- A) planning day-to-day operational decisions
- B) eliminating nonvalue-added costs
- C) planning to be efficient
- D) choosing the appropriate level of capacity

Answer: A

Diff: 3

Terms: total-overhead variance

Objective: 1

AACSB: Reflective thinking

6) Effective planning of variable overhead includes all of the following EXCEPT:

- A) choosing the appropriate level of capacity
- B) eliminating nonvalue-adding costs
- C) redesigning products to use fewer resources
- D) redesigning the plant layout for more efficient processing

Answer: A

Diff: 2

Terms: total-overhead variance

Objective: 1

AACSB: Reflective thinking

7) Choosing the appropriate level of capacity:

- A) is a key strategic decision
- B) may lead to loss of sales if overestimated
- C) may lead to idle capacity if underestimated
- D) All of these answers are correct.

Answer: A

Diff: 2

Terms: production-volume variance

Objective: 1

AACSB: Ethical reasoning

8) The major challenge when planning fixed overhead is:

- A) calculating total costs
- B) calculating the cost-allocation rate
- C) choosing the appropriate level of capacity
- D) choosing the appropriate planning period

Answer: C

Diff: 3

Terms: production-volume variance

Objective: 1

AACSB: Reflective thinking

9) Overhead costs are a major part of costs for most companies more than 50% of all costs for some companies.

Answer: TRUE

Diff: 1

Terms: total-overhead variance

Objective: 1

AACSB: Reflective thinking

10) At the start of the budget period, management will have made most decisions regarding the level of fixed overhead costs to be incurred.

Answer: TRUE

Diff: 1

Terms: total-overhead variance

Objective: 1

AACSB: Ethical reasoning

11) One way to manage both variable and fixed overhead costs is to eliminate value-adding activities.

Answer: FALSE

Explanation: One way to manage both variable and fixed overhead costs is to eliminate non-value-adding activities.

Diff: 1

Terms: total-overhead variance

Objective: 1

AACSB: Reflective thinking

12) The planning of fixed overhead costs does NOT differ from the planning of variable overhead costs.

Answer: FALSE

Explanation: The planning of fixed overhead costs differs from the planning of variable overhead costs in one important respect, timing. The level of fixed costs to be incurred will have been mostly decided upon at the start of the budget period, but the day-to-day ongoing operations decisions will be the main determinant in the level of variable overhead costs to be incurred in the period.

Diff: 1

Terms: total-overhead variance

Objective: 1

AACSB: Reflective thinking

13) Jael Equipment uses a flexible budget for its indirect manufacturing costs. For 20X5, the company anticipated that it would produce 18,000 units with 3,500 machine-hours and 7,200 employee days. The costs and cost drivers were to be as follows:

	<u>Fixed</u>	<u>Variable</u>	<u>Cost driver</u>
Product handling	\$30,000	\$0.40	per unit
Inspection	8,000	8.00	per 100 unit batch
Utilities	400	4.00	per 100 unit batch
Maintenance	1,000	0.20	per machine-hour
Supplies		5.00	per employee day

During the year, the company processed 20,000 units, worked 7,500 employee days, and had 4,000 machine-hours. The actual costs for 20X5 were:

	<u>Actual costs</u>
Product handling	\$36,000
Inspection	9,000
Utilities	1,600
Maintenance	1,200
Supplies	37,500

Required:

- Prepare the static budget using the overhead items above and then compute the static-budget variances.
- Prepare the flexible budget using the overhead items above and then compute the flexible-budget variances.

Answer:

- Jael Equipment
Overhead Static Budget with Variances
20X5

	<u>Actual</u>	<u>Static Budget</u>	<u>Variances</u>
Product handling	\$36,000	\$37,200	\$1,200 F
Inspection	9,000	9,440	440 F
Utilities	1,600	1,120	480 U
Maintenance	1,200	1,700	500 F
Supplies	<u>37,500</u>	<u>36,000</u>	<u>1,500</u> U
Total	<u>\$85,300</u>	<u>\$85,460</u>	<u>\$160</u> F

b. Jael Equipment
Overhead Flexible Budget with Variances
20X5

	<u>Actual</u>	<u>Flexible Budget</u>	<u>Variances</u>	
Product handling	\$36,000	\$38,000	\$2,000	F
Inspection	9,000	9,600	600	F
Utilities	1,600	1,200	400	U
Maintenance	1,200	1,800	600	F
Supplies	<u>37,500</u>	<u>37,500</u>	<u>0</u>	
Total	<u>\$85,300</u>	<u>\$88,100</u>	<u>\$2,800</u>	F

Diff: 2

Terms: fxd ovrd flex-bud/spending, prod-vol, var ovrd spending, var ovrd efficiency var

Objective: 1

AACSB: Analytical skills

Objective 8.2

1) In a standard costing system, a cost-allocation base would most likely be:

- A) actual machine-hours
- B) normal machine-hours
- C) standard machine-hours
- D) Any of these answers is correct.

Answer: C

Diff: 3

Terms: standard costing

Objective: 2

AACSB: Reflective thinking

2) For calculating the costs of products and services, a standard costing system:

- A) only requires a simple recording system
- B) uses standard costs to determine the cost of products
- C) does not have to keep track of actual costs
- D) All of these answers are correct.

Answer: D

Diff: 3

Terms: standard costing

Objective: 2

AACSB: Reflective thinking

- 3) Which of the following is NOT a step in developing budgeted variable overhead rates?
- A) identifying the variable overhead costs associated with each cost-allocation base
 - B) estimating the budgeted denominator level based on expected utilization of available capacity
 - C) selecting the cost-allocation bases to use
 - D) choosing the period to be used for the budget

Answer: B

Diff: 2

Terms: variable overhead rate

Objective: 2

AACSB: Analytical skills

- 4) Which of the following is NOT a step in developing budgeted fixed overhead rates?
- A) Choose the period to use for the budget.
 - B) Select the cost-allocation bases to use in allocating fixed overhead costs to output produced.
 - C) Identify the fixed overhead costs associated with each cost-allocation base.
 - D) All of the above are steps in developing budgeted fixed overhead rates.

Answer: D

Diff: 2

Terms: fixed overhead rate

Objective: 2

AACSB: Analytical skills

- 5) In flexible budgets, costs that remain the same regardless of the output levels within the relevant range are:

- A) allocated costs
- B) budgeted costs
- C) fixed costs
- D) variable costs

Answer: C

Diff: 1

Terms: total-overhead variance

Objective: 2

AACSB: Reflective thinking

Answer the following questions using the information below:

Willis Corporation manufactures industrial-sized gas furnaces and uses budgeted machine-hours to allocate variable manufacturing overhead. The following information pertains to the company's manufacturing overhead data:

Budgeted output units	30,000 units
Budgeted machine-hours	10,000 hours
Budgeted variable manufacturing overhead costs for 15,000 units	\$322,500
Actual output units produced	44,000 units
Actual machine-hours used	14,400 hours
Actual variable manufacturing overhead costs	\$484,000

6) What is the budgeted variable overhead cost rate per output unit?

- A) \$10.75
- B) \$11.00
- C) \$32.25
- D) \$48.40

Answer: A

Explanation: A) $\$322,500/30,000 = \10.75

Diff: 2

Terms: total-overhead variance

Objective: 2

AACSB: Analytical skills

Answer the following questions using the information below:

Christine Corporation manufactures baseball uniforms and uses budgeted machine-hours to allocate variable manufacturing overhead. The following information pertains to the company's manufacturing overhead data:

Budgeted output units	10,000 units
Budgeted machine-hours	15,000 hours
Budgeted variable manufacturing overhead costs for 20,000 units	\$180,000
Actual output units produced	9,000 units
Actual machine-hours used	14,000 hours
Actual variable manufacturing overhead costs	\$171,000

7) What is the budgeted variable overhead cost rate per output unit?

- A) \$12.00
- B) \$12.21
- C) \$18.00
- D) \$19.00

Answer: C

Explanation: C) $\$180,000/10,000 = \18.00

Diff: 2

Terms: total-overhead variance

Objective: 2

AACSB: Analytical skills

Answer the following questions using the information below:

Fearless Frank's Fertilizer Farm produces fertilizer and distributes the product by using his tanker trucks. Frank's uses budgeted fleet hours to allocate variable manufacturing overhead. The following information pertains to the company's manufacturing overhead data:

Budgeted output units	600 truckloads
Budgeted fleet hours	450 hours
Budgeted pounds of fertilizer	24,000,000 pounds
Budgeted variable manufacturing overhead costs for 600 loads	\$75,000

Actual output units produced and delivered	630 truckloads
Actual fleet hours	436 hours
Actual pounds of fertilizer produced and delivered	25,200,000 pounds
Actual variable manufacturing overhead costs	\$76,500

8) What is the budgeted variable overhead cost rate per output unit?

- A) \$120.00
- B) \$125.00
- C) \$166.67
- D) \$175.00

Answer: B

Explanation: B) $\$75,000/600 = \125.00

Diff: 2

Terms: total-overhead variance

Objective: 2

AACSB: Analytical skills

9) Standard costing is a costing system that allocates overhead costs on the basis of the standard overhead-cost rates times the standard quantities of the allocation bases allowed for the actual outputs produced.

Answer: TRUE

Diff: 1

Terms: standard costing

Objective: 2

AACSB: Reflective thinking

10) For calculating the cost of products and services, a standard costing system must track actual costs.

Answer: FALSE

Explanation: For calculating the cost of products and services, a standard costing system does not have to track actual costs.

Diff: 3

Terms: standard costing

Objective: 2

AACSB: Reflective thinking

11) Standard costing is a cost system that allocates overhead costs on the basis of overhead cost rates based on actual overhead costs times the standard quantities of the allocation bases allowed for the actual outputs produced.

Answer: FALSE

Explanation: **Standard costing** is a costing system that traces direct costs to output produced by multiplying the standard prices or rates by the standard quantities of inputs allowed for actual outputs produced.

Diff: 3

Terms: standard costing

Objective: 2

AACSB: Reflective thinking

12) The budget period for variable-overhead costs is typically less than 3 months.

Answer: FALSE

Explanation: The budget period for variable-overhead costs is typically 12 months.

Diff: 1

Terms: total-overhead variance

Objective: 2

AACSB: Reflective thinking

Objective 8.3

1) The variable overhead flexible-budget variance measures the difference between:

- A) actual variable overhead costs and the static budget for variable overhead costs
- B) actual variable overhead costs and the flexible budget for variable overhead costs
- C) the static budget for variable overhead costs and the flexible budget for variable overhead costs
- D) None of these answers is correct.

Answer: B

Diff: 2

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Reflective thinking

2) A \$5,000 unfavorable flexible-budget variance indicates that:

- A) the flexible-budget amount exceeded actual variable manufacturing overhead by \$5,000
- B) the actual variable manufacturing overhead exceeded the flexible-budget amount by \$5,000
- C) the flexible-budget amount exceeded standard variable manufacturing overhead by \$5,000
- D) the standard variable manufacturing overhead exceeded the flexible-budget amount by \$5,000

Answer: B

Diff: 2

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

Answer the following questions using the information below:

Willis Corporation manufactures industrial-sized gas furnaces and uses budgeted machine-hours to allocate variable manufacturing overhead. The following information pertains to the company's manufacturing overhead data:

Budgeted output units	30,000 units
Budgeted machine-hours	10,000 hours
Budgeted variable manufacturing overhead costs for 15,000 units	\$322,500
Actual output units produced	44,000 units
Actual machine-hours used	14,400 hours
Actual variable manufacturing overhead costs	\$484,000

3) What is the flexible-budget amount for variable manufacturing overhead?

- A) \$330,000
- B) \$473,000
- C) \$484,000
- D) None of these answers is correct.

Answer: B

Explanation: B) $44,000 \times (\$322,500/30,000) = \$473,000$

Diff: 3

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

4) What is the flexible-budget variance for variable manufacturing overhead?

- A) \$11,000 favorable
- B) \$11,000 unfavorable
- C) \$8,600 favorable
- D) None of these answers is correct.

Answer: B

Explanation: B) $\$484,000 - [44,000 \times (\$322,500/30,000)] = \$11,000$ unfavorable

Diff: 3

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

5) Variable manufacturing overhead costs were _____ for actual output.

- A) higher than expected
- B) the same as expected
- C) lower than expected
- D) indeterminable

Answer: A

Diff: 2

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

Answer the following questions using the information below:

Christine Corporation manufactures baseball uniforms and uses budgeted machine-hours to allocate variable manufacturing overhead. The following information pertains to the company's manufacturing overhead data:

Budgeted output units	10,000 units
Budgeted machine-hours	15,000 hours
Budgeted variable manufacturing overhead costs for 20,000 units	\$180,000
Actual output units produced	9,000 units
Actual machine-hours used	14,000 hours
Actual variable manufacturing overhead costs	\$171,000

6) What is the flexible-budget amount for variable manufacturing overhead?

- A) \$162,000
- B) \$171,000
- C) \$190,000
- D) None of these answers is correct.

Answer: A

Explanation: A) $9,000 \times (\$180,000/10,000) = \$162,000$

Diff: 3

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

7) What is the flexible-budget variance for variable manufacturing overhead?

- A) \$9,000 favorable
- B) \$9,000 unfavorable
- C) zero
- D) None of these answers is correct.

Answer: B

Explanation: B) $9,000 \text{ units} \times 1.5 \text{ hours allowed per unit} = 13,500 \text{ hours allowed}$
 $13,500 \text{ hours} \times \text{budgeted rate of } \$12 \text{ per hour} = \$162,000$

Actual variable overhead was \$171,000

Flexible-budget variance \$9,000 U

Diff: 3

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

8) Variable-manufacturing overhead costs were _____ for actual output.

- A) higher than expected
- B) the same as expected
- C) lower than expected
- D) indeterminable

Answer: A

Diff: 2

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

Answer the following questions using the information below:

Fearless Frank's Fertilizer Farm produces fertilizer and distributes the product by using his tanker trucks. Frank's uses budgeted fleet hours to allocate variable manufacturing overhead. The following information pertains to the company's manufacturing overhead data:

Budgeted output units	600 truckloads
Budgeted fleet hours	450 hours
Budgeted pounds of fertilizer	24,000,000 pounds
Budgeted variable manufacturing overhead costs for 600 loads	\$75,000

Actual output units produced and delivered	630 truckloads
Actual fleet hours	436 hours
Actual pounds of fertilizer produced and delivered	25,200,000 pounds
Actual variable manufacturing overhead costs	\$76,500

9) What is the flexible-budget amount for variable manufacturing overhead?

- A) \$80,000
- B) \$78,750
- C) \$75,000
- D) \$76,500

Answer: B

Explanation: B) $630 \times (\$75,000/600) = \$78,750$

Diff: 3

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

10) What is the flexible-budget variance for variable manufacturing overhead?

- A) \$2,250 favorable
- B) \$2,250 unfavorable
- C) zero
- D) None of these answers are correct.

Answer: A

Explanation: A) $\$76,500 - 630 \times (\$75,000/600) = \$2,250$ favorable

Diff: 3

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

11) Variable-manufacturing overhead costs were _____ for actual output.

- A) higher than expected
- B) the same as expected
- C) lower than expected
- D) indeterminable

Answer: C

Diff: 2

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

12) The variable overhead flexible-budget variance can be further subdivided into the:

- A) price variance and the efficiency variance
- B) static-budget variance and sales-volume variance
- C) spending variance and the efficiency variance
- D) sales-volume variance and the spending variance

Answer: C

Diff: 1

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Reflective thinking

13) An unfavorable variable overhead spending variance indicates that:

- A) variable overhead items were not used efficiently
- B) the price of variable overhead items was more than budgeted
- C) the variable overhead cost-allocation base was not used efficiently
- D) the denominator level was not accurately determined

Answer: B

Diff: 2

Terms: variable overhead spending variance

Objective: 3

AACSB: Reflective thinking

14) When machine-hours are used as an overhead cost-allocation base, the most likely cause of a favorable variable overhead spending variance is:

- A) excessive machine breakdowns
- B) the production scheduler efficiently scheduled jobs
- C) a decline in the cost of energy
- D) strengthened demand for the product

Answer: C

Diff: 3

Terms: fixed overhead spending variance

Objective: 3

AACSB: Reflective thinking

15) When machine-hours are used as an overhead cost-allocation base and the unexpected purchase of a new machine results in fewer expenditures for machine maintenance, the most likely result would be to report a(n):

- A) favorable variable overhead spending variance
- B) unfavorable variable overhead efficiency variance
- C) favorable fixed overhead flexible-budget variance
- D) unfavorable production-volume variance

Answer: A

Diff: 3

Terms: variable overhead spending variance

Objective: 3

AACSB: Analytical skills

16) For variable manufacturing overhead, there is no:

- A) spending variance
- B) efficiency variance
- C) flexible-budget variance
- D) production-volume variance

Answer: D

Diff: 2

Terms: production-volume variance

Objective: 3

AACSB: Reflective thinking

Answer the following questions using the information below:

Brown Corporation manufactured 3,000 chairs during June. The following variable overhead data pertain to June:

Budgeted variable overhead cost per unit	\$ 12.00
Actual variable manufacturing overhead cost	\$33,600
Flexible-budget amount for variable manufacturing overhead	\$36,000
Variable manufacturing overhead efficiency variance	\$720 unfavorable

17) What is the variable overhead flexible-budget variance?

- A) \$2,400 favorable
- B) \$720 unfavorable
- C) \$3,120 favorable
- D) \$2,400 unfavorable

Answer: A

Explanation: A) $\$33,600 - \$36,000 = \$2,400$ (F)

Diff: 2

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

18) What is the variable overhead spending variance?

- A) \$1,680 unfavorable
- B) \$2,400 favorable
- C) \$2,400 unfavorable
- D) \$3,120 favorable

Answer: D

Explanation: D) $\$2,400 (F) + \$720 (U) = \$3,120 (F)$

Diff: 2

Terms: variable overhead spending variance

Objective: 3

AACSB: Analytical skills

Answer the following questions using the information below:

Patel Corporation manufactured 1,000 coolers during October. The following variable overhead data pertain to October:

Budgeted variable overhead cost per unit	\$ 9.00
Actual variable manufacturing overhead cost	\$8,400
Flexible-budget amount for variable manufacturing overhead	\$9,000
Variable manufacturing overhead efficiency variance	\$180 unfavorable

19) What is the variable overhead flexible-budget variance?

- A) \$600 favorable
- B) \$420 unfavorable
- C) \$780 favorable
- D) \$600 unfavorable

Answer: A

Explanation: A) $\$8,400 - \$9,000 = \$600 (F)$

Diff: 2

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

20) What is the variable overhead spending variance?

- A) \$420 unfavorable
- B) \$600 favorable
- C) \$600 unfavorable
- D) \$780 favorable

Answer: D

Explanation: D) $\$600 (F) - \$180 (U) = \$780 (F)$

Diff: 2

Terms: variable overhead spending variance

Objective: 3

AACSB: Analytical skills

Answer the following questions using the information below:

Roberts Corporation manufactured 100,000 buckets during February. The overhead cost-allocation base is \$5.00 per machine-hour. The following variable overhead data pertain to February:

	<u>Actual</u>	<u>Budgeted</u>
Production	100,000 units	100,000 units
Machine-hours	9,800 hours	10,000 hours
Variable overhead cost per machine-hour	\$5.25	\$5.00

21) What is the actual variable overhead cost?

- A) \$49,000
- B) \$50,000
- C) \$51,450
- D) None of these answers is correct.

Answer: C

Explanation: C) $9,800 \text{ mh} \times \$5.25 = \$51,450$

Diff: 1

Terms: total-overhead variance

Objective: 3

AACSB: Analytical skills

22) What is the flexible-budget amount?

- A) \$49,000
- B) \$50,000
- C) \$51,450
- D) None of these answers is correct.

Answer: B

Explanation: B) $10,000 \text{ mh} \times \$5.00 = \$50,000$

Diff: 2

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

23) What is the variable overhead spending variance?

- A) \$1,000 favorable
- B) \$1,450 unfavorable
- C) \$2,450 unfavorable
- D) None of these answers is correct.

Answer: C

Explanation: C) $(\$5.25 - \$5.00) \times 9,800 \text{ mh} = \$2,450$ unfavorable

Diff: 2

Terms: variable overhead spending variance

Objective: 3

AACSB: Analytical skills

24) What is the variable overhead efficiency variance?

- A) \$1,000 favorable
- B) \$1,450 unfavorable
- C) \$2,450 unfavorable
- D) None of these answers is correct.

Answer: A

Explanation: A) $[9,800 - 10,000] \times \$5.00 = \$1,000$ favorable

Diff: 2

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Analytical skills

Answer the following questions using the information below:

Roberson Corporation manufactured 30,000 ice chests during September. The overhead cost-allocation base is \$11.25 per machine-hour. The following variable overhead data pertain to September:

	<u>Actual</u>	<u>Budgeted</u>
Production	30,000 units	24,000 units
Machine-hours	15,000 hours	10,800 hours
Variable overhead cost per machine-hour:	\$11.00	\$11.25

25) What is the actual variable overhead cost?

- A) \$121,500
- B) \$151,875
- C) \$165,000
- D) \$168,750

Answer: C

Explanation: C) $15,000 \text{ mh} \times \$11.00 = \$165,000$

Diff: 1

Terms: total-overhead variance

Objective: 3

AACSB: Analytical skills

26) What is the flexible-budget amount?

- A) \$121,500
- B) \$151,875
- C) \$165,000
- D) \$168,750

Answer: B

Explanation: B) $30,000 \times (10,800/24,000) \times \$11.25 = \$151,875$

Diff: 3

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

27) What is the variable overhead spending variance?

- A) \$3,750 favorable
- B) \$16,875 unfavorable
- C) \$13,125 unfavorable
- D) \$30,375 unfavorable

Answer: A

Explanation: A) $(\$11.00 - \$11.25) \times 15,000 \text{ mh} = \$3,750 \text{ favorable}$

Diff: 3

Terms: variable overhead spending variance

Objective: 3

AACSB: Analytical skills

28) What is the variable overhead efficiency variance?

- A) \$3,750 favorable
- B) \$16,875 unfavorable
- C) \$13,125 unfavorable
- D) \$30,375 unfavorable

Answer: B

Explanation: B) $[15,000 - (30,000 \times 10,800/24,000) \text{ mh}] \times \$11.25 = \$16,875 \text{ unfavorable}$

Diff: 3

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Analytical skills

Answer the following questions using the information below:

Russo Corporation manufactured 16,000 air conditioners during November. The overhead cost-allocation base is \$31.50 per machine-hour. The following variable overhead data pertain to November:

	<u>Actual</u>	<u>Budgeted</u>
Production	16,000 units	18,000 units
Machine-hours	7,875 hours	9,000 hours
Variable overhead cost per machine-hour:	\$31.00	\$31.50

29) What is the actual variable overhead cost?

- A) \$244,125
- B) \$ 279,000
- C) \$248,063
- D) \$250,000

Answer: A

Explanation: A) $7,875 \text{ mh} \times \$31.00 = \$244,125$

Diff: 1

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

30) What is the flexible-budget amount?

- A) \$248,033
- B) \$252,000
- C) \$248,000
- D) \$279,000

Answer: B

Explanation: B) $16,000 \times (9,000/18,000) \times \$31.00 = \$252,000$

Diff: 3

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

31) What is the variable overhead spending variance?

- A) \$4,500 unfavorable
- B) \$3,937.50 unfavorable
- C) \$4,500 favorable
- D) \$3,937.50 favorable

Answer: D

Explanation: D) $(\$31.00 - \$31.50) \times 7,875 \text{ mh} = \$3,937.50 \text{ favorable}$

Diff: 3

Terms: variable overhead spending variance

Objective: 3

AACSB: Analytical skills

32) What is the variable overhead efficiency variance?

- A) \$3,937.50 favorable
- B) \$3,937.50 unfavorable
- C) \$4,500 favorable
- D) \$4,500 unfavorable

Answer: A

Explanation: A) $[7,875 - (16,000 \times 9,000/18,000) \text{ mh}] \times \$31.00 = \$3,937.50 \text{ favorable}$

Diff: 3

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Analytical skills

33) What is the total variable overhead variance

- A) \$7,875 unfavorable
- B) \$3,937.50 f unfavorable
- C) \$7,875 favorable
- D) \$3,937.50 f favorable

Answer: C

Explanation: C) Actual variable overhead - Flexible budgeted variable overhead

$(7,875 \text{ mh} \times \$31.00) - [16,000 \times (9,000/18,000) \text{ mh} \times \$31.50]$

$\$244,125 - \$252,000 = \$7,875 \text{ favorable}$

Diff: 3

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Analytical skills

34) The variable overhead efficiency variance is computed _____ and interpreted _____ the direct-cost efficiency variance.

- A) the same as; the same as
- B) the same as; differently than
- C) differently than; the same as
- D) differently than; differently than

Answer: B

Diff: 2

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Reflective thinking

35) An unfavorable variable overhead efficiency variance indicates that:

- A) variable overhead items were not used efficiently
- B) the price of variable overhead items was less than budgeted
- C) the variable overhead cost-allocation base was not used efficiently
- D) the denominator level was not accurately determined

Answer: C

Diff: 2

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Reflective thinking

36) Variable overhead costs can be managed by:

- A) reducing the consumption of the cost-allocation base
- B) eliminating nonvalue-adding variable costs
- C) planning for appropriate capacity levels
- D) Both A and B are correct.

Answer: D

Diff: 2

Terms: total-overhead variance

Objective: 3

AACSB: Reflective thinking

37) When machine-hours are used as a cost-allocation base, the item most likely to contribute to a favorable variable overhead efficiency variance is:

- A) excessive machine breakdowns
- B) the production scheduler's impressive scheduling of machines
- C) a decline in the cost of energy
- D) strengthened demand for the product

Answer: B

Diff: 3

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Reflective thinking

38) When machine-hours are used as a cost-allocation base, the item most likely to contribute to an unfavorable variable overhead efficiency variance is:

- A) using more machine hours than budgeted
- B) workers wastefully using variable overhead items
- C) unused capacity
- D) more units being produced than planned

Answer: A

Diff: 3

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Reflective thinking

39) When machine-hours are used as an overhead cost-allocation base, a rush order resulting in unplanned overtime that used less-skilled workers on the machines would most likely contribute to reporting a(n):

- A) favorable variable overhead spending variance
- B) unfavorable variable overhead efficiency variance
- C) favorable fixed overhead flexible-budget variance
- D) unfavorable production-volume variance

Answer: B

Diff: 3

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Ethical reasoning

40) A favorable variable overhead spending variance can be the result of paying lower prices than budgeted for variable overhead items such as energy.

Answer: TRUE

Diff: 1

Terms: variable overhead spending variance

Objective: 3

AACSB: Reflective thinking

41) The variable overhead efficiency variance is computed in a different way than the efficiency variance for direct-cost items.

Answer: FALSE

Explanation: The variable overhead efficiency variance is computed the same way as the efficiency variance for direct-cost items.

Diff: 1

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Reflective thinking

42) The variable overhead flexible-budget variance measures the difference between the *actual* variable overhead costs and the flexible-budget variable-overhead costs.

Answer: TRUE

Diff: 1

Terms: variable overhead flexible-budget variance

Objective: 3

AACSB: Reflective thinking

43) The variable overhead efficiency variance measures the efficiency with which the cost-allocation base is used.

Answer: TRUE

Diff: 1

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Reflective thinking

44) The variable overhead efficiency variance can be interpreted the same way as the efficiency variance for direct-cost items.

Answer: FALSE

Explanation: The interpretations are different. The variable overhead efficiency variance focuses on the quantity of allocation-base used, while the efficiency variance for direct-cost items focuses on the quantity of materials and labor-hours used.

Diff: 2

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Reflective thinking

45) An unfavorable variable overhead efficiency variance indicates that the company used more than planned of the cost-allocation base.

Answer: TRUE

Diff: 3

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Ethical reasoning

46) Causes of a favorable variable overhead efficiency variance might include using lower-skilled workers than expected.

Answer: FALSE

Explanation: Possible causes of a favorable variable overhead efficiency variance might include using *higher*-skilled workers that are more efficient than expected.

Diff: 2

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Reflective thinking

47) If the production planners set the budgeted machine hours standards too tight, one could anticipate there would be a favorable variable overhead efficiency variance.

Answer: FALSE

Explanation: If the production planners set the budgeted machine hours standards too tight, one could anticipate there would be an unfavorable variable overhead efficiency variance.

Diff: 2

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Ethical reasoning

48) Kelly's Pillow Company manufactures pillows. The 2011 operating budget is based on production of 40,000 pillows with 0.5 machine-hour allowed per pillow. Variable manufacturing overhead is anticipated to be \$440,000.

Actual production for 2011 was 36,000 pillows using 19,000 machine-hours. Actual variable costs were \$20 per machine-hour.

Required:

Calculate the variable overhead spending and efficiency variances.

Answer: Budgeted variable overhead per hour = $\$440,000 / (40,000 \times 0.5)$ machine-hours = \$22

Spending variance = $(\$22 - \$20) \times 19,000 = \$38,000$ favorable

Efficiency variance = $[19,000 - (40,000 \times 0.5)] \times \$22 = \$22,000$ unfavorable

Diff: 3

Terms: variable overhead spending variance, variable overhead efficiency variance

Objective: 3

AACSB: Analytical skills

49) Amy's Weathervane Company manufactures weathervanes. The 2011 operating budget is based on the production of 5,000 weathervanes with 1.25 machine-hour allowed per weathervane. Variable manufacturing overhead is anticipated to be \$150,000.

Actual production for 2011 was 5,500 weathervanes using 6,050 machine-hours. Actual variable costs were \$23.75 per machine-hour.

Required:

Calculate the variable overhead spending and the efficiency variances.

Answer: Budgeted variable overhead per hour = $\$150,000 / (5,000 \times 1.25)$ machine-hours = \$24

Spending variance = $(\$24 - \$23.75) \times 6,050 = \$1,512.50$ favorable

Efficiency variance = $[6,050 - (5,500 \times 1.25)] \times \$24 = \$19,800$ favorable

Diff: 3

Terms: variable overhead spending variance, variable overhead efficiency variance

Objective: 3

AACSB: Analytical skills

50) Briefly explain the meaning of the variable overhead efficiency variance and the variable overhead spending variance.

Answer: The variable overhead efficiency variance is the difference between actual quantity of the cost-allocation base used and the budgeted amount of the cost allocation base that should have been used to produce the actual output, multiplied by budgeted variable overhead cost per unit of the cost-allocation base. The efficiency variance for variable overhead cost is based on the efficiency with which the cost allocation base was used to make the actual output.

The variable overhead spending variance is the difference between the actual variable overhead cost per unit of the cost-allocation base and the budgeted variable overhead cost per unit of the cost-allocation base, multiplied by actual quantity of the variable overhead cost-allocation base used for actual output. The meaning of this variance hinges on an explanation of why the per unit cost of the allocation base is lower or higher than the amount budgeted. Some explanations might include different-than-budgeted prices for the individual inputs to variable overhead or perhaps more efficient usage of some of the variable overhead items.

Diff: 2

Terms: variable overhead efficiency variance, variable overhead spending variance

Objective: 3

AACSB: Reflective thinking

51) Briefly explain why a favorable variable overhead spending variance may not always be desirable.

Answer: The variable overhead spending variance is the difference between the actual variable overhead cost per unit of the cost-allocation base and the budgeted variable overhead cost per unit of the cost-allocation base, multiplied by the actual quantity of the variable overhead cost-allocation base used for the actual output. If a favorable variable overhead spending variance had been obtained by the managers of the company purchasing low-priced, poor-quality indirect materials, hired less talented supervisors, or performed less machine maintenance there could be negative future consequences. The long-run prospects for the business may suffer as the company ends up putting out a lower quality product, or it may end up having very large equipment repairs as a result of cutting corners in the short term.

Diff: 2

Terms: variable overhead spending variance

Objective: 3

AACSB: Reflective thinking

52) Can the variable overhead efficiency variance

- a. be *computed* the same way as the efficiency variance for direct-cost items?
- b. be *interpreted* the same way as the efficiency variance for direct-cost items? Explain.

Answer:

- a. Yes, the variable overhead efficiency variance can be computed the same way as the efficiency variance for direct-cost items.
- b. No, the interpretations are different. The variable overhead efficiency variance focuses on the quantity of allocation-base used, while the efficiency variance for direct-cost items focuses on the quantity of materials and labor-hours used.

Diff: 2

Terms: variable overhead efficiency variance

Objective: 3

AACSB: Analytical skills

Objective 8.4

1) When machine-hours are used as an overhead cost-allocation base and annual leasing costs for equipment unexpectedly increase, the most likely result would be to report a(n):

- A) unfavorable variable overhead spending variance
- B) favorable variable overhead efficiency variance
- C) unfavorable fixed overhead flexible-budget variance
- D) favorable production-volume variance

Answer: C

Diff: 3

Terms: fixed overhead flexible-budget variance

Objective: 4

AACSB: Analytical skills

2) The amount reported for fixed overhead on the static budget is also reported:

- A) as actual fixed costs
- B) as allocated fixed overhead
- C) on the flexible budget
- D) Both B and C are correct.

Answer: C

Diff: 1

Terms: fixed overhead flexible-budget variance

Objective: 4

AACSB: Reflective thinking

3) An unfavorable fixed overhead spending variance indicates that:

- A) there was more excess capacity than planned
- B) the price of fixed overhead items cost more than budgeted
- C) the fixed overhead cost-allocation base was not used efficiently
- D) the denominator level was more than planned

Answer: B

Diff: 2

Terms: fixed overhead spending variance

Objective: 4

AACSB: Reflective thinking

4) A favorable fixed overhead spending variance might indicate that:

- A) more capacity was used than planned
- B) the denominator level was less than planned
- C) the fixed overhead cost-allocation base was not used efficiently
- D) a plant expansion did not proceed as originally planned

Answer: D

Diff: 3

Terms: fixed overhead spending variance

Objective: 4

AACSB: Reflective thinking

5) For fixed manufacturing overhead, there is no:

- A) spending variance
- B) efficiency variance
- C) flexible-budget variance
- D) production-volume variance

Answer: B

Diff: 2

Terms: total-overhead variance

Objective: 4

AACSB: Reflective thinking

Answer the following questions using the information below:

Jenny's Corporation manufactured 25,000 grooming kits for horses during March. The fixed-overhead cost-allocation rate is \$20.00 per machine-hour. The following fixed overhead data pertain to March:

	<u>Actual</u>	<u>Static Budget</u>
Production	25,000 units	24,000 units
Machine-hours	6,100 hours	6,000 hours
Fixed overhead costs for March	\$123,000	\$120,000

6) What is the flexible-budget amount?

- A) \$120,000
- B) \$122,000
- C) \$123,000
- D) \$125,000

Answer: A

Explanation: A) \$120,000, the same lump sum as the static budget

Diff: 2

Terms: total-overhead variance

Objective: 4

AACSB: Analytical skills

7) What is the amount of fixed overhead allocated to production?

- A) \$120,000
- B) \$122,000
- C) \$123,000
- D) \$125,000

Answer: D

Explanation: D) $25,000 \times (6,000/24,000) \times \$20.00 = \$125,000$

Diff: 3

Terms: production-volume variance

Objective: 4

AACSB: Analytical skills

8) What is the fixed overhead spending variance?

- A) \$1,000 unfavorable
- B) \$2,000 favorable
- C) \$3,000 unfavorable
- D) \$5,000 favorable

Answer: C

Explanation: C) $\$123,000$ actual costs - $\$120,000$ budgeted cost = $\$3,000$ unfavorable

Diff: 3

Terms: fixed overhead spending variance

Objective: 4

AACSB: Analytical skills

Answer the following questions using the information below:

Rutch Corporation manufactured 54,000 door jambs during September. The fixed-overhead cost-allocation rate is \$50.00 per machine-hour. The following fixed overhead data pertain to September:

	<u>Actual</u>	<u>Static Budget</u>
Production	54,000 units	60,000 units
Machine-hours	985 hours	1,150 hours
Fixed overhead costs for September	\$53,400	\$57,500

9) What is the flexible-budget amount?

- A) \$100,000
- B) \$53,400
- C) \$57,500
- D) \$51,750

Answer: C

Explanation: C) \$57,500, the same lump sum as the static budget

Diff: 2

Terms: total-overhead variance

Objective: 4

AACSB: Analytical skills

10) What is the amount of fixed overhead allocated to production?

- A) \$51,750
- B) \$100,000
- C) \$53,400
- D) \$57,500

Answer: A

Explanation: A) Rate for applying budgeted overhead = $\$57,500/1,150 = \$50/\text{hr}$

$54,000 \times (1,150/60,000) \times 50.00 = \$51,750$

Diff: 3

Terms: production-volume variance

Objective: 4

AACSB: Analytical skills

11) What is the fixed overhead spending variance?

- A) \$5,750 unfavorable
- B) \$5,750 favorable
- C) \$4,100 favorable
- D) \$4,100 unfavorable

Answer: C

Explanation: C) $\$53,400$ actual costs - $\$57,500$ budgeted cost = $\$4,100$ favorable

Diff: 3

Terms: fixed overhead spending variance

Objective: 4

AACSB: Analytical skills

Answer the following questions using the information below:

Gus Corporation manufactured 10,000 golf bags during April. The fixed overhead cost-allocation rate is \$40.00 per machine-hour. The following fixed overhead data pertain to March:

	<u>Actual</u>	<u>Static Budget</u>
Production	10,000 units	12,000 units
Machine-hours	5,100 hours	6,000 hours
Fixed overhead cost for March	\$244,000	\$240,000

12) What is the flexible-budget amount?

- A) \$200,000
- B) \$204,000
- C) \$240,000
- D) \$244,000

Answer: C

Explanation: C) \$240,000, the same lump sum as the static budget

Diff: 2

Terms: total-overhead variance

Objective: 4

AACSB: Analytical skills

13) What is the amount of fixed overhead allocated to production?

- A) \$200,000
- B) \$204,000
- C) \$240,000
- D) \$244,000

Answer: A

Explanation: A) $10,000 \times (6,000/12,000) \times \$40.00 = \$200,000$

Diff: 3

Terms: production-volume variance

Objective: 4

AACSB: Analytical skills

14) Fixed overhead is:

- A) overallocated by \$4,000
- B) underallocated by \$4,000
- C) overallocated by \$44,000
- D) underallocated by \$44,000

Answer: D

Explanation: D) $\$244,000 - [10,000 \times (6,000/12,000) \times \$40.00] = \$44,000$ underallocated

Diff: 3

Terms: production-volume variance

Objective: 4

AACSB: Analytical skills

15) When machine-hours are used as a cost-allocation base, the item most likely to contribute to a favorable production-volume variance is:

- A) an increase in the selling price of the product
- B) the purchase of a new manufacturing machine costing considerably less than expected
- C) a decline in the cost of energy
- D) strengthened demand for the product

Answer: D

Diff: 3

Terms: production-volume variance

Objective: 4

AACSB: Analytical skills

16) When machine-hours are used as a cost-allocation base, the item most likely to contribute to an unfavorable production-volume variance is:

- A) a new competitor gaining market share
- B) a new manufacturing machine costing considerably more than expected
- C) an increase in the cost of energy
- D) strengthened demand for the product

Answer: A

Diff: 3

Terms: production-volume variance

Objective: 4

AACSB: Analytical skills

17) Excess capacity is a sign:

- A) that capacity should be reduced
- B) that capacity may need to be re-evaluated
- C) that the company is suffering a significant economic loss
- D) of good management decisions

Answer: B

Diff: 2

Terms: production-volume variance

Objective: 4

AACSB: Reflective thinking

18) If the production planners set the budgeted machine hours standards too tight, one could anticipate there would be an unfavorable fixed overhead efficiency variance.

Answer: FALSE

Explanation: There is no efficiency variance for fixed costs because a given lump sum of fixed costs will be unaffected by how efficiently machine-hours are used to produce output in a given budget period.

Diff: 2

Terms: total-overhead variance

Objective: 3, 4

AACSB: Ethical reasoning

19) For fixed overhead costs, the flexible-budget amount is always the same as the static-budget amount.

Answer: TRUE

Diff: 2

Terms: fixed overhead flexible-budget variance

Objective: 4

AACSB: Reflective thinking

20) The fixed overhead flexible-budget variance is the difference between actual fixed overhead costs and the fixed overhead costs in the flexible budget.

Answer: TRUE

Diff: 1

Terms: fixed overhead flexible-budget variance

Objective: 4

AACSB: Reflective thinking

21) Fixed costs may have a spending variance and/or an efficiency variance.

Answer: FALSE

Explanation: There is never an efficiency variance for fixed costs.

Diff: 2

Terms: total-overhead variance

Objective: 4

AACSB: Reflective thinking

22) All unfavorable overhead variances decrease operating income compared to the budget.

Answer: TRUE

Diff: 2

Terms: total-overhead variance

Objective: 4

AACSB: Reflective thinking

23) A favorable fixed overhead flexible-budget variance indicates that actual fixed costs exceeded the lump-sum amount budgeted.

Answer: FALSE

Explanation: A favorable fixed overhead flexible-budget variance indicates that actual fixed costs were *less than* the lump-sum amount budgeted.

Diff: 1

Terms: fixed overhead flexible-budget variance

Objective: 4

AACSB: Reflective thinking

24) Fixed costs for the period are by definition a lump sum of costs that remain unchanged and therefore the fixed overhead spending variance is always zero.

Answer: FALSE

Explanation: Fixed costs for the period are by definition a lump sum of costs, but they can and do change from the amount that was originally budgeted.

Diff: 2

Terms: fixed overhead spending variance

Objective: 4

AACSB: Reflective thinking

25) The fixed overhead efficiency variance is the difference between actual fixed overhead costs and fixed overhead costs in the flexible budget.

Answer: FALSE

Explanation: The fixed overhead flexible budget variance is the difference between actual fixed overhead costs and fixed overhead costs in the flexible budget. There is never an efficiency variance for fixed costs.

Diff: 2

Terms: fixed overhead flexible-budget variance

Objective: 4

AACSB: Reflective thinking

26) Favorable overhead variances are always recorded with credits in a standard cost system.

Answer: TRUE

Diff: 2

Terms: standard costing, total-overhead variance

Objective: 4

AACSB: Reflective thinking

27) Under activity-based costing, the flexible-budget amount equals the static-budget amount for fixed overhead costs.

Answer: TRUE

Diff: 2

Terms: fixed overhead flexible-budget variance

Objective: 4

AACSB: Reflective thinking

28) Managers should use unitized fixed manufacturing overhead costs for planning and control.

Answer: FALSE

Explanation: Managers should *not* use unitized fixed manufacturing overhead costs for planning and control, but only for inventory costing purposes.

Diff: 3

Terms: production-volume variance

Objective: 4

AACSB: Reflective thinking

29) For purposes of allocating fixed overhead costs to products, managers may view the fixed overhead costs as if they had a variable-cost behavior pattern.

Answer: TRUE

Diff: 3

Terms: production-volume variance

Objective: 4

AACSB: Reflective thinking

30) McKenna Company manufactured 1,000 units during April with a total overhead budget of \$12,400. However, while manufacturing the 1,000 units the microcomputer that contained the month's cost information broke down. With the computer out of commission, the accountant has been unable to complete the variance analysis report. The information missing from the report is lettered in the following set of data:

Variable overhead:

Standard cost per unit: 0.4 labor hour at \$4 per hour

Actual costs: \$2,100 for 376 hours

Flexible budget: a

Total flexible-budget variance: b

Variable overhead spending variance: c

Variable overhead efficiency variance: d

Fixed overhead:

Budgeted costs: e

Actual costs: f

Flexible-budget variance: \$500 favorable

Required:

Compute the missing elements in the report represented by the lettered items.

Answer:

a. $1,000 \times 0.40 \times \$4 = \$1,600$

b. $\$2,100 - \$1,600 = \$500$ unfavorable

c. $\$2,100 - (376 \times \$4) = \$596$ unfavorable

d. $\$1,504 - \$1,600 = \$96$ favorable

e. $\$12,400 - \$1,600 = \$10,800$

f. $\$10,800 - \500 favorable = \$10,300

Diff: 3

Terms: var ovrrhd flex-bud/spend varnc, var ovrrhd efficiency/fixed ovrrhd flex-budget varnc

Objective: 3, 4

AACSB: Analytical skills

31) Everjoyce Company makes clocks. The fixed overhead costs for 20X5 total \$720,000. The company uses direct labor-hours for fixed overhead allocation and anticipates 240,000 hours during the year for 480,000 units. An equal number of units are budgeted for each month.

During June, 42,000 clocks were produced and \$63,000 were spent on fixed overhead.

Required:

- a. Determine the fixed overhead rate for 20X5 based on units of input.
- b. Determine the fixed overhead static-budget variance for June.
- c. Determine the production-volume overhead variance for June.

Answer:

- a. Fixed overhead rate = $\$720,000/240,000 = \3.00 per hour
- b. Fixed overhead static budget variance = $\$63,000 - (\$720,000/12) = \$3,000$ unfavorable
- c. Budgeted fixed overhead rate per output unit = $\$720,000/480,000 = \1.50

Denominator level in output units = $(40,000 - 42,000) \times \$1.50 = \$3,000$ favorable

Diff: 3

Terms: fixed overhead spending variance, production-volume variance

Objective: 4

AACSB: Analytical skills

32) Brown Company makes watches. The fixed overhead costs for 2011 total \$324,000. The company uses direct labor-hours for fixed overhead allocation and anticipates 10,800 hours during the year for 540,000 units. An equal number of units are budgeted for each month.

During October, 48,000 watches were produced and \$28,000 was spent on fixed overhead.

Required:

- a. Determine the fixed overhead rate for 2011 based on the units of input.
- b. Determine the fixed overhead static-budget variance for October.
- c. Determine the production-volume overhead variance for October.

Answer:

- a. Fixed overhead rate = $\$324,000/10,800 = \30.00 per hour
- b. Fixed overhead static budget variance = $\$28,000 - (\$324,000/12) = \$1,000$ unfavorable
- c. Budgeted fixed overhead rate per output unit = $\$324,000/540,000 = \0.60

Denominator level in output units = $(45,000 - 48,000) \times \$0.60 = \$1,800$ favorable

Diff: 3

Terms: fixed overhead spending variance, production-volume variance

Objective: 4

AACSB: Analytical skills

33) Explain why there is no efficiency variance for fixed manufacturing overhead costs.

Answer: There is no efficiency variance for fixed overhead costs because a given lump sum of fixed costs will be unaffected by how efficiently machine-hours are used to produce output in a given budget period.

Diff: 2

Terms: total-overhead variance

Objective: 4

AACSB: Reflective thinking

34) How is a budgeted fixed overhead cost rate calculated?

Answer: The budgeted fixed overhead cost rate is calculated by dividing the budgeted fixed overhead costs by the denominator level of the cost-allocation base.

Diff: 2

Terms: production-volume variance

Objective: 4

AACSB: Reflective thinking

35) Explain why there is no production-volume variance for variable manufacturing overhead costs.

Answer: There is no production-volume variance for variable overhead costs because the amount of variable overhead allocated is always the same as the flexible-budget amount.

Diff: 2

Terms: production-volume variance, total-overhead variance

Objective: 4

AACSB: Reflective thinking

36) Abby Company has just implemented a new cost accounting system that provides two variances for fixed manufacturing overhead. While the company's managers are familiar with the concept of spending variances, they are unclear as to how to interpret the production-volume overhead variances. Currently, the company has a production capacity of 54,000 units a month, although it generally produces only 46,000 units. However, in any given month the actual production is probably something other than 46,000.

Required:

- a. Does the production-volume overhead variance measure the difference between the 54,000 and 46,000, or the difference between the 46,000 and the actual monthly production? Explain.
- b. What advice can you provide the managers that will help them interpret the production-volume overhead variances?

Answer:

- a. It is the difference between the 46,000 and the actual production level for the period. The difference between the 54,000 and the 46,000 is the unused capacity that was planned for the period. The difference between the 46,000 and the actual level was not planned.
- b. When actual outputs are less than the denominator level, the production-volume variance is unfavorable. This is opposite the label given other variances that have a favorable label when costs are less than the budgeted amount; therefore, caution is needed.

The production-volume variance is favorable when actual production exceeds what was planned for the period. This actually provides for a cost per unit amount that was less than budgeted using the planned denominator.

Diff: 3

Terms: production-volume variance

Objective: 4

AACSB: Analytical skills

37) Explain the meaning of a favorable production-volume variance.

Answer: The production-volume variance is favorable when actual production exceeds that which is planned for the period. When this happens, it results in a fixed cost per unit that is less than budgeted amount using the planned production.

Diff: 3

Terms: production-volume variance

Objective: 4

AACSB: Reflective thinking

38) What are the arguments for prorating a production-volume variance that has been deemed to be material among work-in-process, finished goods, cost and cost of goods sold as opposed to writing it all off to cost of goods sold?

Answer: If variances are always written off to cost of goods sold, a company could set its standards to either increase (for financial reporting purposes) or decrease (for tax purposes) operating incomes. The proration method has the effect of approximating the allocation of fixed costs based on actual costs and actual output so it is not susceptible to the manipulation of operating income based on the choice of the denominator level.

Diff: 3

Terms: production-volume variance

Objective: 4

AACSB: Analytical skills

39) Explain two concerns when interpreting the production-volume variance as a measure of the economic cost of unused capacity.

Answer: The first concern would be the fact that management might have maintained some extra capacity to meet uncertain demand surges that are important to satisfy. If these surges are not occurring in a given year an unfavorable production-volume variance might occur.

The second concern would be to note that this variance only focuses on fixed overhead costs, and ignores the possibility that price decreases might have been necessary to spur the extra demand to make use of any idle capacity.

Diff: 3

Terms: production-volume variance

Objective: 4

AACSB: Reflective thinking

Objective 8.5

1) Variable overhead costs:

- A) never have any unused capacity
- B) have no production-volume variance
- C) allocated are always the same as the flexible-budget amount
- D) All of these answers are correct.

Answer: D

Diff: 2

Terms: total-overhead variance

Objective: 5

AACSB: Reflective thinking

2) Fixed overhead costs:

- A) never have any unused capacity
- B) should be unitized for planning purposes
- C) are unaffected by the degree of operating efficiency in a given budget period
- D) Both A and B are correct.

Answer: C

Diff: 2

Terms: total-overhead variance

Objective: 5

AACSB: Reflective thinking

- 3) Fixed overhead costs must be unitized for:
- A) financial reporting purposes
 - B) planning purposes
 - C) calculating the production-volume variance
 - D) Both A and C are correct.

Answer: D

Diff: 2

Terms: production-volume variance

Objective: 5

AACSB: Reflective thinking

- 4) Generally Accepted Accounting Principles require that unitized fixed manufacturing costs be used for:

- A) pricing decisions
- B) costing decisions
- C) external reporting
- D) All of these answers are correct.

Answer: C

Diff: 1

Terms: production-volume variance

Objective: 5

AACSB: Reflective thinking

- 5) A nonfinancial measure of performance evaluation is:

- A) increased sales
- B) reducing distribution costs
- C) energy used per machine-hour
- D) All of these answers are correct.

Answer: C

Diff: 2

Terms: total-overhead variance

Objective: 5

AACSB: Reflective thinking

- 6) Variance information regarding nonmanufacturing costs can be used to:

- A) plan capacity in the service sector
- B) control distribution costs in the retail sector
- C) determine the most profitable services offered by a bank
- D) All of these answers are correct.

Answer: D

Diff: 2

Terms: total-overhead variance

Objective: 5

AACSB: Reflective thinking

7) Marshall Company uses a standard cost system. In April, \$266,000 of variable manufacturing overhead costs were incurred and the flexible-budget amount for the month was \$300,000. Which of the following variable manufacturing overhead entries would have been recorded for March?

- | | | |
|--|---------|---------|
| A) Accounts Payable Control and other accounts | 300,000 | |
| Work-in-Process Control | | 300,000 |
| B) Variable Manufacturing Overhead Allocated | 300,000 | |
| Accounts Payable and other accounts | | 300,000 |
| C) Work-in-Process Control | 266,000 | |
| Accounts Payable Control and other accounts | | 266,000 |
| D) Variable Manufacturing Overhead Control | 266,000 | |
| Accounts Payable Control and other accounts | | 266,000 |

Answer: D

Diff: 2

Terms: standard costing

Objective: 5

AACSB: Analytical skills

8) Sanchez Company made the following journal entry:

Variable Manufacturing Overhead Allocated		200,000
Variable Manufacturing Overhead Efficiency Variance	60,000	
Variable Manufacturing Overhead Control		250,000
Variable Manufacturing Overhead Spending Variance		10,000

A) Sanchez overallocated variable manufacturing overhead.

B) A \$10,000 favorable spending variance was recorded.

C) Work-in-Process is currently overstated.

D) This entry may be recorded yearly to provide timely feedback to managers.

Answer: B

Diff: 2

Terms: standard costing, variable overhead spending/efficiency variance

Objective: 5

AACSB: Analytical skills

9) Luke's Football Manufacturing Company reported:

Actual fixed overhead	\$400,000
Fixed manufacturing overhead spending variance	\$10,000 favorable
Fixed manufacturing production-volume variance	\$15,000 unfavorable

To isolate these variances at the end of the accounting period, John would debit Fixed Manufacturing Overhead Allocated for:

- A) \$390,000
- B) \$395,000
- C) \$400,000
- D) \$405,000

Answer: B

Explanation: B) $\$400,000 + \$10,000 - \$15,000 = \$395,000$

Diff: 2

Terms: fixed overhead spending variance, production-volume variance

Objective: 5

AACSB: Analytical skills

10) Andy's Basketball Manufacturing Company reported:

Actual fixed overhead	\$500,000
Fixed manufacturing overhead spending variance	\$30,000 unfavorable
Fixed manufacturing production-volume variance	\$20,000 unfavorable

To isolate these variances at the end of the accounting period, Brandon would:

- A) debit Fixed Manufacturing Overhead Allocated for \$500,000
- B) debit Fixed Manufacturing Overhead Spending Variance for \$30,000
- C) credit Fixed Manufacturing Production-Volume Variance for \$20,000
- D) credit Fixed Manufacturing Control Allocated for \$450,000

Answer: B

Diff: 2

Terms: standard costing, fixed overhead spending variance, production-volume variance

Objective: 5

AACSB: Analytical skills

11) Teddy Company uses a standard cost system. In May, \$234,000 of variable manufacturing overhead costs were incurred and the flexible-budget amount for the month was \$240,000. Which of the following variable manufacturing overhead entries would have been recorded for May?

A) Accounts Payable Control and other accounts	240,000	
Work-in-Process Control		240,000
B) Work-in-Process Control	240,000	
Variable Manufacturing Overhead Allocated		240,000
C) Work-in-Process Control	234,000	
Accounts Payable Control and other accounts		234,000
D) Accounts Payable Control and other accounts	234,000	
Variable Manufacturing Overhead Control		234,000

Answer: B

Diff: 2

Terms: standard costing

Objective: 5

AACSB: Analytical skills

12) Tara Company makes the following journal entry:

Variable Manufacturing Overhead Allocated	200,000	
Variable Manufacturing Overhead Efficiency Variance	5,000	
Variable Manufacturing Overhead Control		175,000
Variable Manufacturing Overhead Spending Variance		30,000

- A) Tara underallocated variable manufacturing overhead.
- B) A \$30,000 unfavorable spending variance was recorded.
- C) Work-in-Process is currently understated.
- D) A \$25,000 favorable flexible-budget variance was recorded.

Answer: D

Diff: 2

Terms: standard costing, variable overhead efficiency/spending variance

Objective: 5

AACSB: Analytical skills

13) Jeremy's Football Manufacturing Company reported:

Actual fixed overhead	\$500,000
Fixed manufacturing overhead spending variance	\$30,000 favorable
Fixed manufacturing production-volume variance	\$20,000 unfavorable

To isolate these variances at the end of the accounting period, Jeremy would debit Fixed Manufacturing Overhead Allocated for:

- A) \$480,000
- B) \$490,000
- C) \$500,000
- D) \$510,000

Answer: D

Diff: 2

Terms: standard costing, fixed overhead spending variance, production-volume variance

Objective: 5

AACSB: Analytical skills

14) Kristin's Basketball Manufacturing Company reported:

Actual fixed overhead	\$800,000
Fixed manufacturing overhead spending variance	\$60,000 favorable
Fixed manufacturing production-volume variance	\$40,000 favorable

To isolate these variances at the end of the accounting period, Kristin would debit:

- A) Fixed Manufacturing Overhead Allocated for \$900,000
- B) Fixed Manufacturing Overhead Spending Variance for \$60,000
- C) Fixed Manufacturing Production-Volume Variance for \$40,000
- D) All of these answers are correct.

Answer: A

Diff: 2

Terms: standard costing, fixed overhead spending variance, production-volume variance

Objective: 5

AACSB: Analytical skills

Answer the following questions using the information below:

<u>Variiances</u>	<u>Spending</u>	<u>Production- Efficiency</u>	<u>Volume</u>
Variable manufacturing overhead	\$ 9,000 F	\$30,000 U	(B)
Fixed manufacturing overhead	\$20,000 U	(A)	\$80,000 U

15) Above is a:

- A) 4-variance analysis
- B) 3-variance analysis
- C) 2-variance analysis
- D) 1-variance analysis

Answer: A

Diff: 1

Terms: total-overhead variance

Objective: 5

AACSB: Analytical skills

16) In the above chart, the amounts for (A) and (B), respectively, are:

- A) \$21,000 U; \$110,000 U
- B) \$21,000 U; Zero
- C) Zero; \$110,000 U
- D) Zero; Zero

Answer: D

Diff: 1

Terms: total-overhead variance

Objective: 5

AACSB: Analytical skills

17) In a 3-variance analysis the spending variance should be:

- A) \$ 9,000 F
- B) \$20,000 U
- C) \$11,000 U
- D) \$21,000 U

Answer: C

Explanation: C) $\$9,000 \text{ F} + \$20,000 \text{ U} = \$11,000 \text{ U}$

Diff: 1

Terms: total-overhead variance

Objective: 5

AACSB: Analytical skills

18) In a 2-variance analysis the flexible-budget variance and the production-volume variance should be _____, respectively.

- A) \$11,000 U; \$110,000 U
- B) \$41,000 U; \$80,000 U
- C) \$21,000 U; \$100,000 U
- D) \$121,000 U; Zero

Answer: B

Explanation: B) $\$9,000 F + \$20,000 U + \$30,000 U = \$41,000 U; \$80,000 U$

Diff: 2

Terms: total-overhead variance

Objective: 5

AACSB: Analytical skills

19) In a 1-variance analysis the total overhead variance should be:

- A) \$41,000 U
- B) \$121,000 U
- C) \$242,000 U
- D) None of these answers is correct.

Answer: B

Explanation: B) $\$9,000 F + \$20,000 U + \$30,000 U + \$80,000 U = \$121,000 U$

Diff: 2

Terms: total-overhead variance

Objective: 5

AACSB: Analytical skills

20) Both financial and nonfinancial performance measures are key inputs when evaluating the performance of managers.

Answer: TRUE

Diff: 1

Terms: total-overhead variance

Objective: 5

AACSB: Reflective thinking

21) In the journal entry that records overhead variances, the manufacturing overhead allocated accounts are closed.

Answer: TRUE

Diff: 1

Terms: standard costing

Objective: 5

AACSB: Use of Information Technology

22) Variance analysis of fixed nonmanufacturing costs, such as distribution costs, can also be useful when planning for capacity.

Answer: TRUE

Diff: 1

Terms: total-overhead variance

Objective: 5

AACSB: Reflective thinking

23) At the end of the fiscal year, the fixed overhead spending variance is always prorated among work-in-process control, finished goods control, and cost of goods sold on the basis of the fixed overhead allocated to these accounts.

Answer: FALSE

Explanation: At the end of the fiscal year, the fixed overhead spending variance is written off to cost of goods sold if it is immaterial in amount; otherwise it is prorated among work-in-process control, finished goods control, and cost of goods sold on the basis of the fixed overhead allocated to these accounts.

Diff: 1

Terms: fixed overhead spending variance

Objective: 5

AACSB: Reflective thinking

24) Lungren has budgeted construction overhead for August of \$260,000 for variable costs and \$435,000 for fixed costs. Actual costs for the month totaled \$275,000 for variable and \$445,000 for fixed. Allocated fixed overhead totaled \$440,000. The company tracks each item in an overhead control account before allocations are made to individual jobs. Spending variances for August were \$10,000 unfavorable for variable and \$10,000 unfavorable for fixed. The production-volume overhead variance was \$5,000 favorable.

Required:

- a. Make journal entries for the actual costs incurred.
- b. Make journal entries to record the variances for August.

Answer:

a.	Variable Overhead Control	275,000	
	Accounts Payable and other accounts		275,000
	<i>To record actual variable construction overhead</i>		

	Fixed Overhead Control	445,000	
	Accumulated Depreciation, etc.		445,000
	<i>To record actual fixed construction overhead</i>		

b.	Variable Overhead Allocated	260,000	
	Variable Overhead Spending Variance	10,000	
	Variable Overhead Efficiency Variance*	5,000	
	Variable Overhead Control		275,000
	<i>To record variances for the period</i>		

*Arrived at this number by \$275,000 - \$260,000 - \$5,000

	Fixed Overhead Allocated	440,000	
	Fixed Overhead Spending Variance	10,000	
	Fixed Overhead Production-Volume Variance		5,000
	Fixed Overhead Control		445,000
	<i>To record variances for the period</i>		

Diff: 3

Terms: stndrd costing, var ovrhd effic/spending varnc, fixed ovrhd spending/prod-vol varnc

Objective: 5

AACSB: Analytical skills

25) Different management levels in Bates, Inc., require varying degrees of managerial accounting information. Because of the need to comply with the managers' requests, four different variances for manufacturing overhead are computed each month. The information for the September overhead expenditures is as follows:

Budgeted output units	3,200 units
Budgeted fixed manufacturing overhead	\$20,000
Budgeted variable manufacturing overhead	\$5 per direct labor hour
Budgeted direct manufacturing labor hours	2 hours per unit
Fixed manufacturing costs incurred	\$26,000
Direct manufacturing labor hours used	7,200
Variable manufacturing costs incurred	\$35,600
Actual units manufactured	3,400

Required:

- Compute a 4-variance analysis for the plant controller.
- Compute a 3-variance analysis for the plant manager.
- Compute a 2-variance analysis for the corporate controller.
- Compute the flexible-budget variance for the manufacturing vice president.

Answer:

- a. *4-variance analysis:*

Variable overhead spending variance = $\$35,600 - (7,200 \times \$5) = \$400$ favorable

Variable overhead efficiency variance = $\$5 \times (7,200 - 6,800^*) = \$2,000$ unfavorable

* $3,400 \text{ units} \times 2 \text{ hours} = 6,800 \text{ hours}$

Fixed overhead spending variance = $\$26,000 - \$20,000 = \$6,000$ unfavorable

Fixed overhead production-volume variance = $\$20,000 - (3,400 \times 2 \times \$3.125^*) = \$1,250$ favorable

* $\$20,000 / (3,200 \text{ units} \times 2 \text{ hours}) = \3.125

- b. *3-variance analysis:*

Spending variance = $\$400$ favorable + $\$6,000$ unfavorable = $\$5,600$ unfavorable

Efficiency variance = $\$2,000$ unfavorable

Production-volume variance = $\$1,250$ favorable

- c. *2-variance analysis:*

Flexible-budget variance = $\$400$ F + $\$2,000$ U + $\$6,000$ U = $\$7,600$ unfavorable

Production-volume variance = $\$1,250$ favorable

- d. *1-variance analysis:*

	<u>Actual</u>	<u>Flexible Budget</u>	<u>Variances</u>
Fixed overhead	\$26,000	\$21,250 *	\$4,750 U
Variable overhead	35,600	34,000 **	<u>1,600</u> U
Flexible-budget variance			<u>\$6,350</u> U

* $\$3.125 \times 3,400 \times 2 = \$21,250$

** $3,400 \times 2 \times \$5 = \$34,000$

Diff: 3

Terms: fxd ovrhd flex-bud/spending/var ovrhd efficiency/flex-bud/spending/prod-vol varnc

Objective: 5

AACSB: Analytical skills

26) The chapter shows that variance analysis of overhead costs can be presented in 4, 3, 2, and 1-variance analysis. Explain what each of the variances presented under each method shows about overhead costs.

Answer: Under the 4-variance analysis, there is a spending variance shown for the variable manufacturing overhead, a spending variance for the fixed overhead component, an efficiency variance for the variable overhead, and a production-volume variance for the fixed overhead. When the firm uses a 3-variance approach, the fixed and variable spending variance is combined into a single variance, while the variable overhead efficiency is still shown separately and the fixed overhead production-volume variance is singled out. In the 2-variance method, the fixed and variable spending variances are combined into one amount along with the variable efficiency, and then the fixed production-volume is shown as a separate variance. The 1-variance method shows the difference between the actual costs incurred and the flexible-budget amount for the output level achieved.

Diff: 3

Terms: total-overhead variance

Objective: 5

AACSB: Reflective thinking

Objective 8.6

1) The fixed overhead cost variance can be further subdivided into the:

A) price variance and the efficiency variance

B) spending variance and flexible-budget variance

C) production-volume variance and the efficiency variance

D) flexible-budget variance and the production-volume variance

Answer: D

Diff: 1

Terms: total-overhead variance

Objective: 6

AACSB: Reflective thinking

Answer the following questions using the information below:

Jenny's Corporation manufactured 25,000 grooming kits for horses during March. The fixed-overhead cost-allocation rate is \$20.00 per machine-hour. The following fixed overhead data pertain to March:

	<u>Actual</u>	<u>Static Budget</u>
Production	25,000 units	24,000 units
Machine-hours	6,100 hours	6,000 hours
Fixed overhead costs for March	\$123,000	\$120,000

2) What is the fixed overhead production-volume variance?

- A) \$1,000 unfavorable
- B) \$2,000 favorable
- C) \$3,000 unfavorable
- D) \$5,000 favorable

Answer: D

Explanation: D) $\$120,000 - [25,000 \times (6,000/24,000) \times \$20.00] = \$5,000$ favorable

Diff: 3

Terms: production-volume variance

Objective: 6

AACSB: Analytical skills

Answer the following questions using the information below:

Gus Corporation manufactured 10,000 golf bags during April. The fixed overhead cost-allocation rate is \$40.00 per machine-hour. The following fixed overhead data pertain to March:

	<u>Actual</u>	<u>Static Budget</u>
Production	10,000 units	12,000 units
Machine-hours	5,100 hours	6,000 hours
Fixed overhead cost for March	\$244,000	\$240,000

3) What is the fixed overhead production-volume variance?

- A) \$4,000 unfavorable
- B) \$36,000 favorable
- C) \$40,000 unfavorable
- D) \$44,000 unfavorable

Answer: C

Explanation: C) $\$240,000 - [10,000 \times (6,000/12,000) \times \$40.00] = \$40,000$ unfavorable

Diff: 3

Terms: production-volume variance

Objective: 6

AACSB: Analytical skills

4) The production-volume variance may also be referred to as the:

- A) flexible-budget variance
- B) denominator-level variance
- C) spending variance
- D) efficiency variance

Answer: B

Diff: 1

Terms: denominator level, denominator-level variance

Objective: 6

AACSB: Analytical skills

5) A favorable production-volume variance indicates that the company:

- A) has good management
- B) has allocated more fixed overhead costs than budgeted
- C) has a total economic gain from using excess capacity
- D) should increase capacity

Answer: B

Diff: 2

Terms: production-volume variance

Objective: 6

AACSB: Analytical skills

6) An unfavorable production-volume variance of \$20,000 indicates that the company has:

- A) unused fixed manufacturing overhead capacity
- B) overallocated \$20,000 of fixed manufacturing overhead costs
- C) \$20,000 more capacity than needed
- D) an economic loss of \$20,000 from selling fewer products than planned

Answer: A

Diff: 3

Terms: production-volume variance

Objective: 6

AACSB: Analytical skills

7) An unfavorable production-volume variance:

- A) is not a good measure of a lost production opportunity
- B) measures the total economic gain or loss due to unused capacity
- C) measures the amount of extra fixed costs planned for but not used
- D) takes into account the effect of additional revenues due to maintaining higher prices

Answer: C

Diff: 3

Terms: production-volume variance

Objective: 6

AACSB: Reflective thinking

8) The difference between budgeted fixed manufacturing overhead and the fixed manufacturing overhead allocated to actual output units achieved is called the fixed overhead:

- A) efficiency variance
- B) flexible-budget variance
- C) combined-variance analysis
- D) production-volume variance

Answer: D

Diff: 1

Terms: production-volume variance

Objective: 6

AACSB: Reflective thinking

9) The production volume variance arises only for fixed costs.

Answer: TRUE

Diff: 1

Terms: production-volume variance

Objective: 6

AACSB: Ethical reasoning

10) The production-volume variance arises whenever the actual level of the denominator differs from the level used to calculate the budgeted fixed overhead rate.

Answer: TRUE

Diff: 1

Terms: production-volume variance

Objective: 6

AACSB: Reflective thinking

11) The lump sum budgeted for fixed overhead will always be the same amount for the static budget and the flexible budget.

Answer: TRUE

Diff: 2

Terms: fixed overhead flexible-budget variance

Objective: 6

AACSB: Reflective thinking

12) A favorable production-volume variance arises when manufacturing capacity planned for is NOT used.

Answer: FALSE

Explanation: An *unfavorable* production-volume variance arises when manufacturing capacity planned for is not used.

Diff: 1

Terms: production-volume variance

Objective: 6

AACSB: Reflective thinking

13) An unfavorable production-volume variance always infers that management made a bad planning decision regarding the plant capacity.

Answer: FALSE

Explanation: An unfavorable production-volume variance does not always infer that management made a bad planning decision regarding the plant capacity.

Diff: 2

Terms: production-volume variance

Objective: 6

AACSB: Ethical reasoning

14) Explain why sales-volume variance could be helpful to managers.

Answer: The sales-volume variance is comprised of the operating income volume variance and the production volume variance. The sales-volume variance is useful because it helps managers understand the significant changes in contribution margin, which will occur as a result of selling fewer (or more) units than called for by the budgeted level. It assumes that the fixed costs remain at the budgeted level and can be helpful to managers as they perform sensitivity analysis to see the effects of potential changes in sales volume (up or down). Based on this type of information, they could potentially make more informed decisions on pricing and other strategies.

Diff: 3

Terms: total-overhead variance

Objective: 6

AACSB: Reflective thinking

Objective 8.7

Answer the following questions using the information below:

Munoz, Inc., produces a special line of plastic toy racing cars. Munoz, Inc., produces the cars in batches. To manufacture a batch of the cars, Munoz, Inc., must set up the machines and molds. Setup costs are batch-level costs because they are associated with batches rather than individual units of products. A separate Setup Department is responsible for setting up machines and molds for different styles of car.

Setup overhead costs consist of some costs that are variable and some costs that are fixed with respect to the number of setup-hours. The following information pertains to June 2011:

	Actual <u>Amounts</u>	Static-budget <u>Amounts</u>
Units produced and sold	15,000	11,250
Batch size (number of units per batch)	250	225
Setup-hours per batch	5	5.25
Variable overhead cost per setup-hour	\$40	\$38
Total fixed setup overhead costs	\$12,000	\$9,975

1) Calculate the efficiency variance for variable setup overhead costs.

- A) \$1,900 unfavorable
- B) \$600 unfavorable
- C) \$1,900 favorable
- D) \$600 favorable

Answer: C

Explanation: C) $\{[(15,000 / 250) \times 5] - [(15,000 / 225) \times 5.25]\} \times \$38 = \$1,900$ (F)

Diff: 3

Terms: variable overhead efficiency variance

Objective: 7

AACSB: Analytical skills

2) Calculate the spending variance for variable setup overhead costs.

- A) \$1,900 unfavorable
- B) \$1,900 favorable
- C) \$600 unfavorable
- D) \$600 favorable

Answer: C

Explanation: C) $(15,000 / 250) \times 5 \times (\$38 - \$40) = \600 (U)

Diff: 3

Terms: variable overhead spending variance

Objective: 7

AACSB: Analytical skills

3) Calculate the flexible-budget variance for variable setup overhead costs.

- A) \$600 favorable
- B) \$1,300 favorable
- C) \$600 unfavorable
- D) \$1,300 unfavorable

Answer: B

Explanation: B) $\$1,900 (F) - \$600 (U) = \$1,300 (F)$

Diff: 3

Terms: variable overhead flexible-budget variance

Objective: 7

AACSB: Analytical skills

4) Calculate the spending variance for fixed setup overhead costs.

- A) \$3,200 unfavorable
- B) \$400 unfavorable
- C) \$3,600 unfavorable
- D) \$400 favorable

Answer: B

Explanation: B) $\$14,000 - \$14,400 = \$400 (U)$

Diff: 3

Terms: fixed overhead spending variance

Objective: 7

AACSB: Analytical skills

5) Calculate the production-volume variance for fixed setup overhead costs.

- A) \$4,666.67 unfavorable
- B) \$400 unfavorable
- C) \$4,666.67 favorable
- D) \$400 favorable

Answer: C

Explanation: C) Normal setup hours = $(11,250 / 225) \times 5.25 = 262.5$ hours

OH rate = $\$14,000 / 262.5 = \53.33 per setup hour

$[(15,000 / 225) \times 5.25 \times \$53.33] - \$14,000 = \$4,666.67$ favorable

Diff: 3

Terms: production-volume variance

Objective: 7

AACSB: Analytical skills

Answer the following questions using the information below:

Lukehart Industries, Inc., produces air purifiers. Lukehart, Inc., produces the air purifiers in batches. To manufacture a batch of the purifiers, Lukehart, Inc., must set up the machines and assembly line tooling. Setup costs are batch-level costs because they are associated with batches rather than individual units of products. A separate Setup Department is responsible for setting up machines and tooling for different models of the air purifiers.

Setup overhead costs consist of some costs that are variable and some costs that are fixed with respect to the number of setup-hours. The following information pertains to June 2011:

	Budget	Actual
	<u>Amounts</u>	<u>Amounts</u>
Units produced and sold	10,000	9,000
Batch size (number of units per batch)	400	375
Setup-hours per batch	6	5.5
Variable overhead cost per setup-hour	\$50	\$52
Total fixed setup overhead costs	\$18,000	\$17,750

6) Calculate the efficiency variance for variable setup overhead costs.

- A) \$150 favorable
- B) \$114 favorable
- C) \$264 unfavorable
- D) \$264 favorable

Answer: A

Explanation: A) $\{[(9,000 / 375) \times 5.5] - [(9,000 / 400) \times 6]\} \times \$50 = \$150$ (F)

Diff: 3

Terms: variable overhead efficiency variance

Objective: 7

AACSB: Analytical skills

7) Calculate the spending variance for variable setup overhead costs.

- A) \$150 unfavorable
- B) \$150 favorable
- C) \$264 unfavorable
- D) \$264 favorable

Answer: C

Explanation: C) $(9,000 / 375) \times 5.5 \times (\$50 - \$52) = \264 (U)

Diff: 3

Terms: variable overhead spending variance

Objective: 7

AACSB: Analytical skills

8) Calculate the flexible-budget variance for variable setup overhead costs.

- A) \$114 favorable
- B) \$264 favorable
- C) \$264 unfavorable
- D) \$114 unfavorable

Answer: D

Explanation: D) $\$150 (F) - \$264 (U) = \$114 (U)$

Diff: 3

Terms: variable overhead flexible-budget variance

Objective: 7

AACSB: Analytical skills

9) Calculate the spending variance for fixed setup overhead costs.

- A) \$250 unfavorable
- B) \$150 unfavorable
- C) \$250 favorable
- D) \$150 favorable

Answer: C

Diff: 3

Terms: fixed overhead spending variance

Objective: 7

AACSB: Analytical skills

10) Calculate the production-volume variance for fixed setup overhead costs.

- A) \$1,800 favorable
- B) \$1,800 unfavorable
- C) \$250 unfavorable
- D) \$250 favorable

Answer: B

Explanation: B) Normal setup hours = $(10,000 / 400) \times 6 = 150$ hours

OH rate = $\$18,000 / 150 = \120.00 per setup hour

$[(9,000 / 400) \times 6 \times \$120] - \$18,000 = \$1,800$ unfavorable

Diff: 3

Terms: production-volume variance

Objective: 7

AACSB: Analytical skills

11) Fixed and variable cost variances can _____ be applied to activity-based costing systems.

- A) always
- B) most times
- C) seldom
- D) never

Answer: A

Diff: 1

Terms: total-overhead variance

Objective: 7

AACSB: Analytical skills

12) Variance analysis of fixed overhead costs is also useful when a company uses activity-based costing.

Answer: TRUE

Diff: 1

Terms: total-overhead variance

Objective: 7

AACSB: Reflective thinking

13) A favorable fixed setup overhead spending variance could be due to higher lease costs of new setup equipment.

Answer: FALSE

Explanation: An unfavorable fixed setup overhead spending variance could be due to higher lease costs of new setup equipment.

Diff: 2

Terms: fixed overhead spending variance

Objective: 7

AACSB: Reflective thinking

14) An unfavorable variable setup overhead efficiency variance could be due to actual setup-hours exceeding the setup-hours planned for the units produced.

Answer: TRUE

Diff: 2

Terms: variable overhead efficiency variance

Objective: 7

AACSB: Reflective thinking

15) Casey Corporation produces a special line of basketball hoops. Casey Corporation produces the hoops in batches. To manufacture a batch of the basketball hoops, Casey Corporation must set up the machines and molds. Setup costs are batch-level costs because they are associated with batches rather than individual units of products. A separate Setup Department is responsible for setting up machines and molds for different styles of basketball hoops.

Setup overhead costs consist of some costs that are variable and some costs that are fixed with respect to the number of setup-hours. The following information pertains to January 2005.

	Static-budget Amounts	Actual Amounts
Basketball hoops produced and sold	30,000	28,000
Batch size (number of units per batch)	200	250
Setup-hours per batch	5	4
Variable overhead cost per setup hour	\$10	\$9
Total fixed setup overhead costs	\$22,500	\$21,000

Required:

- Calculate the efficiency variance for variable setup overhead costs.
- Calculate the spending variance for variable setup overhead costs.
- Calculate the flexible-budget variance for variable setup overhead costs.
- Calculate the spending variance for fixed setup overhead costs.
- Calculate the production-volume variance for fixed setup overhead costs.

Answer:

a. $((28,000 / 250) \times 4 \times \$10) - (28,000 / 200) \times 5 \times \$10 = \$2,520$ (F)

b. $(28,000 / 250) \times 4 \times (\$9 - \$10) = \448 (F)

c. $\$2,520$ (F) + $\$448$ (F) = $\$2,968$ (F)

d. $\$22,500 - \$21,000 = \$1,500$ (F)

e. Normal setup-hours = $(30,000 / 200) \times 5 = 750$ hours

OH rate = $\$22,500 / 750 = \30 per setup-hour

$\$22,500 - ((28,000 / 200) \times 5 \times \$30) = \$1,500$ (U)

Diff: 3

Terms: variable overhead efficiency/spending var, fixed overhead spending/prod-vol var

Objective: 7

AACSB: Analytical skills