

STANDARD COSTS

- **Standard costs**:-- What the product should cost to produce.
- Standard costs useful in the control process.
- Comparison of actual to standard vital in the proper functioning of a standard cost system.
- Comparison of actual to standard involves the calculation of **variances**.
- Variance accounts with a **debit** balance are **unfavorable**;
- Variance accounts with a **credit** balance are **favorable**.

Problem Illustration**Standard cost sheet:**

Material-- 2 lbs of material A @ \$6	\$12
Labor--4 std hours @ \$10.	40

Flexible budget:

Percent of standard capacity	80%	100%	120%
units produced	8,000	10,000	12,000
indirect manufacturing costs:			
Fixed	\$ 50,000	\$ 50,000	\$50,000
Variable	72,000	90,000	108,000
Total	\$ 122,000	\$ 140,000	\$ 158,000

Actual Results

Produced	8,000 units
Material issued: Material A; 16,200 lbs @ \$6.20	\$100,440
Direct labor: 31,800 hrs @ \$10.50	\$333,900
Indirect manufacturing costs:	
Fixed	\$50,000
Variable	\$78,000
Total indirect manufacturing costs	\$128,000

- Determine the standard overhead cost per unit for both the fixed and variable components.
- Compute material and labor variances
- Compute overhead variances using two variance analysis
- Compute overhead variances using three variance

(a) Solution

Fixed overhead per direct labor hour:

Standard Fixed overhead	\$ 50,000
Number of standard direct labor hours @capacity	40,000
Fixed overhead per direct labor hour	1.25
Number of standard direct labor hours per unit	4
Fixed overhead per unit	<u>\$ 5.00</u>

Variable overhead per direct labor hour:

Standard variable overhead @ capacity	\$ 90,000
Number of standard direct labor hours @capacity	40,000
variable overhead per direct labor hour	2.25
Number of standard direct labor hours per unit	4
Variable overhead per unit	<u>\$ 9.00</u>

(b.1) **Material variances:**

total variance

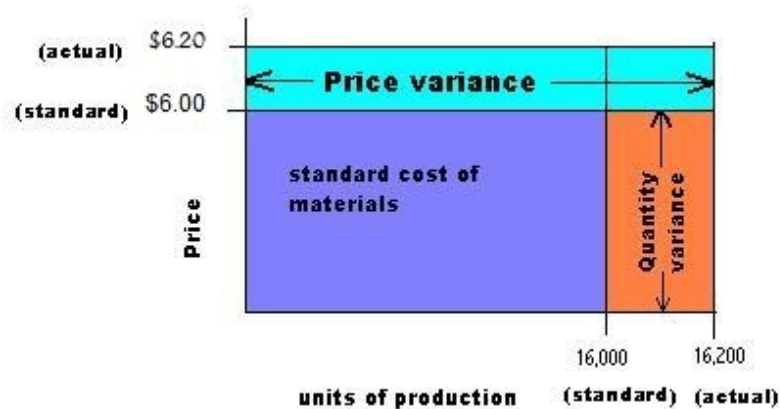
actual material costs	\$100,440	
Standard: [2 pounds x 8,000 x\$6]	96,000	
Total materials variance -unfavorable		<u>\$ 4,440</u>

Materials price variance:

Actual price	\$ 6.20	
Standard price	6.00	
	0.20	
Actual quantity (usage)	16,200	
Materials price variance		\$ 3,240

Materials Usage variance:

Actual quantity used	16,200	
Standard quantity	16,000	
	200	
Standard price	\$ 6.00	
		1,200
Materials Usage variance:		<u>\$ 4,440</u>



(b.2)

Labor variances

<i>total variance</i>		
actual labor costs	\$333,900	
Standard: [4 dlhs x 8,000 x\$10]	<u>320,000</u>	
Total labor variance -unfavorable		<u>\$ 13,900</u>
<i>Labor rate variance:</i>		
Actual rate	\$ 10.50	
Standard rate	<u>10.00</u>	
	0.50	
Actual direct labor hours	<u>31,800</u>	
Labor rate variance		\$ 15,900
<i>Labor efficiency variance:</i>		
Actual direct labor hours	31,800	
Standard direct labor hours [8,000 * \$4]	<u>32,000</u>	
	(200)	
Standard price	<u>10.00</u>	
Labor efficiency variance		<u>(2,000)</u>
Total labor variance		<u>\$ 13,900</u>

(c) Overhead variances:–2 variance analysis

total variance		
actual factory overhead	\$128,000	
Standard: [\$3.50 x 32,000]	<u>112,000</u>	
Total overhead variance -unfavorable		\$ 16,000
Controllable variance:		
Actual overhead	\$128,000	
Allowable overhead based on std dlh	<u>122,000</u>	
Controllable variance–unfavorable		6,000
Volume variance:		
Allowable overhead based on std dlh	\$122,000	
Applied to the product	<u>112,000</u>	
Volume variance-unfavorable		<u>\$ 10,000</u>

(d) Overhead variances:–3 variance analysis

total variance:		
actual factory overhead	\$128,000	
Standard: [\$3.50 x 32,000]	<u>112,000</u>	
Total overhead variance -unfavorable		<u>\$ 16,000</u>
Spending variance:		
Actual overhead	128,000	
Allowable overhead based on actual dlh	<u>121,550</u>	
Spending variance–unfavorable		6,450
Efficiency variance:		
Allowable overhead based on actual dlh	121,550	
Allowable overhead based on std dlh	<u>122,000</u>	
Volume variance-unfavorable		(450)
Volume variance:		
Allowable overhead based on std dlh	122,000	
Applied to the product	<u>112,000</u>	
Volume variance-unfavorable		10,000
Total overhead variance		<u>\$ 16,000</u>