

Standard Costing Practice Problems

1. ABC Company manufactures sporting equipment. One of the company's products, a football helmet, requires a special plastic. During 2010, the company manufactured 35,000 helmets using 22,500 pounds of plastic. The company had purchased 25,000 pounds of plastic during the year, paying a total of \$190,000. According to the standard cost card, each helmet should require 0.6 pounds of plastic, at a cost of \$8 per pound.

REQUIRED: Calculate the direct material price variance and the direct material quantity variance

2. Food Company prepares in-flight meals for a number of major airlines. One of the company's products is grilled salmon with mashed potatoes and spring vegetables. During the most recent week, the company prepared 4,000 of these meals using 960 direct labor hours. The company paid these direct labor workers \$10 per hour for this work. According to the standard cost card, each meal should require 0.25 direct labor hours at a cost of \$9.75 per hour.

REQUIRED: Calculate the direct labor rate variance and the direct labor efficiency variance

3. Betty DeRose, Inc. provides order fulfillment services for dot.com merchants. The company has warehouses that stock items carried by its clients. When a client receives an order from a customer, the order is forwarded to Betty DeRose, which pulls the item from storage, packs it, and ships it to the customer. Betty DeRose, Inc. uses a pre-determined variable overhead rate based on direct labor hours. During October, 120,000 items were shipped to customers using 2,300 direct labor hours. The company incurred a total of \$7,360 in variable overhead costs. According to the company's standards, 0.02 direct labor hours are required to fulfill an order for one item and the variable overhead rate is \$3.25 per direct labor hour.

REQUIRED: Calculate the variable overhead spending variance and the variable overhead efficiency variance

4. Able Company produces a commercial cleaning compound. The direct materials and direct labor standards for one unit of this compound are given below:

	Standard quantity/hours	Standard price/rate
direct materials	4.6 pounds	\$2.50 per pound
direct labor	0.2 hours	\$12 per hour

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

- a. 20,000 pounds of direct materials were purchased at a cost of \$2.35 per pound
- b. 14,750 pounds of direct materials were used to make 3,000 units of the compound
- c. 750 hours of direct labor time were recorded at a total cost of \$10,425

- REQUIRED:**
- (a) Calculate the direct material price and quantity variances
 - (b) Calculate the direct labor rate and efficiency variances

5. Quality Motor Company uses standard costing to control the labor time and labor cost in its repair shop. The labor standards for a motor tune-up are given below:

Job	Standard hours	Standard rate
motor tune-up	2.5 hours	\$9.00 per hour

The record showing the time spent in the shop last week on motor tune-ups has been misplaced. However, the shop supervisor recalls that 50 tune-ups were completed during the week, and the controller recalls the following variances relating to tune-ups:

direct labor rate variance: \$87 favorable
total direct labor variance: \$93 unfavorable

- REQUIRED:**
- (a) Calculate the number of actual labor hours spent on tune-ups during the week
 - (b) Calculate the actual rate of pay per hour for tune-ups last week

6. Erie Company manufactures a small cd player. The following direct labor and variable overhead standards have been set for one cd player:

	Standard hours	Standard rate
direct labor	18 minutes	\$12.00 per hour
variable overhead	18 minutes	\$4.00 per hour

During November, 5,750 hours of direct labor time were needed to make 20,000 cd players. The direct labor cost for November totaled \$73,600 and the company incurred \$21,850 in variable overhead cost for the month.

- REQUIRED:**
- (a) Calculate the direct labor rate and efficiency variances
 - (b) Calculate the variable overhead spending and efficiency variances

7. Jackson Company produces a toy called the Maze. The company has recently established a standard cost system to help control costs and has established the following standards for each toy:

	Standard quantity/hours	Standard price/rate
direct materials	6 pounds	\$0.50 per pound
direct labor	1.3 hours	\$8 per hour

During April, the company produced 3,000 toys. Production data related to the maze for April is given below:

direct materials: 25,000 pounds were purchased at a cost of \$0.48 per pound. 5,000 of these pounds were still in inventory at the end of April

direct labor: 4,000 direct labor hours were worked at a cost of \$36,000

- REQUIRED:**
- (a) Calculate the following variances for April:
 - i. direct material price and quantity variances
 - ii. direct labor rate and efficiency variances
 - (b) Provide a brief explanation for the possible causes of each variance

8. Sharp Company manufactures a product for which the following standards have been set:

	Standard quantity/hours	Standard price/rate
direct materials	3 feet	\$5.00 per foot
direct labor	? hours	? per hour

During March, the company purchased direct materials at a cost of \$55,650, all of which were used in the production of 3,200 units of product. In addition, 4,900 hours of direct labor time were worked on the product during the month. The cost of this labor time was \$36,750. The following variances were calculated for the month:

direct material quantity variance: \$4,500 unfavorable
total direct labor variance: \$1,650 favorable
direct labor efficiency variance: \$800 unfavorable

- REQUIRED:**
- (a) For direct materials:
 - i. Calculate the actual cost per foot for materials for March
 - ii. Calculate the direct material price variance
 - (b) For direct labor:
 - i. Calculate the standard direct labor rate per hour
 - ii. Calculate the standard direct labor hours per unit

9. Zoey Company manufactures various chemical compounds for industrial use. One compound, called Lorex, is prepared using an elaborate distilling process. The company has developed standard costs for one unit of Lorex as follows:

	Standard quantity/hours	Standard price/rate
direct materials	2.5 ounces	\$20.00 per ounce
direct labor	1.4 hours	\$12.50 per hour
variable overhead	1.4 hours	\$3.50 per hour

During January, the following activity was recorded relative to the production of Lorex:

- a. Direct materials purchased, 12,000 ounces at a cost of \$225,000.
- b. There was no beginning inventory of direct materials; however, at the end of January, 2,500 ounces of direct materials remained in inventory.
- c. The company employs 35 lab technicians to work on the production of Lorex. During January, they worked an average of 160 hours per technician at an average rate of \$12 per hour.
- d. Variable manufacturing overhead is assigned to Lorex on the basis of direct labor hours. Variable overhead costs during January totaled \$18,200.
- e. During January, 3,750 units of Lorex were produced

REQUIRED:

- (a) For direct materials:
 - i. Calculate the direct material price and quantity variances
 - ii. The direct materials were purchased from a new supplier who is anxious to enter into a long-term purchase contract with Zoey Company. Would you recommend that the company sign the contract? Explain your answer.
- (b) For direct labor:
 - i. Calculate the direct labor rate and efficiency variances
 - ii. In the past, the 35 technicians employed in the production of Lorex consisted of 20 senior technicians and 15 assistants. During January, the company experimented with fewer senior Technicians and more assistants in order to save costs. Would you recommend that the new labor mix be continued? Explain your answer.
- (c) Calculate the variable overhead spending and efficiency variances