

Exercises: Set B—Solutions

E1B. Product Costing

a.	yes	f.	no
b.	yes	g.	no
c.	yes	h.	yes
d.	no	i.	yes
e.	yes	j.	no

E2B. Costing Systems: Industry Linkage

a.	process	e.	job order
b.	process	f.	process
c.	job order	g.	process
d.	process	h.	job order

E3B. Costing Systems: Industry Linkage

a.	process	e.	process
b.	process	f.	job order
c.	job order	g.	process
d.	job order	h.	job order

E4B. Job Order Cost Flow

The cost flow of each of the three product cost elements and the Work in Process Inventory account can be described as follows:

Direct Materials. When direct materials arrive, the cost of the items is debited to the Materials Inventory account. Following a materials request, the items requested are issued to the production departments. Direct materials costs are then transferred from the Materials Inventory account to the Work in Process Inventory account. In addition, the costs of the requested materials are subtracted from the appropriate accounts in the materials subsidiary ledger and added to the appropriate job order cost cards.

Direct Labor. When incurred, direct labor costs are charged to the Work in Process Inventory account and, at the same time, to the appropriate job order cost cards.

Overhead. All overhead costs, including indirect materials and indirect labor, are charged to the Overhead account.

Overhead is applied to production using a predetermined overhead rate. Overhead applied is debited to the Work in Process Inventory account and credited to the Overhead account. Job order cost cards are updated at the same time to reflect overhead charges.

Work in Process Inventory. All product costs flow through the Work in Process Inventory account and, at the same time, are accumulated on job order cost cards. When an order is completed, its total cost (as reflected on the job order cost card) is transferred from the Work in Process Inventory account to the Finished Goods Inventory account. The job order cost card is completed, pulled from the Work in Process Inventory subsidiary ledger, and used to update the Finished Goods Inventory subsidiary ledger.

E5B. Work in Process Inventory: T Account Analysis

1.

Materials Inventory				Work in Process Inventory			
Beg. bal.	240,000	(a)	238,820	Beg. bal.	29,400		
(c)	28,400	(c)	28,400	(a)	238,820		
				(b)	88,200		
				(d)	132,300		
Overhead				Payroll Payable			
(b)	52,490	(d)*	132,300			(b)	140,690
(c)	28,400						
Accounts Payable							
		(c)	28,400				

*\$88,200 × 150% = \$132,300

2.

Work in Process Inventory account:	
Beginning balance, July 1	\$ 29,400
Debits during July:	
Direct materials	238,820
Direct labor	88,200
Overhead	<u>132,300</u>
	\$488,720
Less transfers to Finished Goods Inventory	<u>461,400</u>
Ending balance, July 31	<u>\$ 27,320</u>

E6B. T Account Analysis with Unknowns									
JUNE					JULY				
Materials Inventory					Materials Inventory				
(a) Beg. bal.	33,939		Requests:		(e) Beg. bal.	32,014		Requests:	
Purchases	57,100		Direct materials	59,025	Purchases	60,216		(g) Direct materials	64,602
End. bal.	32,014				End. bal.	27,628			
Work in Process Inventory					Work in Process Inventory				
Beg. bal.	89,605		(c) Completed	154,701	(f) Beg. bal.	101,201		Completed	231,861
Direct materials	59,025				(g) Direct materials	64,602			
Direct labor	48,760				Direct labor	54,540			
(b) Overhead	58,512 *				(h) Overhead	65,448 **			
(d) End. bal.	101,201				(j) End. bal.	53,930			
Finished Goods Inventory					Finished Goods Inventory				
Beg. bal.	79,764		Cost of goods sold	166,805	Beg. bal.	67,660		(i) Cost of goods sold	269,006
(c) Completed during period	154,701				Completed during period	231,861			
End. bal.	67,660				End. bal.	30,515			
* $\$48,760 \times 120\% = \$58,512$									
** $\$54,540 \times 120\% = \$65,448$									

E7B. T Account Analysis with Unknowns				
Materials Inventory				
Beg. bal.	42,000		Used	168,000
(a) Purchases	164,000			
End. bal.	38,000			
Work in Process Inventory				
Beg. bal.	66,000		(c) Completed during period	783,000
Direct materials	168,000			
Direct labor	382,000			
(b) Overhead applied	305,600 *			
End. bal.	138,600			
Finished Goods Inventory				
Beg. bal.	129,000		Cost of goods sold	808,000
(c) Completed during period	783,000			
(d) End. bal.	104,000			
\$382,000 × 80% = \$305,600				

E8B. Job Order Costing: T Account Analysis

1. and 2.

Materials Inventory				Work in Process Inventory			
6/1	500	6/4	550	6/4	400	6/16	2,560
6/2	60			6/15	1,200		
				6/15	960*		
End. bal.	10			End. bal.	—		
Finished Goods Inventory				Overhead			
6/16	2,560	6/20	1,740	6/4	150	6/15	960*
End. bal.	820			6/10	500	6/30	140
				6/15	300		
				6/30	150		
				End. bal.	—		
Cash				Accounts Receivable			
		6/10	500	6/20	2,500		
		End. bal.	500	End. bal.	2,500		
Prepaid Insurance				Accumulated Depreciation— Machinery			
		6/30	50			6/30	100
		End. bal.	50			End. bal.	100
Accounts Payable				Payroll Payable			
		6/1	500			6/15	1,500
		6/2	60			End. bal.	1,500
		End. bal.	560				
Cost of Goods Sold				Sales			
6/20	1,740					6/20	2,500
6/30	140					End. bal.	2,500
End. bal.	1,880						
<p>*\$1,200 × 80% = \$960</p>							

E9B. Job Order Cost Card and Computation of Product Unit Cost

		Job Order:		A-62	
JOB ORDER COST CARD					
Cabinet Company					
Customer:	Zeke Cabinets, Inc.	Batch:		Custom:	X
Specifications:	Kitchen Cabinets per Customer				
Date of Order:	1/10/2014	Date of Completion:	1/24/2014		
		Previous	Current		
		Months	Month		
Costs Charged to Job				Total Cost	
Direct materials:					
	Cedar		\$ 7,900		
	Pine		6,320		
	Hardware		2,930		
	Assembly supplies		<u>988</u>		
	Total direct materials		<u>\$18,138</u>	\$18,138	
Direct labor:					
	Sawing		\$ 2,840		
	Shaping		2,200		
	Finishing		2,250		
	Assembly		<u>2,890</u>		
	Total direct labor		<u>\$10,180</u>	10,180	
Overhead:					
	(\$21.60 per machine hour)				
	Sawing (120 hours)		\$ 2,592		
	Shaping (220 hours)		4,752		
	Finishing (180 hours)		3,888		
	Assembly (50 hours)		<u>1,080</u>		
	Total overhead		<u>\$12,312</u>	<u>12,312</u>	
Total cost				\$40,630	
Units completed				÷ 34	
Product unit cost				<u>\$ 1,195</u>	

E10B. Computation of Product Unit Cost	
Total actual manufacturing costs:	
Liability insurance, manufacturing	\$ 2,500
Depreciation, manufacturing equipment	6,100
Direct materials	32,650
Indirect labor, manufacturing	3,480
Indirect materials	1,080
Heat, light, and power, manufacturing	1,910
Fire insurance, manufacturing	2,600
Rent, manufacturing	3,850
Direct labor	18,420
Manager's salary, manufacturing	<u>3,100</u>
Total manufacturing costs	<u>\$75,690</u>
Computation of product unit cost:	
\$75,690	/ 48,800 units = <u>\$1.55</u> per unit*
*Rounded	
E11B. Computation of Product Unit Cost	
Total actual manufacturing costs:	
Manufacturing utilities	\$ 500
Depreciation, manufacturing equipment	450
Indirect materials	300
Direct materials	1,300
Indirect labor	800
Direct labor	2,400
Insurance, manufacturing plant	600
Rent, manufacturing plant	<u>5,000</u>
Total manufacturing costs	<u>\$11,350</u>
Computation of product unit cost:	
\$11,350	/ 4,540 units = <u>\$2.50</u> per unit

E12B. Computation of Product Unit Cost

1.		Arch Corporation		
		Special Cost Analysis		
		Job Order Cost Cards		
		Job A-25	Job A-27	Job B-14
Direct materials:				
	Fabric Q	\$10,840	\$12,980	\$ 17,660
	Fabric Z	11,400	12,200	13,440
	Fabric YB	<u>5,260</u>	<u>6,920</u>	<u>10,900</u>
	Total	<u>\$27,500</u>	<u>\$32,100</u>	<u>\$ 42,000</u>
Direct labor:				
	Garment maker	\$ 8,900	\$10,400	\$ 16,200
	Layout	6,450	7,425	9,210
	Packaging	<u>3,950</u>	<u>4,875</u>	<u>6,090</u>
	Total	<u>\$19,300</u>	<u>\$22,700</u>	<u>\$ 31,500</u>
Overhead:				
	120% of direct labor costs	<u>\$23,160</u>	<u>\$27,240</u>	<u>\$ 37,800</u>
	Total cost	<u>\$69,960</u>	<u>\$82,040</u>	<u>\$111,300</u>
2. Units produced		\div 700	\div 775	\div 1,482
	Product unit cost*	<u>\$ 99.94</u>	<u>\$105.86</u>	<u>\$ 75.10</u>

*Rounded

E13B. Job Order Costing in a Service Organization

JOB ORDER COST CARD			
Hal's Computer Services			
Customer:	James Lowe		
Job Order No.:	8-324		
Contract Type:	Cost-Plus		
Type of Service:	Software Installation and Internet Interfacing		
Date of Completion:	October 6, 2014		
Costs Charged to Job			Total Cost
Software installation services:			
Installation labor			\$300
Service overhead (50%	* of installation labor costs)	<u>150</u>
Total			<u>\$450</u>
Internet services:			
Internet labor			\$200
Service overhead (20%	of Internet labor costs)	<u>40</u>
Total			<u>\$240</u>
* $\$150 / \$300 = 50\%$			
Cost Summary to Date			Total Cost
Software installation services			\$450
Internet services			<u>240</u>
Total			\$690
Profit margin (30%	of total cost)	<u>207</u>
Contract revenue			<u>\$897</u>

E14B. Computation of Overhead Rate			
1. and 2.			
	(1)	(2)	(3)
	Past Year	Next Year's Percentage	Next Year (1 × 2)
Indirect materials and supplies, repair and maintenance, outside service contracts, indirect labor, factory supervision, factory insurance, heat, light, and power costs	\$440,000	120%	\$528,000
Depreciation, machinery	54,000	140%	75,600
Property taxes and miscellaneous overhead	<u>16,000</u>	110%	<u>17,600</u>
Totals	\$510,000		\$621,200
Divided by machine hours	<u>50,000</u>		<u>62,120</u> *
Predetermined overhead rates	<u>\$ 10.20</u> /MH		<u>\$ 10.00</u> /MH
*50,000 + 12,120 = 62,120			
E15B. Computation and Application of Overhead Rate			
1.	\$450,000	× 130%	= <u>\$585,000</u>
2.	Increase in labor hours:		
	20,000	hours × 125%	= <u>25,000</u> hours
	Predetermined overhead rate:		
	\$585,000	/ 25,000 hours	= <u>\$23.40</u> per direct labor hour
3.	a.	26,000 hours × \$23.40 per hour	= <u>\$608,400</u>
	b.	Overhead applied	\$608,400
		Less actual overhead incurred	<u>610,400</u>
		Underapplied overhead	<u>\$ (2,000)</u>
	c.	Since the underapplied overhead amount is immaterial, the Cost of Goods Sold account will be increased by \$2,000 to reflect actual overhead costs.	