SOLUTIONS TO PROBLEMS

PROBLEM 3-1A

1.	Raw Materials Inventory	300,000	
	Accounts Payable		300,000
2.	Work in Process—Mixing	210,000	
	Work in Process—Packaging	45,000	
	Raw Materials Inventory		255,000
3.	Factory Labor	278,900	
	Wages Payable		278,900
4.	Work in Process—Mixing	182,500	
	Work in Process—Packaging	96,400	
	Factory Labor		278,900
5.	Manufacturing Overhead	810,000	
	Accounts Payable		810,000
6.	Work in Process—Mixing (28,000 X $23)	644,000	
	Work in Process—Packaging (6,000 X $23)	138,000	
	Manufacturing Overhead		782,000
7.	Work in Process—Packaging	979,000	
	Work in Process—Mixing		979,000
8.	Finished Goods Inventory	1,315,000	
	Work in Process—Packaging		1,315,000
9.	Accounts Receivable	2,500,000	
	Sales Revenue		2,500,000
	Cost of Goods Sold	1,604,000	
	Finished Goods Inventory		1,604,000

PROBLEM 3-2A

(a) Physical units

Units to be accounted for	
Work in process, June 1	0
Started into production	22,000
Total units	22,000
Units accounted for	
Transferred out	20,000
Work in process, June 30	2,000
Total units	22,000

(b) Equivalent units

	Materials	Conversion Costs
Units transferred out	20,000	20,000
Work in process, June 30		
2,000 X 100%	2,000	
2,000 X 40%		800
Total equivalent units	22,000	20,800

(c)

	Unit Costs
Materials	$9.00 ($198,000 ÷ 22,000)
Conversion costs	$8.00 ($166,400* ÷ 20,800)
Total unit cost	$17.00 ($9.00 + $8.00)

*$53,600 + $112,800

(d) Costs accounted for

Transferred out (20,000 X $17.00)		$340,000
Work in process, June 30		
Materials (2,000 X $9.00)	$18,000	
Conversion costs (800 X $8.00)	6,400	24,400
Total costs		$364,400

PROBLEM 3-2A (Continued)

(e)

ROSENTHAL COMPANY
Molding Department
Production Cost Report
For the Month Ended June 30, 2017

Quantities	Physical Units	Equivalent Units: Materials	Equivalent Units: Conversion Costs	
	(Step 1)	(Step 2)		
Units to be accounted for				
Work in process, June 1	0			
Started into production	22,000			
Total units	22,000			
Units accounted for				
Transferred out	20,000	20,000	20,000	
Work in process, June 30	2,000	2,000	800	(2,000 X 40%)
Total units	22,000	22,000	20,800	

Costs		Materials	Conversion Costs	Total
Unit costs (Step 3)				
Total cost	(a)	$198,000	$166,400	$364,400
Equivalent units	(b)	22,000	20,800	
Unit costs (a) ÷ (b)		$9.00	$8.00	$17.00
Costs to be accounted for				
Work in process, June 1				$ 0
Started into production				364,400
Total costs				$364,400

Cost Reconciliation Schedule (Step 4)			
Costs accounted for			
Transferred out (20,000 X $17.00)			$340,000
Work in process, June 30			
Materials (2,000 X $9.00)		$18,000	
Conversion costs (800 X $8.00)		6,400	24,400
Total costs			$364,400

PROBLEM 3-3A

(a) (1) **Physical units**

	T12 Tables	C10 Chairs
Units to be accounted for		
Work in process, July 1	0	0
Started into production	20,000	18,000
Total units	20,000	18,000
Units accounted for		
Transferred out	17,000	17,500
Work in process, July 31	3,000	500
Total units	20,000	18,000

(2) **Equivalent units**

	T12 Tables	
	Materials	Conversion Costs
Units transferred out	17,000	17,000
Work in process, July 31		
(3,000 X 100%)	3,000	
(3,000 X 60%)		1,800
Total equivalent units	20,000	18,800

	C10 Chairs	
	Materials	Conversion Costs
Units transferred out	17,500	17,500
Work in process, July 31		
(500 X 100%)	500	
(500 X 80%)		400
Total equivalent units	18,000	17,900

PROBLEM 3-3A (Continued)

(3) Unit costs

	T12 Tables	C10 Chairs
Materials ($380,000 ÷ 20,000)	$19	
($288,000 ÷ 18,000)		$16
Conversion costs ($338,400[a] ÷ 18,800)	18	
($214,800[b] ÷ 17,900)		12
Total	$37	$28

[a] $234,400 + $104,000

[b] $110,000 + $104,800

(4)

T12 Tables

Costs accounted for		
Transferred out (17,000 X $37)		$629,000
Work in process		
Materials (3,000 X $19)	$57,000	
Conversion costs (1,800 X $18)	32,400	89,400
Total costs		$718,400

C10 Chairs

Costs accounted for		
Transferred out (17,500 X $28)		$490,000
Work in process		
Materials (500 X $16)	$8,000	
Conversion costs (400 X $12)	4,800	12,800
Total costs		$502,800

PROBLEM 3-3A (Continued)

(b)

THAKIN INDUSTRIES INC.
Cutting Department—Plant 1
Production Cost Report
For the Month Ended July 31, 2017

Quantities	Physical Units	Equivalent Units: Materials	Equivalent Units: Conversion Costs	
	(Step 1)	(Step 2)		
Units to be accounted for				
Work in process, July 1	0			
Started into production	20,000			
Total units	20,000			
Units accounted for				
Transferred out	17,000	17,000	17,000	
Work in process, July 31	3,000	3,000	1,800	(3,000 X 60%)
Total units	20,000	20,000	18,800	

Costs		Materials	Conversion Costs	Total
Unit costs (Step 3)				
Total cost	(a)	$380,000	$338,400	$718,400
Equivalent units	(b)	20,000	18,800	
Unit costs (a) ÷ (b)		$ 19	$ 18	$ 37
Costs to be accounted for				
Work in process, July 1				$ 0
Started into production				718,400
Total costs				$718,400

Cost Reconciliation Schedule (Step 4)

Costs accounted for		
Transferred out (17,000 X $37)		$629,000
Work in process, July 31		
Materials (3,000 X $19)	$57,000	
Conversion costs (1,800 X $18)	32,400	89,400
Total costs		$718,400

PROBLEM 3-4A

(a)

	Physical Units	Equivalent Units: Materials	Equivalent Units: Conversion Costs
Units to be accounted for			
Work in process, November 1	35,000		
Started into production	660,000		
Total units	695,000		
Units accounted for			
Transferred out	670,000	670,000	670,000
Work in process, November 30	25,000	25,000	10,000*
Total units	695,000	695,000	680,000

*25,000 X 40%

	Materials cost	Conversion costs	
Beginning work in process	$ 79,000	$ 48,150	
Added during month	1,589,000	563,850	($225,920 + $337,930)
Total	$1,668,000	$612,000	
Equivalent units	695,000	680,000	
Cost per unit	$2.40	$.90	

(b) Costs accounted for

Transferred out (670,000 X $3.30)		$2,211,000
Work in process, November 30		
Materials (25,000 X $2.40)	$60,000	
Conversion costs (10,000 X $.90)	9,000	69,000
Total costs		$2,280,000

PROBLEM 3-4A (Continued)

(c)

RIVERA COMPANY
Assembly Department
Production Cost Report
For the Month Ended November 30, 2017

Quantities	Physical Units	Equivalent Units: Materials	Equivalent Units: Conversion Costs	
	(Step 1)	(Step 2)		
Units to be accounted for				
Work in process, November 1	35,000			
Started into production	660,000			
Total units	695,000			
Units accounted for				
Transferred out	670,000	670,000	670,000	
Work in process, November 30	25,000	25,000	10,000	(25,000 X 40%)
Total units	695,000	695,000	680,000	

Costs		Materials	Conversion Costs	Total
Unit costs (Step 3)				
Total cost	(a)	$1,668,000	$612,000	$2,280,000
Equivalent units	(b)	695,000	680,000	
Unit costs (a) ÷ (b)		$2.40	$.90	$3.30
Costs to be accounted for				
Work in process, November 1				$ 127,150
Started into production				2,152,850
Total costs				$2,280,000
Cost Reconciliation Schedule (Step 4)				
Costs accounted for				
Transferred out (670,000 X $3.30)				$2,211,000
Work in process, November 30				
Materials (25,000 X $2.40)			$60,000	
Conversion costs (10,000 X $.90)			9,000	69,000
Total costs				$2,280,000

PROBLEM 3-5A

(a) (1)

	Physical Units	Equivalent Units: Materials	Equivalent Units: Conversion Costs
Units to be accounted for			
Work in process, July 1	500		
Started into production	1,000		
Total units	1,500		
Units accounted for			
Transferred out	900	900	900
Work in process, July 31	600	600	240*
Total units	1,500	1,500	1,140

*600 X 40%

(2)

	Materials cost	Conversion costs	
Beginning work in process	$ 750	$ 600	
Added during month	2,400	2,820	($1,580 + $1,240)
Total	$3,150	$3,420	
Equivalent units	1,500	1,140	
Cost per unit	$2.10	$3.00	

(3) Costs accounted for

Transferred out (900 X $5.10)		$4,590
Work in process, July 31		
Materials (600 X $2.10)	$1,260	
Conversion costs (240 X $3.00)	720	1,980
Total costs		$6,570

PROBLEM 3-5A (Continued)

(b)

POLK COMPANY
Basketball Department
Production Cost Report
For the Month Ended July 31, 2017

Quantities	Physical Units	Equivalent Units: Materials	Equivalent Units: Conversion Costs
	(Step 1)	(Step 2)	
Units to be accounted for			
Work in process, July 1	500		
Started into production	1,000		
Total units	1,500		
Units accounted for			
Transferred out	900	900	900
Work in process, July 31	600	600	240
Total units	1,500	1,500	1,140

Costs		Materials	Conversion Costs	Total
Unit costs (Step 3)				
Total costs	(a)	$3,150	$3,420	$6,570
Equivalent units	(b)	1,500	1,140	
Unit costs (a) ÷ (b)		$2.10	$3.00	$5.10
Costs to be accounted for				
Work in process, July 1				$1,350
Started into production				5,220
Total costs				$6,570

Cost Reconciliation Schedule (Step 4)			
Costs accounted for			
Transferred out (900 X $5.10)			$4,590
Work in process, July 31			
Materials (600 X $2.10)		$1,260	
Conversion costs (240 X $3.00)		720	1,980
Total costs			$6,570

PROBLEM 3-6A

(a) Computation of equivalent units:

	Physical Units	Equivalent Units: Materials	Equivalent Units: Conversion Costs
Units accounted for			
Transferred out	120,000	120,000	120,000
Work in process, October 31 (60% materials, 40% conversion costs)	50,000	30,000	20,000
Total units	170,000	150,000	140,000

Computation of October unit costs

Materials: $240,000 ÷ 150,000 equivalent units =	$1.60
Conversion cost: $105,000 ÷ 140,000 equivalent units =	.75
Total unit cost, October	$2.35

(b) Cost Reconciliation Schedule

Costs accounted for		
Transferred out (120,000 X $2.35)		$282,000
Work in process, October 31		
Materials (30,000 X $1.60)	$48,000	
Conversion costs (20,000 X $0.75)	15,000	63,000
Total costs		$345,000