DO IT!

Standard Costs

Action Plan

- ✔ Know that standard costs are predetermined unit costs.
- ✔ To establish the standard cost of producing a product, establish the standard for each manufacturing cost element—direct materials, direct labor, and manufacturing overhead.
- ✔ Compute the standard cost for each element from the standard price to be paid and the standard quantity to be used.

Ridette Inc. accumulated the following standard cost data concerning product Cty31.

Direct materials per unit: 1.5 pounds at $4 per pound
Direct labor per unit: 0.25 hours at $13 per hour.
Manufacturing overhead: predetermined rate is 120% of direct labor cost.

Compute the standard cost of one unit of product Cty31.

Solution

Manufacturing Cost Element	Standard Quantity	×	Standard Price	=	Standard Cost
Direct materials	1.5 pounds		$4.00		$ 6.00
Direct labor	0.25 hours		$13.00		3.25
Manufacturing overhead	120% of direct labor cost		$3.25		3.90
Total					$13.15

Related exercise material: **BE11-2, BE11-3, E11-1, E11-2, E11-3, and DO IT! 11-1.**

DO IT!

Direct Materials Variances

Action Plan

Use the formulas for computing each of the materials variances:

- ✔ Total materials variance = (AQ × AP) − (SQ × SP)
- ✔ Materials price variance = (AQ × AP) − (AQ × SP)
- ✔ Materials quantity variance = (AQ × SP) − (SQ × SP)

The standard cost of Wonder Walkers includes two units of direct materials at $8.00 per unit. During July, the company buys 22,000 units of direct materials at $7.50 and uses those materials to produce 10,000 Wonder Walkers. Compute the total, price, and quantity variances for materials.

Solution

Standard quantity = 10,000 × 2.
Substituting amounts into the formulas, the variances are:

Total materials variance = (22,000 × $7.50) − (20,000 × $8.00) = $5,000 unfavorable
Materials price variance = (22,000 × $7.50) − (22,000 × $8.00) = $11,000 favorable
Materials quantity variance = (22,000 × $8.00) − (20,000 × $8.00) = $16,000 unfavorable

Related exercise material: **BE11-4, E11-5, and DO IT! 11-2.**

> DO IT!

Labor and Manufacturing Overhead Variances

The standard cost of Product YY includes three hours of direct labor at $12.00 per hour. The predetermined overhead rate is $20.00 per direct labor hour. During July, the company incurred 3,500 hours of direct labor at an average rate of $12.40 per hour and $71,300 of manufacturing overhead costs. It produced 1,200 units.

(a) Compute the total, price, and quantity variances for labor. (b) Compute the total overhead variance.

Action Plan

✔ Use the formulas for computing each of the variances:
Total labor variance = (AH × AR) − (SH × SR)
Labor price variance = (AH × AR) − (AH × SR)
Labor quantity variance = (AH × SR) − (SH × SR)
Total overhead variance = Actual overhead − Overhead applied*

*Based on standard hours allowed.

Solution

Substituting amounts into the formulas, the variances are:

Total labor variance = (3,500 × $12.40) − (3,600 × $12.00) = $200 unfavorable
Labor price variance = (3,500 × $12.40) − (3,500 × $12.00) = $1,400 unfavorable
Labor quantity variance = (3,500 × $12.00) − (3,600 × $12.00) = $1,200 favorable
Total overhead variance = $71,300 − $72,000* = $700 favorable

*3,600 hours × $20.00

Related exercise material: **BE11-5, BE11-6, E11-4, E11-6, E11-7, E11-8, E11-11, and DO IT! 11-3.**

> DO IT!

Balanced Scorecard

Indicate which of the four perspectives in the balanced scorecard is most likely associated with the objectives that follow.

1. Percentage of repeat customers.
2. Number of suggestions for improvement from employees.
3. Contribution margin.
4. Brand recognition.
5. Number of cross-trained employees.
6. Amount of setup time.

Action Plan

✔ The financial perspective employs traditional financial measures of performance.

✔ The customer perspective evaluates company performance as seen by the people who buy its products or services.

✔ The internal process perspective evaluates the internal operating processes critical to success.

✔ The learning and growth perspective evaluates how well the company develops and retains its employees.

Solution

1. Customer perspective.
2. Learning and growth perspective.
3. Financial perspective.
4. Customer perspective.
5. Learning and growth perspective.
6. Internal process perspective.

Related exercise material: **BE11-7, E11-17, and DO IT! 11-4.**

Comprehensive DO IT!

Manlow Company makes a cologne called Allure. The standard cost for one bottle of Allure is as follows.

Manufacturing Cost Elements	Standard Quantity	×	Price	=	Cost
Direct materials	6 oz.	×	$ 0.90	=	$ 5.40
Direct labor	0.5 hrs.	×	$12.00	=	6.00
Manufacturing overhead	0.5 hrs.	×	$ 4.80	=	2.40
					$13.80

During the month, the following transactions occurred in manufacturing 10,000 bottles of Allure.

1. 58,000 ounces of materials were purchased at $1.00 per ounce.
2. All the materials purchased were used to produce the 10,000 bottles of Allure.
3. 4,900 direct labor hours were worked at a total labor cost of $56,350.
4. Variable manufacturing overhead incurred was $15,000 and fixed overhead incurred was $10,400.

The manufacturing overhead rate of $4.80 is based on a normal capacity of 5,200 direct labor hours. The total budget at this capacity is $10,400 fixed and $14,560 variable.

Instructions

(a) Compute the total variance and the variances for direct materials and direct labor elements.

(b) Compute the total variance for manufacturing overhead.

Solution to Comprehensive DO IT!

Action Plan

- ✔ Check to make sure the total variance and the sum of the individual variances are equal.
- ✔ Find the price variance first, then the quantity variance.
- ✔ Base budgeted overhead costs on flexible budget data.
- ✔ Base overhead applied on standard hours allowed.
- ✔ Ignore actual hours worked in computing overhead variances.

(a)

Total Variance

Actual costs incurred	
Direct materials	$ 58,000
Direct labor	56,350
Manufacturing overhead	25,400
	139,750
Standard cost (10,000 × $13.80)	138,000
Total variance	$ 1,750 U

Direct Materials Variances

Total	=	$58,000 (58,000 × $1.00)	−	$54,000 (60,000 × $0.90)	=	$4,000 U
Price	=	$58,000 (58,000 × $1.00)	−	$52,200 (58,000 × $0.90)	=	$5,800 U
Quantity	=	$52,200 (58,000 × $0.90)	−	$54,000 (60,000 × $0.90)	=	$1,800 F

Direct Labor Variances

Total	=	$56,350 (4,900 × $11.50)	−	$60,000 (5,000 × $12.00)	=	$3,650 F
Price	=	$56,350 (4,900 × $11.50)	−	$58,800 (4,900 × $12.00)	=	$2,450 F
Quantity	=	$58,800 (4,900 × $12.00)	−	$60,000 (5,000 × $12.00)	=	$1,200 F

(b)

Overhead Variance

Total	=	$25,400 ($15,000 + $10,400)	−	$24,000 (5,000 × $4.80)	=	$1,400 U

DO IT! REVIEW

Compute standard cost.
(LO 3), AP

DO IT! 11-1 Jacque Company accumulated the following standard cost data concerning product I-Tal.

Direct materials per unit: 2 pounds at $5 per pound
Direct labor per unit: 0.2 hours at $15 per hour
Manufacturing overhead: Predetermined rate is 125% of direct labor cost

Compute the standard cost of one unit of product I-Tal.

Compute materials variance.
(LO 4), AP

DO IT! 11-2 The standard cost of product 777 includes 2 units of direct materials at $6.00 per unit. During August, the company bought 29,000 units of materials at $6.30 and used those materials to produce 16,000 units. Compute the total, price, and quantity variances for materials.

Compute labor and manufacturing overhead variances.
(LO 4, 5), AP

DO IT! 11-3 The standard cost of product 5252 includes 1.9 hours of direct labor at $14.00 per hour. The predetermined overhead rate is $22.00 per direct labor hour. During July, the company incurred 4,100 hours of direct labor at an average rate of $14.30 per hour and $81,300 of manufacturing overhead costs. It produced 2,000 units.

(a) Compute the total, price, and quantity variances for labor. (b) Compute the total overhead variance.

Match balance scorecard perspectives and their objectives.
(LO 8), C

DO IT! 11-4 Indicate which of the four perspectives in the balanced scorecard is most likely associated with the objectives that follow.

1. Ethics violations.
2. Credit rating.
3. Customer retention.
4. Stockouts.
5. Reportable accidents.
6. Brand recognition.