

CHAPTER 2

SOLUTIONS TO EXERCISES—SET B

EXERCISE 2-1B

(a)	Factory Labor	77,000	
	Factory Wages Payable.....		61,000
	Employer Payroll Taxes Payable.....		9,600
	Employer Fringe Benefits Payable		6,400
(b)	Work in Process Inventory (\$77,000 X 80%).....	61,600	
	Manufacturing Overhead	15,400	
	Factory Labor.....		77,000

EXERCISE 2-2B

(a)	May 31	Work in Process Inventory	10,500	
		Manufacturing Overhead	1,800	
		Raw Materials Inventory.....		12,300
	31	Work in Process Inventory	12,800	
		Manufacturing Overhead	1,950	
		Factory Labor		14,750
	31	Work in Process Inventory		
		(\$12,800 X 80%).....	10,240	
		Manufacturing Overhead		10,240
	31	Finished Goods Inventory	8,460	
		Work in Process Inventory		
		(\$2,000 + \$2,500 + \$2,200 + \$1,760)* ...		8,460

*\$2,200 X 80%

(b)		Work in Process Inventory			
	May 1	Balance	3,200		
	31		10,500		
	31		12,800		
	31		10,240		
	May 31	Balance	28,280		8,460

EXERCISE 2-2B (Continued)

Job Cost Sheets

Job No.	Beginning Work in Process	Direct Material	Direct Labor	Manufacturing* Overhead	Total
430	\$1,200	\$3,600	\$ 3,000	\$2,400	\$10,200
431	<u>0</u>	<u>4,400</u>	<u>7,600</u>	<u>6,080</u>	<u>18,080</u>
	<u>\$1,200</u>	<u>\$8,000</u>	<u>\$10,600</u>	<u>\$8,480</u>	<u>\$28,280</u>

*Direct labor X .80

EXERCISE 2-3B

- (a) 1. \$14,305, or (\$4,105 + \$6,000 + \$4,200).
 2. Last year 70%, or (\$4,200 ÷ \$6,000); this year 75% (either \$6,375 ÷ \$8,500 or \$3,000 ÷ \$4,000).

(b) Jan. 31	Work in Process Inventory.....	8,000	
	Raw Materials Inventory (\$6,000 + \$2,000).....		8,000
31	Work in Process Inventory.....	12,500	
	Factory Labor (\$8,500 + \$4,000).....		12,500
31	Work in Process Inventory.....	9,375	
	Manufacturing Overhead (\$6,375 + \$3,000).....		9,375
31	Finished Goods Inventory.....	44,180	
	Work in Process Inventory		44,180

EXERCISE 2-4B

$$(a) + \$50,000 + \$37,500 = \$135,650$$

$$(a) = \$48,150$$

$$\$135,650 + (b) = \$213,300$$

$$(b) = \$77,650$$

$$\$213,300 - (c) = \$193,200$$

$$(c) = \$20,100$$

EXERCISE 2-4B (Continued)

[Note: The instructions indicate that manufacturing overhead is applied on the basis of direct labor cost, and the rate is the same in all cases. From Case A, a student should note the overhead rate to be 75%, or $(\$37,500 \div \$50,000)$.]

$$(d) = .75 \times \$120,000$$

$$(d) = \$90,000$$

$$\$78,000 + \$120,000 + \$90,000 = (e)$$

$$(e) = \$288,000$$

$$\$288,000 + \$15,500 = (f)$$

$$(f) = \$303,500$$

$$\$303,500 - \$11,800 = (g)$$

$$(g) = \$291,700$$

[Note: (h) and (i) are solved together.]

$$(i) = .75(h)$$

$$\$72,600 + (h) + .75(h) = \$212,600$$

$$1.75(h) = \$140,000$$

$$(h) = \$80,000$$

$$(i) = \$60,000$$

$$(j) = \$212,600 + \$25,050$$

$$(j) = \$237,650$$

$$\$237,650 - (k) = \$222,000$$

$$(k) = \$15,650$$

EXERCISE 2-5B

(a) $\$2.56$ per machine hour $(\$320,000 \div 125,000) =$ Over/underapplied

(b) $(\$308,000) - (\$2.56 \times 130,000 \text{ Machine Hours})$
 $\$308,000 - \$332,800 = \$24,800$ overapplied

(c) Operating Overhead.....	24,800	
Cost of Goods Sold		24,800

EXERCISE 2-6B

(a) (1) The source documents are:

Direct materials—Materials requisition slips.

Direct labor—Time tickets.

Manufacturing overhead—Predetermined overhead rate.

(2) The predetermined overhead rate is 140% of direct labor cost. For example, on July 15, the computation is $\$560 \div \$400 = 140\%$. The same result is obtained on July 22 and 31.

(3) The total cost is:

Direct materials	\$4,965
Direct labor	1,250
Manufacturing overhead.....	<u>1,750</u>
	<u>\$7,965</u>

The unit cost is \$3.98 ($\$7,965 \div 2,000$).

(b) July 31	Finished Goods Inventory	7,965	
	Work in Process Inventory		7,965

EXERCISE 2-7B

1.	Raw Materials Inventory	45,235	
	Accounts Payable		45,235
2.	Work in Process Inventory	29,600	
	Manufacturing Overhead.....	6,300	
	Raw Materials Inventory		35,900
3.	Factory Labor	56,900	
	Factory Wages Payable		52,000
	Employer Payroll Taxes Payable.....		4,900
4.	Work in Process Inventory	49,000	
	Manufacturing Overhead.....	7,900	
	Factory Labor		56,900

EXERCISE 2-7B (Continued)

5.	Manufacturing Overhead	80,500	
	Accounts Payable.....		80,500
6.	Work in Process Inventory (\$49,000 X 120%).....	58,800	
	Manufacturing Overhead.....		58,800
7.	Finished Goods Inventory	88,000	
	Work in Process Inventory.....		88,000
8.	Accounts Receivable	119,300	
	Sales		119,300
	Cost of Goods Sold.....	83,000	
	Finished Goods Inventory.....		83,000

EXERCISE 2-8B

1.	Raw Materials Inventory	213,000	
	Accounts Payable.....		213,000
	Factory Labor	92,000	
	Factory Wages Payable.....		92,000
2.	Work in Process Inventory	153,530	
	Manufacturing Overhead	4,800	
	Raw Materials Inventory.....		158,330
	Work in Process Inventory	84,500	
	Manufacturing Overhead	7,500	
	Factory Labor.....		92,000
3.	Manufacturing Overhead	59,500	
	Accounts Payable.....		59,500
4.	Manufacturing Overhead	14,550	
	Accumulated Depreciation—Machinery and Equipment.....		14,550

EXERCISE 2-8B (Continued)

5.	Work in Process Inventory	59,150	
	Manufacturing Overhead		
	(70% X \$84,500)		59,150
6.	Finished Goods Inventory	232,180	
	Work in Process Inventory		232,180

Computation of cost of jobs finished:

<u>Job</u>	<u>Direct Materials</u>	<u>Direct Labor</u>	<u>Manufacturing Overhead</u>	<u>Total</u>
A20	\$33,240	\$18,500	\$12,950	\$ 64,690
A21	42,920	24,000	16,800	83,720
A23	41,270	25,000	17,500	83,770
				<u>\$232,180</u>

EXERCISE 2-9B

**(a) ANDRES MANUFACTURING COMPANY
Cost of Goods Manufactured Schedule
For the Month Ended May 31, 2017**

Work in process, May 1		\$ 18,800
Direct materials used.....	\$54,200	
Direct labor.....	32,000	
Manufacturing overhead applied.....	<u>40,000</u>	
Total manufacturing costs.....		<u>126,200</u>
Total cost of work in process		145,000
Less: Work in process, May 31		<u>17,900</u>
Cost of goods manufactured		<u>\$127,100</u>

EXERCISE 2-9B (Continued)

**(b) ANDRES MANUFACTURING COMPANY
(Partial) Income Statement
For the Month Ended May 31, 2017**

Sales.....		\$200,000
Cost of goods sold		
Finished goods, May 1	\$ 12,600	
Cost of goods manufactured	<u>127,100</u>	
Cost of goods available for sale	139,700	
Finished goods, May 31	<u>15,400</u>	
Cost of goods sold.....		<u>124,300</u>
Gross profit.....		<u>\$ 75,700</u>

(c) In the May 31 balance sheet, the manufacturing inventories will be reported in current assets as follows: Finished Goods \$15,400, Work in Process \$17,900, and Raw Materials \$7,100.

EXERCISE 2-10B

(a) Work in Process Inventory

April 30	\$11,300	(#10, \$7,200 + #11, \$4,100)
May 31	\$19,300	(#11, \$8,000 + #13, \$4,700 + #14, \$6,600)
June 30	\$9,800	(#14, \$6,600 + \$3,200)

(b) Finished Goods Inventory

April 30	\$1,200	(#12)
May 31	\$11,600	(#10)
June 30	\$19,100	(#11, \$11,000 + #13, \$8,100)

(c) Gross Profit

<u>Month</u>	<u>Job Number</u>	<u>Sales</u>	<u>Cost of Goods Sold</u>	<u>Gross Profit</u>
May	12	\$ 1,560	\$ 1,200	\$ 360
June	10	15,080	11,600	3,480
July	11/13	24,830	19,100	5,730

EXERCISE 2-11B

(a)

<u>Transaction Number</u>	<u>Accounts Titles</u>	<u>Debit</u>	<u>Credit</u>
1	Supplies	1,795	
	Accounts Payable.....		1,795
2	Work in Process	700	
	Operating Overhead	300	
	Supplies		1,000
3	Work in Process	41,250	
	Operating Overhead	13,750	
	Salaries Payable		55,000
4	Operating Overhead	30,000	
	Cash		30,000
5	Work in Process (\$41,250 X 80%)....	33,000	
	Operating Overhead		33,000
6	Cost of Completed Work.....	68,000	
	Work in Process		68,000

(b)

Work in Process			
2.	700	68,000	6.
3.	41,250		
5.	33,000		
	6,950		

EXERCISE 2-12B

(a)		<u>Manson</u>	<u>Walker</u>	<u>Barton</u>
Direct materials	\$	650	\$ 350	\$ 200
Auditor labor costs		5,400	6,600	3,375
Applied overhead		<u>3,900</u>	<u>4,800</u>	<u>1,800</u>
Total cost		<u>\$9,950</u>	<u>\$11,750</u>	<u>\$5,375</u>

(b) The Barton job is the only incomplete job, therefore, \$5,375.

(c) Applied overhead	\$ 10,500 (CR)
Actual overhead	<u>(10,000) (DR)</u>
Balance	<u>\$ 500 (CR)</u>

EXERCISE 2-13B

(a) Predetermined overhead rate = Budgeted overhead ÷ Budgeted decorator hours
 = \$850,000 ÷ 50,000 decorator hours
 = \$17 per decorator hour

(b) <u>Applied overhead</u>		
Work in Process (52,000 hrs X \$17).....	884,000	
Operating Overhead		884,000

(c) Applied overhead	\$ 884,000	
Actual overhead	<u>(879,000)</u>	
Balance	<u>\$ 5,000</u>	overapplied

SOLUTIONS TO PROBLEMS—SET C

PROBLEM 2-1C

(a) $\$450,000 \div 20,000$ direct labor hours = $\$22.50$ per direct labor hour

(b) See solution to part (e) for job cost sheets

(c) Raw Materials Inventory	46,000	
Accounts Payable		46,000
Factory Labor	31,900	
Employer Payroll Taxes Payable.....		7,000
Factory Wages Payable		24,900
Manufacturing Overhead.....	40,500	
Raw Materials Inventory		10,000
Factory Labor		7,500
Accumulated Depreciation		12,000
Accounts Payable		11,000
(d) Work in Process Inventory	33,000	
Raw Materials Inventory		
(\$5,000 + \$15,000 + \$13,000)		33,000
Work in Process Inventory	24,900	
Factory Labor		
(\$3,000 + \$12,000 + \$9,900)		24,900
Work in Process Inventory	37,350	
Manufacturing Overhead		
(200 + 800 + 660) X \$22.50 per hour		37,350

See solution to part (e) for postings to job cost sheets.

PROBLEM 2-1C (Continued)

(e)

Job Cost Sheets

Job No. 25			
<u>Date</u>	<u>Direct Materials</u>	<u>Direct Labor</u>	<u>Manufacturing Overhead</u>
Beg.	\$10,000	\$6,000	\$ 9,000
Jan.	<u>5,000</u>	<u>3,000</u>	<u>4,500*</u>
	<u>\$15,000</u>	<u>\$9,000</u>	<u>\$13,500</u>
Cost of completed job			
	Direct materials		\$15,000
	Direct labor		9,000
	Manufacturing overhead		<u>13,500</u>
	Total cost		<u>\$37,500</u>

*\$22.50 X 200 direct labor hours

Job No. 26			
<u>Date</u>	<u>Direct Materials</u>	<u>Direct Labor</u>	<u>Manufacturing Overhead</u>
Jan.	<u>\$15,000</u>	<u>\$12,000</u>	<u>\$18,000**</u>
	<u>\$15,000</u>	<u>\$12,000</u>	<u>\$18,000</u>
Cost of completed job			
	Direct materials		\$15,000
	Direct labor		12,000
	Manufacturing overhead		<u>18,000</u>
	Total cost		<u>\$45,000</u>

**\$22.50 X 800 direct labor hours

Job No. 27			
<u>Date</u>	<u>Direct Materials</u>	<u>Direct Labor</u>	<u>Manufacturing Overhead</u>
Jan.	<u>\$13,000</u>	<u>\$9,900</u>	<u>\$14,850***</u>

***\$22.50 X 660 direct labor hours

PROBLEM 2-1C (Continued)

Finished Goods Inventory	82,500	
Work in Process Inventory		
(\$37,500 + \$45,000)		82,500
(f) Cost of Goods Sold	82,500	
Finished Goods Inventory		
(\$45,000 + \$37,500)		82,500
Accounts Receivable	139,000	
Sales Revenue (\$65,000 + \$74,000)		139,000

(g)

	Work in Process		
Beginning balance	25,000	82,500	Cost of completed jobs 25 and 26
Direct materials	33,000		
Direct labor	24,900		
Manufacturing overhead	37,350		
Ending balance	37,750		

The balance in this account consists of the current costs assigned to Job No. 27:

Direct Materials	\$13,000
Direct Labor	9,900
Manufacturing Overhead	<u>14,850</u>
Total costs assigned	<u><u>\$37,750</u></u>

(h) Manufacturing Overhead

<u>Actual</u>	<u>Applied</u>
40,500	37,350
3,150	

The balance in the Manufacturing Overhead account is underapplied.

PROBLEM 2-2C

(a)

Work in Process Inventory

1/1	Balance (1)	113,000	Completed work (5) (c)	347,000
	Direct materials (2)	105,000		
	Direct labor (3)	141,000		
	Manufacturing overhead (4)	175,000		
12/31	Balance	187,000		

(1)	Job 50	\$ 65,000		(3)	Job 50	\$ 37,000
	Job 51	48,000			Job 51	40,000
		<u>\$113,000</u>			Job 52	64,000
						<u>\$141,000</u>

(2)	Job 50	\$ 32,000		(4)	Job 50	\$ 45,000
	Job 51	30,000			Job 51	50,000
	Job 52	43,000			Job 52	80,000
		<u>\$105,000</u>				<u>\$175,000</u>

(5)	(a)	Job 50		
		Beginning balance		\$ 65,000
		Direct materials		32,000
		Direct labor		37,000
		Manufacturing overhead.....		45,000
				<u>\$179,000</u>

(b)	Job 51		
	Beginning balance		\$ 48,000
	Direct materials		30,000
	Direct labor		40,000
	Manufacturing overhead.....		50,000
			<u>\$168,000</u>

(c)	Total cost of completed work		
	Job 50		\$179,000
	Job 51		168,000
			<u>\$347,000</u>

PROBLEM 2-2C (Continued)

Work in process balance		<u>\$187,000</u>
Unfinished job No. 52		<u>\$187,000</u> (a)
(a) Current year's cost		
Direct materials	\$ 43,000	
Direct labor	64,000	
Manufacturing overhead	<u>80,000</u>	
		<u>\$187,000</u>
(b) Actual overhead costs		
Incurred on account		\$121,000
Indirect materials		12,000
Indirect labor		18,000
Depreciation		<u>19,500</u>
		<u>\$170,500</u>
Applied overhead costs		
Job 50		\$ 45,000
Job 51		50,000
Job 52		<u>80,000</u>
		<u>\$175,000</u>
Actual overhead		\$170,500
Applied overhead		175,000
overapplied overhead		<u>\$ 4,500</u>
Manufacturing Overhead	4,500	
Cost of Goods Sold		4,500
(c) Sales (given)		
		\$500,000
Cost of goods sold		
Add: Job 48	\$ 87,000	
Job 49	65,000	
Job 50	<u>179,000</u>	
		331,000
Less: overapplied overhead	<u>4,500</u>	<u>326,500</u>
Gross profit		<u>\$173,500</u>

PROBLEM 2-3C

(a)			
(i)	Raw Materials Inventory	4,300	
	Accounts Payable.....		4,300
	Factory Labor	8,200	
	Cash.....		8,200
	Manufacturing Overhead	1,600	
	Cash.....		1,600
(ii)	Work in Process Inventory	5,500	
	Manufacturing Overhead	1,500	
	Raw Materials Inventory.....		7,000
	Work in Process Inventory	5,600	
	Manufacturing Overhead	2,000	
	Factory Labor.....		7,600
	Work in Process Inventory (\$5,600 X .80).....	4,480	
	Manufacturing Overhead.....		4,480
(iii)	Finished Goods Inventory	21,540	
	Work in Process Inventory.....		21,540

Job	Direct Materials	Direct Labor	Manufacturing Overhead*	Total Costs
Clark	\$3,100	\$2,500	\$2,000	\$ 7,600
Douglas	2,800	2,200	1,760	6,760
Evans	3,400	2,100	1,680	7,180
				<u>\$21,540</u>

*80% of direct labor amount

Cash	45,000	
Sales Revenue (3 X \$15,000).....		45,000
Cost of Goods Sold.....	21,540	
Finished Goods Inventory.....		21,540

PROBLEM 2-3C (Continued)

(b) **Work in Process Inventory**

5/1	Balance	13,080	5/31	Completed work	21,540
	Direct materials	5,500			
	Direct labor	5,600			
	Overhead applied	4,480			
5/31	Balance	7,120			

(c)

Work in Process Inventory	<u>\$7,120</u>
Job: Franz (Direct materials \$1,900 + Direct labor \$2,900 + Manufacturing overhead \$2,320).....	<u>\$7,120</u>

(d) **VICTOR RAMOS COMPANY**
Cost of Goods Manufactured Schedule
For the Month Ended May 31, 2017

Work in process, May 1		\$13,080
Direct materials used.....	\$5,500	
Direct labor.....	5,600	
Manufacturing overhead applied.....	<u>4,480</u>	
Total manufacturing costs.....		<u>15,580</u>
Total cost of work in process		<u>28,660</u>
Less: Work in process, May 31		<u>7,120</u>
Cost of goods manufactured		<u>\$21,540</u>

PROBLEM 2-4C

- (a) Department A: $\$825,000 \div \$550,000 = 150\%$ of direct labor cost.
 Department B: $\$600,000 \div 40,000 = \15.00 per direct labor hour.
 Department C: $\$797,500 \div 110,000 = \7.25 per machine hour.

(b)

	Department		
<u>Manufacturing Costs</u>	A	B	C
Direct materials	\$ 92,000	\$ 98,000	\$ 64,000
Direct labor	52,000	35,000	50,400
Overhead applied	<u>78,000*</u>	<u>52,500**</u>	<u>91,350***</u>
Total	<u>\$222,000</u>	<u>\$185,500</u>	<u>\$205,750</u>

*\$52,000 X 150%

**3,500 X \$15

***12,600 X \$7.25

(c)

	Department		
<u>Manufacturing Overhead</u>	A	B	C
Incurred	\$ 76,000	\$55,000	\$92,000
Applied	<u>78,000</u>	<u>52,500</u>	<u>91,350</u>
Under (over) applied	<u>\$ (2,000)</u>	<u>\$ 2,500</u>	<u>\$ 650</u>

PROBLEM 2-5C

- (a) \$89,000 (\$78,000 + \$11,000).
- (b) \$20,500 [(\$17,000 + \$92,500) – \$89,000 (See (a))].
- (c) \$36,300 (Given in other data—\$21,000 + \$15,300).
- (d) \$95,000 (\$133,000 manufacturing overhead applied ÷ 140%).
- (e) \$133,000 (Manufacturing overhead applied).
- (f) \$336,700 [\$36,300 + \$78,000 + \$95,000 + \$133,000 – \$5,600 (See (g))].
- (g) \$5,600 [\$2,000 + \$1,500 + (\$1,500 X 140%)].
- (h) \$153,000 (Given in other data).
- (i) \$336,700 (Same as (f)).
- (j) \$347,700 [\$153,000 + \$336,700 – \$142,000 (Given in other data)].
- (k) \$142,000 (Given in other data).
- (l) \$111,000 [\$95,000 (See (d)) + \$16,000].
- (m) \$111,000 (Same as (l)).
- (n) \$109,000 [\$133,000 + \$3,000 (Given in other data) – \$11,000 – \$16,000].