

1.

value:
10.00 points

Order Up, Inc., provides order fulfillment services for dot.com merchants. The company maintains warehouses that stock items carried by its dot.com clients. When a client receives an order from a customer, the order is forwarded to Order Up, which pulls the item from storage, packs it, and ships it to the customer. The company uses a predetermined variable overhead rate based on direct labor-hours.

In the most recent month, 140,000 items were shipped to customers using 5,800 direct labor-hours. The company incurred a total of \$15,950 in variable overhead costs.

According to the company's standards, 0.04 direct labor-hours are required to fulfill an order for one item and the variable overhead rate is \$2.80 per direct labor-hour.

Required:

1a. According to the standards, what variable overhead cost should have been incurred to fill the orders for the 140,000 items? **(Omit the "\$" sign in your response.)**

Total standard variable overhead cost \$

1b. How much does this differ from the actual variable overhead cost? **(Input the amount as a positive value. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Spending variance \$

2. Break down the difference computed in (1) above into a variable overhead rate variance and a variable overhead efficiency variance. **(Do not round intermediate calculations. Input all amounts as positive values. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Variable overhead rate variance	\$	<input type="text" value="290"/>	<input type="text" value="F"/>
Variable overhead efficiency variance	\$	<input type="text" value="560"/>	<input type="text" value="U"/>

2.

value:
10.00 points

AirMeals, Inc., prepares in-flight meals for a number of major airlines. One of the company's products is stuffed cannelloni with roasted pepper sauce, fresh baby corn, and spring salad. During the most recent week, the company prepared 6,000 of these meals using 1,150 direct labor-hours. The company paid these direct labor workers a total of \$11,500 for this work, or \$10 per hour.

According to the standard cost card for this meal, it should require 0.20 direct labor-hours at a cost of \$9.50 per hour.

Required:

1a. According to the standards, what direct labor cost should have been incurred to prepare 6,000 meals? **(Omit the "\$" sign in your response.)**

Total standard direct labor cost	\$	<input type="text" value="11400"/>
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1b. How much does this differ from the actual direct labor cost? **(Input the amount as a positive value. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Spending variance	\$	<input type="text" value="100"/>	<input type="text" value="U"/>
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2. Break down the difference computed in (1) above into a labor rate variance and a labor efficiency variance. **(Input all amounts as positive values. Do not round intermediate calculations. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Labor rate variance	\$	<input type="text" value="575"/>	<input type="text" value="U"/>
Labor efficiency variance	\$	<input type="text" value="475"/>	<input type="text" value="F"/>

3.

value:
10.00 points

The Worldwide Credit Card, Inc., uses standards to control the labor time involved in opening mail from card holders and recording the enclosed remittances. Incoming mail is gathered into batches, and a standard time is set for opening and recording each batch. The labor standards relating to one batch are as follows:

	Standard Hours	Standard Rate	Standard Cost
Per batch	1.25	\$12.00	\$15.00

The record showing the time spent last week in opening batches of mail has been misplaced. However, the batch supervisor recalls that 168 batches were received and opened during the week, and the controller recalls the following variance data relating to these batches:

Total labor spending variance	\$330 U
Labor rate variance	\$150 F

Required:

- Determine the number of actual labor-hours spent opening batches during the week.

Actual labor hours hours

- Determine the actual hourly rate paid to employees for opening batches last week. **(Round your answer to 2 decimal places. Omit the "\$" sign in your response.)**

Actual hourly rate \$ per hour

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"What's going on in that lab?" asked Derek Warren, chief administrator for Cottonwood Hospital, as he studied the prior month's reports. "Every month the lab teeters between a profit and a loss. Are we going to have to increase our lab fees again?"

"We can't," replied Lois Ankers, the controller. "We're getting lots of complaints about the last increase, particularly from the insurance companies and governmental health units. They're now paying only about 80% of what we bill. I'm beginning to think the problem is on the cost side."

To determine if lab costs are in line with other hospitals, Mr. Warren has asked you to evaluate the costs for the past month. Ms. Ankers has provided you with the following information:

- Two basic types of tests are performed in the lab—smears and blood tests. During the past month, 2,700 smears and 900 blood tests were performed in the lab.
- Small glass plates are used in both types of tests. During the past month, the hospital purchased 16,000 plates at a cost of \$38,400. This cost is net of a 4% purchase discount. A total of 2,000 of these plates were unused at the end of the month; no plates were on hand at the beginning of the month.
- During the past month, 1,800 hours of labor time were used in performing smears and blood tests. The cost of this labor time was \$18,450.
- The lab's variable overhead cost last month totaled \$11,700.

Cottonwood Hospital has never used standard costs. By searching industry literature, however, you have determined the following nationwide averages for hospital labs:

Plates: Three plates are required per lab test. These plates cost \$2.50 each and are disposed of after the test is completed.

Labor: Each smear should require 0.3 hours to complete, and each blood test should require 0.6 hours to complete. The average cost of this lab time is \$12 per hour.

Overhead: Overhead cost is based on direct labor-hours. The average rate of variable overhead is \$6 per hour.

Required:

- Compute the materials price variance for the plates purchased last month, and compute a materials quantity variance for the plates used last month. **(Input all amounts as positive values. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Materials price variance	\$	1600	F
Materials quantity variance	\$	8000	U

- For labor cost in the lab:

- Compute a labor rate variance and a labor efficiency variance. **(Input all amounts as positive values. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Labor rate variance	\$	3150	F
Labor efficiency variance	\$	5400	U

- In most hospitals, three-fourths of the workers in the lab are certified technicians and one-fourth are assistants. In an effort to reduce costs, Cottonwood Hospital employs only one-half certified technicians and one-half assistants. Would you recommend that this policy be continued?

- Yes
 No

- Compute the variable overhead rate and efficiency variances. **(Input all amounts as positive values. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Variable overhead rate variance	\$	900	U
Variable overhead efficiency variance	\$	2700	U

- Is there any relation between the variable overhead efficiency variance and the labor efficiency variance?

- Yes
 No

5.

value:
10.00 points

Sonne Company produces a perfume called Whim. The direct materials and direct labor standards for one bottle of Whim are given below:

	Standard Quantity or Hours	Standard Price or Rate	Standard Cost
Direct materials	7.2 ounces	\$ 2.50 per ounce	\$18.00
Direct labor	0.4 hours	\$10.00 per hour	\$ 4.00

During the most recent month, the following activity was recorded:

- Twenty thousand ounces of material were purchased at a cost of \$2.40 per ounce.
- All of the material was used to produce 2,500 bottles of Whim.
- Nine hundred hours of direct labor time were recorded at a total labor cost of \$10,800.

Required:

- Compute the direct materials price and quantity variances for the month. **(Input all amounts as positive values. Do not round your per unit rates. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Direct materials price variance	\$	<input type="text" value="2000"/>	<input type="text" value="F"/>
Direct materials quantity variances	\$	<input type="text" value="5000"/>	<input type="text" value="U"/>

- Compute the direct labor rate and efficiency variances for the month. **(Input all amounts as positive values. Do not round your per unit rates. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Direct labor rate variance	\$	<input type="text" value="1800"/>	<input type="text" value="U"/>
Direct labor efficiency variances	\$	<input type="text" value="1000"/>	<input type="text" value="F"/>



6.

value:
10.00 points

Harmon Household Products, Inc., manufactures a number of consumer items for general household use. One of these products, a chopping board, requires an expensive hardwood. During a recent month, the company manufactured 4,000 chopping boards using 11,000 board feet of hardwood. The hardwood cost the company \$18,700.

The company's standards for one chopping board are 2.5 board feet of hardwood, at a cost of \$1.80 per board foot.

Required:

- 1a. According to the standards, what cost for wood should have been incurred to make 4,000 chopping blocks? **(Omit the "\$" sign in your response.)**

Total standard cost	\$	<input type="text" value="18000"/>
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- 1b. How much greater or less is this than the cost that was incurred? **(Input the amount as a positive value. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Spending variance	\$	<input type="text" value="700"/>	<input type="text" value="U"/>
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2. Break down the difference computed in (1) above into a materials price variance and a materials quantity variance. **(Input all amounts as positive values. Do not round intermediate calculations. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Materials price variance	\$	<input type="text" value="1100"/>	<input type="text" value="F"/>
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Materials quantity variance	\$	<input type="text" value="1800"/>	<input type="text" value="U"/>
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7.

value:
10.00 points

Hollowell Audio, Inc., manufactures military-specification compact discs. The company uses standards to control its costs. The labor standards that have been set for one disc are as follows:

Standard Hours	Standard Rate	Standard Cost
6 minutes	\$24.00	\$2.40

During July, 2,125 hours of direct labor time were required to make 20,000 discs. The direct labor cost totaled \$49,300 for the month.

Required:

- 1a. According to the standards, what direct labor cost should have been incurred to make the 20,000 discs? **(Do not round intermediate calculations. Omit the "\$" sign in your response.)**

Total standard direct labor cost	\$	<input type="text" value="48000"/>
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- 1b. By how much does this differ from the cost that was incurred? **(Input the amount as a positive value. Do not round intermediate calculations. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Spending variance	\$	<input type="text" value="1300"/>	<input type="text" value="U"/>
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2. Break down the difference in cost from (1) above into a labor rate variance and a labor efficiency variance. **(Input all amounts as positive values. Do not round intermediate calculations. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Labor rate variance	\$	<input type="text" value="1700"/>	<input type="text" value="F"/>
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Labor efficiency variance	\$	<input type="text" value="3000"/>	<input type="text" value="U"/>
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3. The budgeted variable manufacturing overhead rate is \$16.00 per direct labor-hour. During July, the company incurred \$39,100 in variable manufacturing overhead cost. Compute the variable overhead rate and efficiency variances for the month. **(Input all amounts as positive values. Do not round intermediate calculations. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)**

Variable overhead rate variance	\$	<input type="text" value="5100"/>	<input type="text" value="U"/>
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Variable overhead efficiency variance	\$	<input type="text" value="2000"/>	<input type="text" value="U"/>
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8.

value:
10.00 points

Portland Company's Ironton Plant produces precast ingots for industrial use. Carlos Santiago, who was recently appointed general manager of the Ironton Plant, has just been handed the plant's contribution format income statement for October. The statement is shown below:

	Budgeted	Actual
Sales (5,000 ingots)	\$250,000	\$250,000
Variable expenses:		
Variable cost of goods sold*	80,000	96,390
Variable selling expenses	20,000	20,000
Total variable expenses	100,000	116,390
Contribution margin	150,000	133,610
Fixed expenses:		
Manufacturing overhead	60,000	60,000
Selling and administrative	75,000	75,000
Total fixed expenses	135,000	135,000
Net operating income (loss)	\$ 15,000	\$ (1,390)

*Contains direct materials, direct labor, and variable manufacturing overhead.

Mr. Santiago was shocked to see the loss for the month, particularly because sales were exactly as budgeted. He stated, "I sure hope the plant has a standard cost system in operation. If it doesn't, I won't have the slightest idea of where to start looking for the problem."

The plant does use a standard cost system, with the following standard variable cost per ingot:

	Standard Quantity or Hours	Standard Price or Rate	Standard Cost
Direct materials	4.0 pounds	\$2.50 per pound	\$ 10.00
Direct labor	0.6 hours	\$9.00 per hour	5.40
Variable manufacturing overhead	0.3 hours*	\$2.00 per hour	0.60
Total standard variable cost			\$ 16.00

*Based on machine-hours.

During October the plant produced 5,000 ingots and incurred the following costs:

- Purchased 25,000 pounds of materials at a cost of \$2.95 per pound. There were no raw materials in inventory at the beginning of the month.
- Used 19,800 pounds of materials in production. (Finished goods and work in process inventories are insignificant and can be ignored.)
- Worked 3,600 direct labor-hours at a cost of \$8.70 per hour.
- Incurred a total variable manufacturing overhead cost of \$4,320 for the month. A total of 1,800 machine-hours was recorded.

It is the company's policy to close all variances to cost of goods sold on a monthly basis.

Required:

1. Compute the following variances for October:

- a. Direct materials price and quantity variances. (Input all amounts as positive values. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)

Materials price variance	\$	<input type="text" value="11250"/>	<input type="text" value="U"/>
Materials quantity variance	\$	<input type="text" value="500"/>	<input type="text" value="F"/>

- b. Direct labor rate and efficiency variances. (Input all amounts as positive values. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)

Labor rate variance	\$	<input type="text" value="1080"/>	<input type="text" value="F"/>
Labor efficiency variance	\$	<input type="text" value="5400"/>	<input type="text" value="U"/>

- c. Variable overhead rate and efficiency variances. (Input all amounts as positive values. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)

Variable overhead rate variance	\$	<input type="text" value="720"/>	<input type="text" value="U"/>
Variable overhead efficiency variance	\$	<input type="text" value="600"/>	<input type="text" value="U"/>

- 2a. Summarize the variances that you computed in (1) above by showing the net overall favorable or unfavorable variance for October. (Input the amount as a positive value. Leave no cells blank - be certain to enter "0" wherever required. Indicate the effect of each variance by selecting "F" for favorable, "U" for unfavorable, and "None" for no effect (i.e., zero variance). Omit the "\$" sign in your response.)

Net variance	\$	<input type="text" value="16390"/>	<input type="text" value="U"/>
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3. Pick out the two most significant variances that you computed in (1) above. (You may select more than one answer. Single click the box with the question mark to produce a check mark for a correct answer and double click the box with the question mark to empty the box for a wrong answer.)

- Materials price variance
- Materials quantity variance
- Variable overhead efficiency variance
- Labor rate variance
- Variable overhead rate variance
- Labor efficiency variance

Score:

80 out of 80 points (100%)