Chapter 3
Job-Order Costing: Cost Flows and External Reporting

Questions

3-1 The link that connects these two schedules is the cost of goods manufactured. It is calculated within a schedule of cost of goods manufactured and then it plugs into the schedule of cost of goods sold to enable calculating the cost of goods available for sale.

3-2 The Manufacturing Overhead clearing account is credited when overhead cost is applied to Work in Process. The applied overhead cost for the period will probably not equal the actual overhead cost because overhead application relies on a predetermined overhead rate that is based on estimates made at the beginning of the period.

3-3 Underapplied overhead occurs when the actual overhead cost exceeds the amount of overhead cost applied to Work in Process inventory during the period. Overapplied overhead occurs when the actual overhead cost is less than the amount of overhead cost applied to Work in Process inventory during the period. Underapplied or overapplied overhead is disposed of by either closing out the amount to Cost of Goods Sold or by allocating the amount among Cost of Goods Sold and ending Work in Process and Finished Goods inventories in proportion to the applied overhead in each account. The adjustment for underapplied overhead increases Cost of Goods Sold (and the two inventories) whereas the adjustment for overapplied overhead decreases Cost of Goods Sold (and the two inventories).

3-4 Manufacturing overhead may be underapplied for several reasons. Control over overhead spending may be poor. Or, some of the overhead may be fixed and the actual amount of the allocation base may be less than estimated at the beginning of the period. In this situation, the amount of overhead applied to inventory will be less than the actual overhead cost incurred.

3-5 Underapplied overhead implies that not enough overhead was assigned to jobs during the period. Thus, cost of goods sold is understated so we add underapplied overhead to cost of goods sold. On the other hand, overapplied overhead is deducted from cost of goods sold.

3-6 The raw materials used in production is calculated by taking the beginning raw materials inventory plus raw material purchases to derive the raw materials available. From this amount, subtract the ending raw materials inventory to derive the raw materials used in production.

3-7 The total manufacturing costs added to production include the direct materials used in production, the direct labor cost, and the manufacturing overhead applied to work in process.

3-8 The beginning work in process inventory plus the total manufacturing costs (which includes the direct materials used production, the direct labor cost, and the manufacturing overhead applied to work in process) minus the ending work in process inventory equals the cost of goods manufactured.

3-9 Beginning finished goods inventory plus the cost of goods manufactured equals the cost of goods available for sale. From this amount, subtract the ending finished goods inventory to derive the unadjusted cost of goods sold.

3-10 Direct labor costs are added to Work in Process as goods are being manufactured. Once goods are completed, their manufacturing costs (including direct labor) are transferred to Finished Goods. Once goods are sold to customers their manufacturing costs (including direct labor) are transferred to Cost of Goods Sold.

Chapter 3: Applying Excel

The completed worksheet is shown below.

	A	B	C	D
1	Chapter 3: Applying Excel			
2				
3	**Data**			
4	Allocation base	Machine-hours		
5	Estimated manufacturing overhead cost	$300,000		
6	Estimated total amount of the allocation base	75,000	machine-hours	
7	Actual manufacturing overhead cost	$290,000		
8	Actual total amount of the allocation base	68,000	machine-hours	
9				
10	*Enter a formula into each of the cells marked with a ? below*			
11				
12	**Computation of the predetermined overhead rate**			
13	Estimated manufacturing overhead cost	$300,000		
14	Estimated total amount of the allocation base	75,000	machine-hours	
15	Predetermined overhead rate	$4.00	per machine-hour	
16				
17	**Computation of underapplied or overapplied manufacturing overhead**			
18	Actual manufacturing overhead cost	$ 290,000		
19	Manufacturing overhead cost applied to Work in Process during the year:			
20	Predetermined overhead rate	$4.00	per machine-hour	
21	Actual total amount of the allocation base	68,000	machine-hours	
22	Manufacturing overhead applied	$ 272,000		
23	Underapplied (overapplied) manufacturing overhead	$ 18,000		
24				

Filled in Chapter 3 Form | Chapter 3 Formulas | Chapter 3 Re

The completed worksheet, with formulas displayed, is shown below.

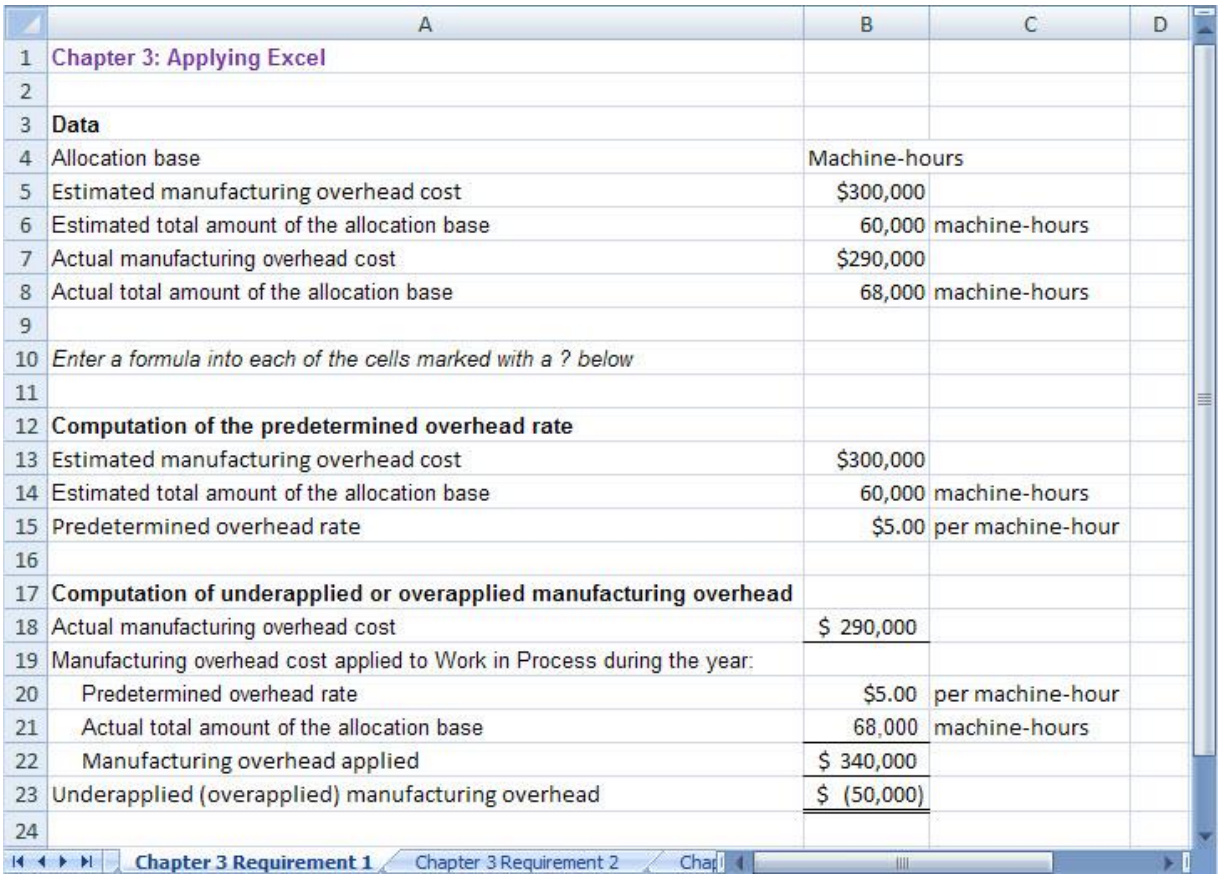
	A	B	C	D
1	Chapter 3: Applying Excel			
2				
3	**Data**			
4	Allocation base	Machine-hours		
5	Estimated manufacturing overhead cost	300000		
6	Estimated total amount of the allocation base	75000	machine-hours	
7	Actual manufacturing overhead cost	290000		
8	Actual total amount of the allocation base	68000	machine-hours	
9				
10	*Enter a formula into each of the cells marked with a ? below*			
11				
12	**Computation of the predetermined overhead rate**			
13	Estimated manufacturing overhead cost	=B5		
14	Estimated total amount of the allocation base	=B6	machine-hours	
15	Predetermined overhead rate	=B13/B14	per machine-hour	
16				
17	**Computation of underapplied or overapplied manufacturing overhead**			
18	Actual manufacturing overhead cost	=B7		
19	Manufacturing overhead cost applied to Work in Process during the year:			
20	Predetermined overhead rate	=B15	per machine-hour	
21	Actual total amount of the allocation base	=B8	machine-hours	
22	Manufacturing overhead applied	=B20*B21		
23	Underapplied (overapplied) manufacturing overhead	=B18-B22		
24				

Chapter 3 Formulas | Chapter 3 Requirement 1 | Chapter 3 R

[Note: To display formulas in cells instead of their calculated amounts, consult Excel Help.]

Chapter 3: Applying Excel (continued)

1. When the estimated total amount of the allocation base is changed to 60,000 machine-hours, the worksheet changes as show below:

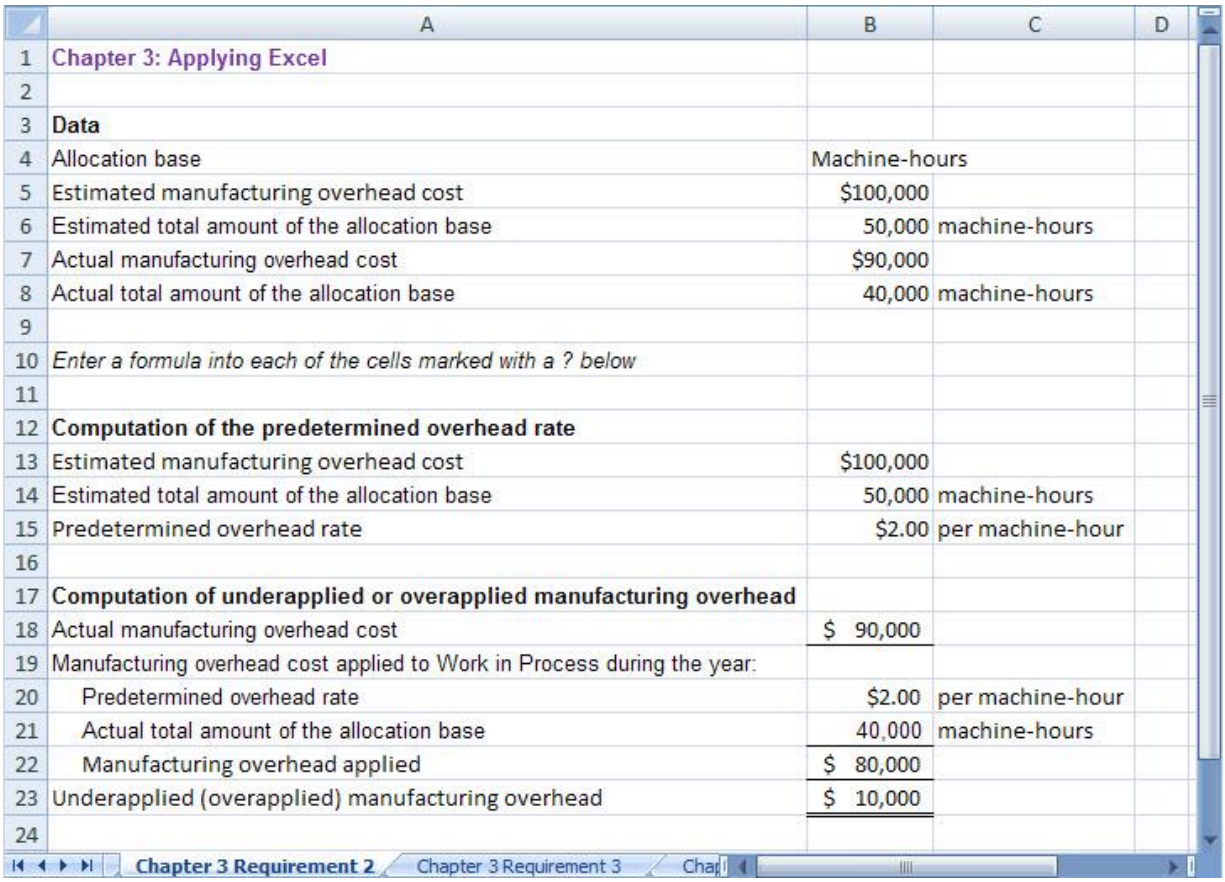


	A	B	C	D
1	Chapter 3: Applying Excel			
2				
3	**Data**			
4	Allocation base	Machine-hours		
5	Estimated manufacturing overhead cost	$300,000		
6	Estimated total amount of the allocation base	60,000	machine-hours	
7	Actual manufacturing overhead cost	$290,000		
8	Actual total amount of the allocation base	68,000	machine-hours	
9				
10	*Enter a formula into each of the cells marked with a ? below*			
11				
12	**Computation of the predetermined overhead rate**			
13	Estimated manufacturing overhead cost	$300,000		
14	Estimated total amount of the allocation base	60,000	machine-hours	
15	Predetermined overhead rate	$5.00	per machine-hour	
16				
17	**Computation of underapplied or overapplied manufacturing overhead**			
18	Actual manufacturing overhead cost	$ 290,000		
19	Manufacturing overhead cost applied to Work in Process during the year:			
20	Predetermined overhead rate	$5.00	per machine-hour	
21	Actual total amount of the allocation base	68,000	machine-hours	
22	Manufacturing overhead applied	$ 340,000		
23	Underapplied (overapplied) manufacturing overhead	$ (50,000)		
24				

Chapter 3 Requirement 1 | Chapter 3 Requirement 2 | Chap

The predetermined overhead rate has increased from $4.00 per machine-hour to $5.00 per machine-hour because the estimated total amount of the allocation base has decreased from 75,000 machine-hours to 60,000 machine-hours. The same amount of estimated overhead cost is spread across fewer machine-hours.

2. With all of the changes in the data, the worksheet should look like the following:

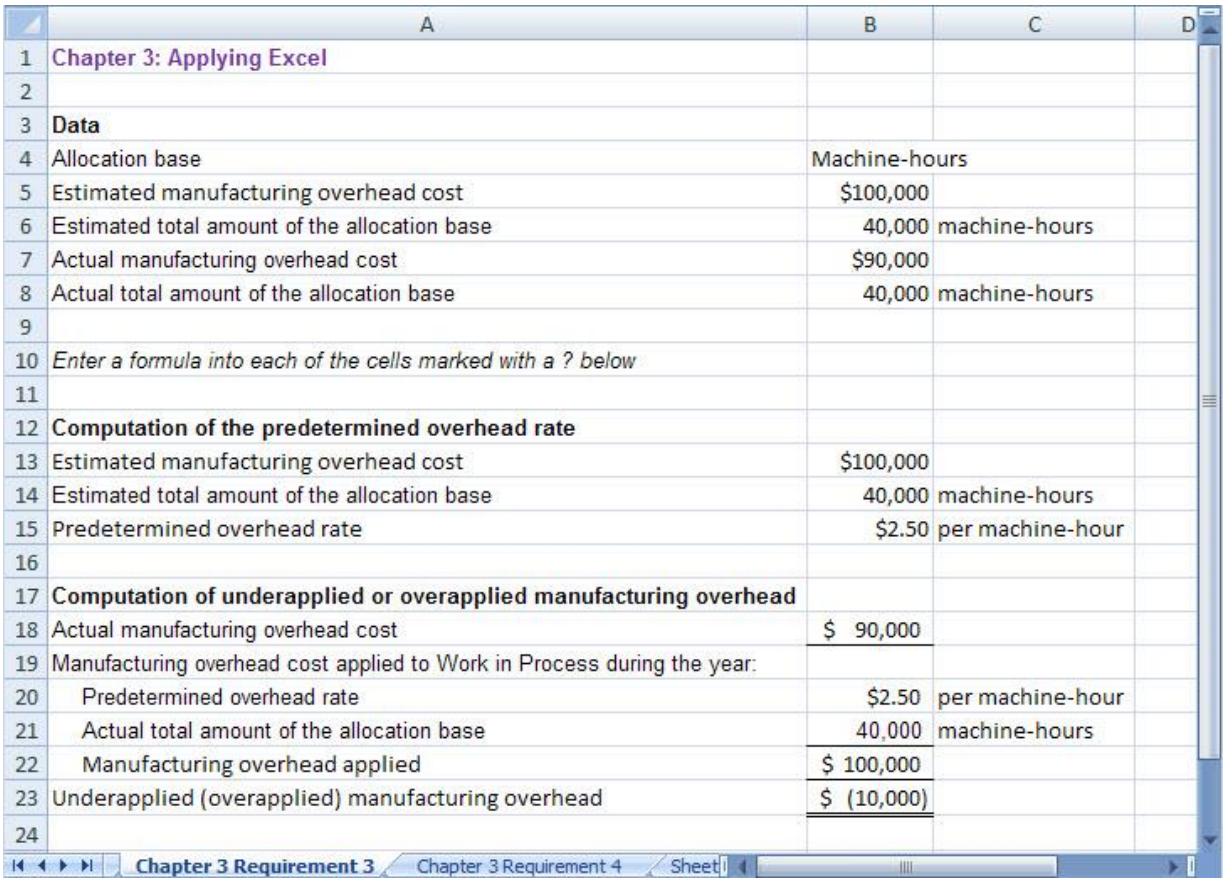


	A	B	C	D
1	Chapter 3: Applying Excel			
2				
3	**Data**			
4	Allocation base	Machine-hours		
5	Estimated manufacturing overhead cost	$100,000		
6	Estimated total amount of the allocation base	50,000	machine-hours	
7	Actual manufacturing overhead cost	$90,000		
8	Actual total amount of the allocation base	40,000	machine-hours	
9				
10	*Enter a formula into each of the cells marked with a ? below*			
11				
12	**Computation of the predetermined overhead rate**			
13	Estimated manufacturing overhead cost	$100,000		
14	Estimated total amount of the allocation base	50,000	machine-hours	
15	Predetermined overhead rate	$2.00	per machine-hour	
16				
17	**Computation of underapplied or overapplied manufacturing overhead**			
18	Actual manufacturing overhead cost	$ 90,000		
19	Manufacturing overhead cost applied to Work in Process during the year:			
20	Predetermined overhead rate	$2.00	per machine-hour	
21	Actual total amount of the allocation base	40,000	machine-hours	
22	Manufacturing overhead applied	$ 80,000		
23	Underapplied (overapplied) manufacturing overhead	$ 10,000		
24				

Chapter 3 Requirement 2 | Chapter 3 Requirement 3 | Chap

Chapter 3: Applying Excel (continued)

3. When the estimated total amount of the allocation base is changed to 40,000 machine-hours, the worksheet looks like the following:

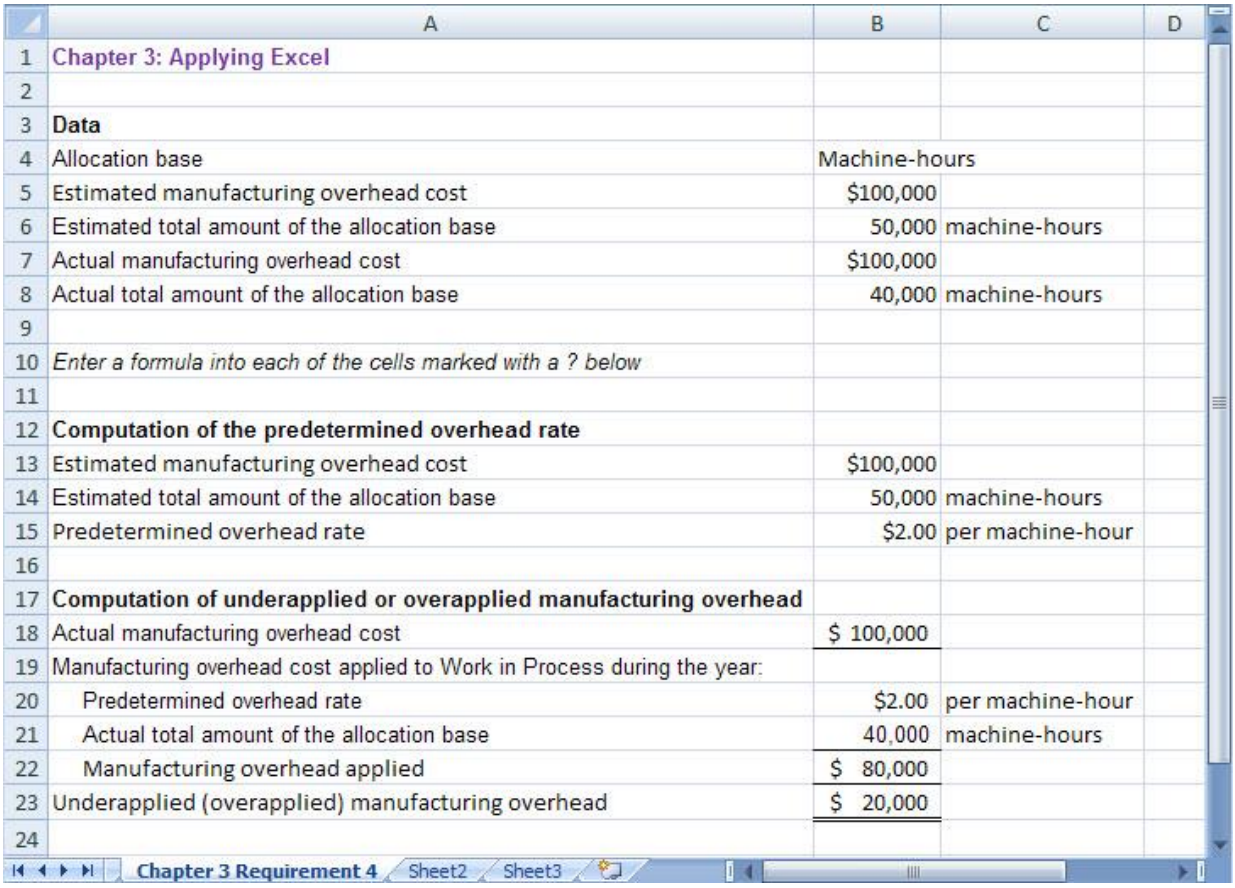


	A	B	C	D
1	Chapter 3: Applying Excel			
2				
3	**Data**			
4	Allocation base	Machine-hours		
5	Estimated manufacturing overhead cost	$100,000		
6	Estimated total amount of the allocation base	40,000	machine-hours	
7	Actual manufacturing overhead cost	$90,000		
8	Actual total amount of the allocation base	40,000	machine-hours	
9				
10	*Enter a formula into each of the cells marked with a ? below*			
11				
12	**Computation of the predetermined overhead rate**			
13	Estimated manufacturing overhead cost	$100,000		
14	Estimated total amount of the allocation base	40,000	machine-hours	
15	Predetermined overhead rate	$2.50	per machine-hour	
16				
17	**Computation of underapplied or overapplied manufacturing overhead**			
18	Actual manufacturing overhead cost	$ 90,000		
19	Manufacturing overhead cost applied to Work in Process during the year:			
20	Predetermined overhead rate	$2.50	per machine-hour	
21	Actual total amount of the allocation base	40,000	machine-hours	
22	Manufacturing overhead applied	$ 100,000		
23	Underapplied (overapplied) manufacturing overhead	$ (10,000)		
24				

Chapter 3 Requirement 3 | Chapter 3 Requirement 4 | Sheet

The manufacturing overhead is now overapplied by $10,000 rather than underapplied by $10,000 as it was when the estimated total amount of the allocation base was 10,000 machine-hours higher. This occurred because the predetermined overhead rate was $2.00 per machine-hour when the estimated total amount of the allocation base was 50,000 machine-hours and is now $2.50 per machine-hour as a consequence of the reduction in the estimated total amount of the allocation base to 40,000 machine-hours. Because the predetermined overhead rate is now larger and everything else is the same, more overhead was applied. In this case, the result is a switch from underapplied to overapplied overhead.

4. When the estimated total amount of the allocation base is changed back to 50,000 machine-hours and the actual manufacturing overhead cost is changed to $100,000, the worksheet looks like the following:



	A	B	C	D
1	Chapter 3: Applying Excel			
2				
3	**Data**			
4	Allocation base	Machine-hours		
5	Estimated manufacturing overhead cost	$100,000		
6	Estimated total amount of the allocation base	50,000	machine-hours	
7	Actual manufacturing overhead cost	$100,000		
8	Actual total amount of the allocation base	40,000	machine-hours	
9				
10	*Enter a formula into each of the cells marked with a ? below*			
11				
12	**Computation of the predetermined overhead rate**			
13	Estimated manufacturing overhead cost	$100,000		
14	Estimated total amount of the allocation base	50,000	machine-hours	
15	Predetermined overhead rate	$2.00	per machine-hour	
16				
17	**Computation of underapplied or overapplied manufacturing overhead**			
18	Actual manufacturing overhead cost	$ 100,000		
19	Manufacturing overhead cost applied to Work in Process during the year:			
20	Predetermined overhead rate	$2.00	per machine-hour	
21	Actual total amount of the allocation base	40,000	machine-hours	
22	Manufacturing overhead applied	$ 80,000		
23	Underapplied (overapplied) manufacturing overhead	$ 20,000		
24				

Chapter 3 Requirement 4 | Sheet2 | Sheet3

In part 2 above, manufacturing overhead was underapplied by $10,000. Manufacturing overhead is now underapplied by $20,000. This occurred because the actual manufacturing overhead cost increased by $10,000—from $90,000 to $100,000. Thus, the amount of the underapplied overhead also increased by $10,000.

The Foundational 15

1. The journal entry to record raw materials used in production is:

Work in Process	480,000	
Raw Materials		480,000

2. The ending balance in Raw Materials is:

Raw Materials			
Beg. Bal.	40,000		
(a)	510,000	(b)	480,000
End. Bal.	70,000		

3. The journal entry to record the labor costs is:

Work in Process	600,000	
Manufacturing Overhead	150,000	
Selling and administrative salaries	240,000	
Wages Payable		990,000

4. The total manufacturing overhead applied to production is computed as follows:

Actual direct labor-hours (a)	41,000
Predetermined overhead rate (b)	$16.25
Manufacturing overhead applied (a) × (b)	$666,250

5. The total manufacturing cost added to work in process is:

Direct materials used in production	$ 480,000
Direct labor	600,000
Manufacturing overhead applied	666,250
Total manufacturing cost	$1,746,250

The Foundational 15 (continued)

6. The journal entry is recorded as follows:

Finished Goods	1,680,000	
Work in Process		1,680,000

7. The ending balance in Work in Process is computed as follows:

Work in Process			
Beg. Bal.	18,000		
(b)	480,000		
(c)	600,000		
(f)	666,250	(g)	1,680,000
End. Bal.	84,250		

8. The total actual manufacturing overhead cost is as follows:

Indirect labor	$150,000
Depreciation, insurance, utilities, etc.....	500,000
Total actual manufacturing overhead cost	$650,000

9. The overapplied overhead is computed as follows:

Actual manufacturing overhead cost (a).....	$650,000
Manufacturing overhead applied (b)	$666,250
Overapplied overhead (a) – (b)	$(16,250)

10. The cost of goods available for sale is computed as follows:

Beginning finished goods inventory	$ 35,000
Add: Cost of goods manufactured	1,680,000
Cost of goods available for sale.....	$1,715,000

11. The journal entry is recorded as follows:

Cost of Goods Sold	1,690,000	
Finished Goods		1,690,000

The Foundational 15 (continued)

12. The ending balance in Finished Goods is:

Finished Goods			
Beg. Bal.	35,000		
(g)	1,680,000	(h)	1,690,000
End. Bal.	25,000		

13. The adjusted cost of goods sold is computed as follows:

Beginning finished goods inventory	$ 35,000
Cost of goods manufactured	1,680,000
Cost of goods available for sale	1,715,000
Ending finished goods inventory	25,000
Unadjusted cost of goods sold	1,690,000
Overapplied overhead	(16,250)
Adjusted cost of goods sold	$1,673,750

14. and 15.

The gross margin and net operating income are computed as follows:

Sales	$2,800,000
Cost of goods sold	1,673,750
Gross margin	1,126,250
Selling and administrative expenses ($240,000 + $367,000)	607,000
Net operating income	$ 519,250

Note: The selling and administrative expenses ($607,000) include selling and administrative salaries ($240,000) and various other selling and administrative expenses ($367,000).

Exercise 3-1 (10 minutes)

a.	Raw Materials	80,000	
	Accounts Payable.....		80,000
b.	Work in Process	62,000	
	Manufacturing Overhead	9,000	
	Raw Materials.....		71,000
c.	Work in Process	101,000	
	Manufacturing Overhead	11,000	
	Cash		112,000
d.	Manufacturing Overhead	175,000	
	Accumulated Depreciation ..		175,000

Exercise 3-2 (20 minutes)

Requirement 1

Cash			
		(a)	94,000
		(c)	132,000
		(d)	143,000

Raw Materials			
(a)	94,000	(b)	89,000
Bal.	5,000		

Work in Process			
(b)	78,000	(f)	342,000
(c)	112,000		
(e)	152,000		
Bal.	0		

Finished Goods			
(f)	342,000	(g)	342,000
Bal.	0		

Manufacturing Overhead			
(b)	11,000	(e)	152,000
(c)	20,000	(h)	22,000
(d)	143,000		
Bal.	0		

Cost of Goods Sold			
(g)	342,000		
(h)	22,000		
Bal.	364,000		

Requirement 2: The adjusted cost of goods sold is shown above as the ending balance in the Cost of Goods Sold T-account ($364,000).

Exercise 3-3 (20 minutes)

1. Schedule of cost of goods manufactured

Beginning work in process inventory.....			$56,000
Direct materials:			
Beginning raw materials inventory	$12,000		
Add: Purchases of raw materials	30,000		
Total raw materials available	42,000		
Deduct: Ending raw materials inventory	18,000		
Raw materials used in production	24,000		
Deduct: indirect materials used in production	5,000		
Direct materials used in production	$19,000		
Direct labor.....		58,000	
Manufacturing overhead applied to work in process..		87,000	
Total manufacturing costs added to production.....			164,000
Total manufacturing costs to account for			220,000
Deduct: Ending work in process inventory			65,000
Cost of goods manufactured			$155,000

Exercise 3-3 (20 minutes)

2. Schedule of Cost of Goods Sold:

Beginning finished goods inventory	$ 35,000
Add: Cost of goods manufactured	155,000
Cost of goods available for sale	190,000
Deduct: Ending finished goods inventory	42,000
Unadjusted cost of goods sold	148,000
Add: Underapplied overhead	4,000
Adjusted cost of goods sold	$152,000

Exercise 3-4 (10 minutes)

1. Manufacturing overhead incurred (a).....	$215,000
Actual direct labor-hours.....	11,500
× Predetermined overhead rate	$18.20
= Manufacturing overhead applied (b)	$209,300
Manufacturing overhead underapplied (a) – (b)	$5,700

2. Because manufacturing overhead is underapplied, the journal entry would increase cost of goods sold by $5,700 and the gross margin would decrease by $5,700.

Exercise 3-5 (30 minutes)

1.	a.	Raw Materials	210,000	
		Accounts Payable		210,000
	b.	Work in Process	178,000	
		Manufacturing Overhead	12,000	
		Raw Materials		190,000
	c.	Work in Process	90,000	
		Manufacturing Overhead	110,000	
		Salaries and Wages Payable		200,000
	d.	Manufacturing Overhead	40,000	
		Accumulated Depreciation		40,000
	e.	Manufacturing Overhead	70,000	
		Accounts Payable		70,000
	f.	Work in Process	240,000	
		Manufacturing Overhead		240,000
		30,000 MH × $8 per MH = $240,000.		
	g.	Finished Goods	520,000	
		Work in Process		520,000
	h.	Cost of Goods Sold	480,000	
		Finished Goods		480,000
		Accounts Receivable	600,000	
		Sales		600,000
		$480,000 × 1.25 = $600,000.		

2.

Manufacturing Overhead			
(b)	12,000	(f)	240,000
(c)	110,000		
(d)	40,000		
(e)	70,000		
			8,000 (Overapplied overhead)

Work in Process			
Bal.	42,000	(g)	520,000
(b)	178,000		
(c)	90,000		
(f)	240,000		
Bal.	30,000		

Exercise 3-6 (30 minutes)

1. Mason Company's schedule of cost of goods manufactured is as follows:

Beginning work in process inventory.....			$10,000
Direct materials:			
Beginning raw materials inventory	$7,000		
Add: Purchases of raw materials	118,000		
Total raw materials available	125,000		
Deduct: Ending raw materials inventory	15,000		
Direct materials used in production		$110,000	
Direct labor.....		70,000	
Manufacturing overhead applied to work in process..		90,000	
Total manufacturing costs added to production.....			270,000
Total manufacturing costs to account for			280,000
Deduct: Ending work in process inventory			5,000
Cost of goods manufactured			$275,000

Exercise 3-6 (continued)

2. Mason Company's schedule of cost of goods sold is as follows:

Beginning finished goods inventory	$ 20,000
Add: Cost of goods manufactured	275,000
Cost of goods available for sale	295,000
Deduct: Ending finished goods inventory	35,000
Unadjusted cost of goods sold	260,000
Deduct: Overapplied overhead*	10,000
Adjusted cost of goods sold	$250,000

* Actual manufacturing overhead cost of $80,000 – Manufacturing overhead applied of $90,000 = Overapplied overhead of $10,000.

Exercise 3-6 (continued)

3.

Mason Company
Income Statement

Sales		$524,000
Cost of goods sold ($260,000 – $10,000)		250,000
Gross margin		274,000
Selling and administrative expenses:		
Selling expenses	$140,000	
Administrative expense	63,000	203,000
Net operating income		$ 71,000

Exercise 3-7 (15 minutes)

1. Actual manufacturing overhead costs (a)...	$473,000	
Manufacturing overhead cost applied:		
19,400 MH × $25 per MH (b).....	485,000	
Overapplied overhead cost (a) – (b).....	$(12,000)	

2. Schedule of Cost of Goods Manufactured:

Beginning work in process inventory.....		$40,000
Direct materials:		
Beginning raw materials inventory	$ 20,000	
Add: Purchases of raw materials	400,000	
Total raw materials available	420,000	
Deduct: Ending raw materials inventory	30,000	
Raw materials used in production	390,000	
Deduct: indirect materials used in production	15,000	
Direct materials used in production	$375,000	
Direct labor.....		60,000
Manufacturing overhead applied to work in process..		485,000

	0	
Total manufacturing costs added to production.....		920,000
Total manufacturing costs to account for.....		960,000
Deduct: Ending work in process inventory		70,000
Cost of goods manufactured		$890,000

Exercise 3-8 (15 minutes)

1. Item (a): Actual manufacturing overhead costs incurred for the year.
   Item (b): Overhead cost applied to Work in Process for the year.
   Item (c): Cost of goods manufactured for the year.
   Item (d): Cost of goods sold for the year.

2. The journal entry to close the balance in the Manufacturing Overhead account to Cost of Goods Sold is:

Cost of Goods Sold	70,000	
Manufacturing Overhead		70,000

3. The underapplied overhead is allocated to Work in Process, Finished Goods, and Cost of Goods Sold based on the percentage of total overhead applied during the year that resides in each account as of the end of the year:

Work in Process	$ 19,500	5 %
Finished Goods	58,500	15
Cost of Goods Sold	312,000	80
Total cost	$390,000	100 %

Using these percentages, the journal entry would be as follows:

Work in Process (5% × $70,000)	3,500	
Finished Goods (15% × $70,000)	10,500	
Cost of Goods Sold (80% × $70,000)	56,000	
Manufacturing Overhead		70,000

Exercise 3-9 (30 minutes)

1. The overhead applied to work in process is computed as follows:

Machine-hours worked (a)	75,000	
Predetermined overhead rate (b)	$2.40	per MH
Overhead applied to work in process (a) × (b)..	$180,000	

This amount is shown in entry (a) below:

Manufacturing Overhead			
(Maintenance)	21,000	(a)	180,000
(Indirect materials)	8,000		
(Indirect labor)	60,000		
(Utilities)	32,000		
(Insurance)	7,000		
(Depreciation)	56,000		
Balance	4,000		

Work in Process	
(Direct materials)	710,000
(Direct labor)	90,000
(Overhead) (a)	180,000

2. Overhead is underapplied by $4,000 for the year, as shown in the Manufacturing Overhead account above. The entry to close out this balance to Cost of Goods Sold would be:

Cost of Goods Sold	4,000	
Manufacturing Overhead.....		4,000

Exercise 3-9 (continued)

3. When overhead is applied using a predetermined rate based on machine-hours, it is assumed that overhead cost is proportional to machine-hours. When the actual machine-hours turn out to be 75,000, the costing system assumes that the overhead will be 75,000 machine-hours × $2.40 per machine-hour, or $180,000. This is a drop of $12,000 from the initial estimated manufacturing overhead cost of $192,000. However, the actual manufacturing overhead cost did not drop by this much. The actual manufacturing overhead cost was $184,000—a drop of $8,000 from the estimate. The manufacturing overhead did not decline by the full $12,000 because of the existence of fixed costs and/or because overhead spending was not under control. These issues will be covered in more detail in later chapters.

Exercise 3-10 (30 minutes)

1. a.	Raw Materials	325,000	
	Accounts Payable		325,000
b.	Work in Process	232,000	
	Manufacturing Overhead	58,000	
	Raw Materials		290,000
c.	Work in Process	60,000	
	Manufacturing Overhead	120,000	
	Wages and Salaries Payable		180,000
d.	Manufacturing Overhead	75,000	
	Accumulated Depreciation		75,000
e.	Manufacturing Overhead	62,000	
	Accounts Payable		62,000
f.	Work in Process	300,000	
	Manufacturing Overhead		300,000

$$\text{Predetermined overhead rate} = \frac{\text{Estimated total manufacturing overhead cost}}{\text{Estimated total amount of the allocation base}}$$

$$= \frac{\$4{,}800{,}000}{240{,}000 \text{ MHs}} = \$20 \text{ per MH}$$

15,000 MH × $20 per MH = $300,000

2.

Manufacturing Overhead				Work in Process			
(b)	58,000	(f)	300,000	(b)	232,000		
(c)	120,000			(c)	60,000		
(d)	75,000			(f)	300,000		
(e)	62,000						

3. The cost of the completed job is $592,000 as shown in the Work in Process T-account in requirement 2. The journal entry is:

Finished Goods	592,000	
Work in Process		592,000

Exercise 3-10 (continued)

4. The unit product cost for this job would be:

$$\$592{,}000 \div 16{,}000 \text{ units} = \$37 \text{ per unit}$$

So, the portion of this job's costs that would be included in February's cost of goods sold is:

$$10{,}000 \text{ units} \times \$37 \text{ per unit} = \$370{,}000$$

Problem 3-11 (45 minutes)

1. The cost of raw materials used in production was:

Beginning raw materials inventory.....	$ 15,000
Add: Purchases of materials (debits)	120,000
Total raw materials available.....	135,000
Deduct: Ending raw materials inventory.	25,000
Raw materials used in production.....	$110,000

2. Of the $110,000 in materials requisitioned for production, $90,000 was debited to Work in Process as direct materials. Therefore, the difference of $20,000 was debited to Manufacturing Overhead as indirect materials.

3. Total factory wages accrued during the year (credits to the Factory Wages Payable account) $180,000
   Less direct labor cost (from Work in Process)..... 150,000
   Indirect labor cost..... $ 30,000

4. The cost of goods manufactured was $470,000—the credits to the Work in Process account.

5. The Cost of Goods Sold for the year was:

Beginning finished goods inventory	$ 40,000
Add: Cost of goods manufactured (from Work in Process) ..	470,000
Cost of goods available for sale.....	510,000
Deduct: Ending finished goods inventory	60,000
Cost of goods sold.....	$450,000

6. The predetermined overhead rate was:

$$\text{Predetermined overhead rate} = \frac{\text{Estimated total manufacturing overhead cost}}{\text{Estimated total amount of the allocation base}}$$

$$= \frac{\$240,000}{\$150,000 \text{ direct labor cost}} = 160\% \text{ of direct labor cost}$$

Problem 3-11 (continued)

7. Manufacturing overhead was overapplied by $10,000, computed as follows:

Actual manufacturing overhead cost for the year (debits to Manufacturing Overhead)	$230,000
Manufacturing overhead applied (debits to Work in Process)	240,000
Overapplied overhead	$(10,000)

8. The ending balance in Work in Process is $30,000. Direct materials make up $9,200 of this balance, and applied overhead makes up $12,800. The computations are:

Balance, Work in Process, 12/31 (a)		$30,000
Less: Direct labor cost (given)	8,000	
Applied overhead cost ($8,000 × 160%)	12,800	
Total conversion cost (b)		20,800
Direct materials cost (a) – (b)		$ 9,200

Problem 3-12 (30 minutes)

1. The predetermined overhead rate is computed as follows:

Estimated total manufacturing overhead (a)	$900,000	
Estimated total computer hours (b)	75,000	hours
Predetermined overhead rate (a) ÷ (b)	$12.00	per hour

Actual manufacturing overhead cost	$850,000
Manufacturing overhead applied to Work in Process during the year: 60,000 actual MHs × $12 per MH	720,000
Underapplied overhead cost	$130,000

2.

Cost of Goods Sold	130,000	
Manufacturing Overhead		130,000

3. The underapplied overhead would be allocated using the following percentages:

Overhead applied during the year in:		
Work in process	$ 36,000	5 %
Finished goods	180,000	25 %
Cost of goods sold	504,000	70 %
Total	$720,000	100 %

The entry to record the allocation of the underapplied overhead would be:

Work in Process (5% × $130,000)	6,500	
Finished Goods (25% × $130,000)	32,500	
Cost of Goods Sold (70% × $130,000)	91,000	
Manufacturing Overhead		130,000

Problem 3-12 (continued)

4. Comparing the two methods:

Cost of goods sold if the underapplied overhead is closed to cost of goods sold ($1,400,000 + $130,000)	$1,530,000
Cost of goods sold if the underapplied overhead is closed to Work in Process, Finished Goods, and Cost of Goods Sold ($1,400,000 + $91,000)	1,491,000
Difference in cost of goods sold	$ 39,000

Thus, net operating income will be $39,000 greater if the underapplied overhead is closed to Work in Process, Finished Goods, and Cost of Goods Sold rather than being closed to Cost of Goods Sold.

Problem 3-13 (30 minutes)

Schedule of cost of goods manufactured:

Beginning work in process inventory.....			$ 42,000
Direct materials:			
Beginning raw materials inventory....	$ 40,000		
Add: Purchases of raw materials	290,000		
Total raw materials available.....	330,000		
Deduct: Ending raw materials inventory	10,000		
Direct materials used in production.....		320,000	
Direct labor.....		78,000	
Manufacturing overhead applied to work in process..		285,000	
Total manufacturing costs added to production.....			683,000
Total manufacturing costs to account for			725,000

	0
Deduct: Ending work in process inventory	35,000
	0
Cost of goods manufactured.....	$690,000

Schedule of cost of goods sold:

Beginning finished goods inventory*	$ 50,000
Add: Cost of goods manufactured	690,000
Cost of goods available for sale*	740,000
Deduct: Ending finished goods inventory	80,000
Unadjusted cost of goods sold*.....	660,000
Deduct: Overapplied overhead ($270,000 – $285,000)	15,000
Adjusted cost of goods sold	$645,000

Problem 3-13 (continued)

Income statement:

Sales		$915,000
Cost of goods sold ($660,000 – $15,000)		645,000
Gross margin		270,000
Selling and administrative expenses:		
Selling expenses*	$140,000	
Administrative expense*	100,000	240,000
Net operating income*		$ 30,000

* Given in the problem

Problem 3-14 (60 minutes)

1. The predetermined overhead rate is computed as follows:

$$\text{Predetermined overhead rate} = \frac{\text{Estimated total manufacturing overhead cost}}{\text{Estimated total amount of the allocation base}}$$

$$= \frac{\$800{,}000}{\$500{,}000 \text{ direct materials cost}} = 160\%$$

2. Before the underapplied or overapplied overhead can be computed, we must determine the amount of direct materials used in production for the year.

Beginning raw materials inventory	$ 20,000
Add, Purchases of raw materials	510,000
Total raw materials available	530,000
Deduct: Ending raw materials inventory	80,000
Raw materials used in production	$450,000
Actual manufacturing overhead costs:	
Indirect labor	$170,000
Property taxes	48,000
Depreciation of equipment	260,000
Maintenance	95,000
Insurance	7,000
Rent, building	180,000
Total actual costs	760,000
Manufacturing overhead applied to work in process ($450,000 × 160%)	720,000
Underapplied overhead	$ 40,000

Problem 3-14 (continued)

3. Schedule of Cost of Goods Manufactured:

Beginning work in process inventory.....			$150,0
Direct materials:			
Beginning raw materials inventory	$ 20,000		
Add: Purchases of raw materials	510,000		
Total raw materials available	530,000		
Deduct: Ending raw materials inventory	80,000		
Direct materials used in production		450,000	
Direct labor.....		90,000	
Manufacturing overhead applied to work in process..		720,000	
Total manufacturing costs added to production.....			1,260,0
Total manufacturing costs to account for			1,410,0
Deduct: Ending work in process inventory			70,0
Cost of goods manufactured			$1,340,0

4. Unadjusted cost of goods sold:

Beginning finished goods inventory.....	$ 260,000
Add: Cost of goods manufactured.....	1,340,000
Cost of goods available for sale	1,600,000
Deduct: Ending finished goods inventory	400,000
Unadjusted cost of goods sold.....	$1,200,000

The underapplied overhead can either be closed out to Cost of Goods Sold or allocated between Work in Process, Finished Goods, and Cost of Goods Sold based on the overhead applied during the year in the ending balance in each of these accounts.

Problem 3-14 (continued)

5. The amount of overhead cost in Work in Process was:

$24,000 direct materials cost × 160% = $38,400

The amount of direct labor cost in Work in Process is:

Total ending work in process		$70,000
Deduct: Direct materials	$24,000	
Manufacturing overhead.....	38,400	62,400
Direct labor cost.....		$ 7,600

The completed schedule of costs in Work in Process was:

Direct materials.....	$24,000
Direct labor.....	7,600
Manufacturing overhead	38,400
Work in process inventory.....	$70,000

Problem 3-15 (120 minutes)

1. a.	Raw Materials	200,000	
	Accounts Payable		200,000
b.	Work in Process	185,000	
	Raw Materials		185,000
c.	Manufacturing Overhead	63,000	
	Utilities Expense	7,000	
	Accounts Payable		70,000
d.	Work in Process	230,000	
	Manufacturing Overhead	90,000	
	Salaries Expense	110,000	
	Salaries and Wages Payable		430,000
e.	Manufacturing Overhead	54,000	
	Accounts Payable		54,000
f.	Advertising Expense	136,000	
	Accounts Payable		136,000
g.	Manufacturing Overhead	76,000	
	Depreciation Expense	19,000	
	Accumulated Depreciation		95,000
h.	Manufacturing Overhead	102,000	
	Rent Expense	18,000	
	Accounts Payable		120,000
i.	Work in Process	390,000	
	Manufacturing Overhead		390,000

$$\text{Predetermined overhead rate} = \frac{\text{Estimated total manufacturing overhead cost}}{\text{Estimated total amount of the allocation base}}$$

$$= \frac{\$360{,}000}{900 \text{ DLHs}} = \$400 \text{ per DLH}$$

975 actual DLH × $400 per DLH = $390,000

Problem 3-15 (continued)

j.	Finished Goods	770,000	
	Work in Process		770,000
k.	Accounts Receivable	1,200,000	
	Sales		1,200,000
	Cost of Goods Sold	800,000	
	Finished Goods		800,000

Problem 3-15 (continued)

2.

Accounts Receivable			
(k)	1,200,000		

Sales			
		(k)	1,200,000

Raw Materials			
Bal.	30,000		185,000
(a)	200,000	(b)	
Bal.	45,000		

Cost of Goods Sold			
(k)	800,000		

Work in Process			
Bal.	21,000	(j)	770,000
(b)	185,000		
(d)	230,000		
(i)	390,000		
Bal.	56,000		

Manufacturing Overhead			
(c)	63,000	(i)	390,000
(d)	90,000		
(e)	54,000		
(g)	76,000		
(h)	102,000		
		Bal.	5,000

Finished Goods			
Bal.	60,000	(k)	800,000
(j)	770,000		
Bal.	30,000		

Advertising Expense			
(f)	136,000		

Accumulated Depreciation			
		(g)	95,000

Utilities Expense			
(c)	7,000		

Accounts Payable			
		(a)	200,000
		(c)	70,000
		(e)	54,000
		(f)	136,000
		(h)	120,000

Salaries Expense			
(d)	110,000		

Depreciation Expense			
(g)	19,000		

Salaries & Wages Payable			
		(d)	430,000

Rent Expense			
(h)	18,000		

Problem 3-15 (continued)

3. Schedule of Cost of Goods Manufactured

Beginning work in process inventory.....			$21,00
Direct materials:			
Beginning raw materials inventory	$ 30,000		
Add: Purchases of raw materials	200,000		
Total raw materials available	230,000		
Deduct: Ending raw materials inventory	45,000		
Direct materials used in production		185,000	
Direct labor.....		230,000	
Manufacturing overhead applied to work in process..		390,000	
Total manufacturing costs added to production.....			805,00
Total manufacturing costs to account for			826,00
Deduct: Ending work in process inventory			56,00
Cost of goods manufactured			$770,00

Problem 3-15 (continued)

4. Manufacturing Overhead	5,000	
Cost of Goods Sold		5,000

Schedule of cost of goods sold:

Beginning finished goods inventory	$ 60,000
Add: Cost of goods manufactured	770,000
Cost of goods available for sale	830,000
Deduct: Ending finished goods inventory	30,000
Unadjusted cost of goods sold	800,000
Deduct: Overapplied overhead	5,000
Adjusted cost of goods sold	$795,000

5.

Froya Fabrikker A/S
Income Statement

Sales		$1,200,000
Cost of goods sold		795,000
Gross margin		405,000
Selling and administrative expenses:		
Advertising expense	$136,000	
Utilities expense	7,000	
Salaries expense	110,000	
Depreciation expense	19,000	
Rent expense	18,000	290,000
Net operating income		$ 115,000

Problem 3-16 (60 minutes)

1. a.	Raw Materials	275,000	
	Accounts Payable		275,000
b.	Work in Process	220,000	
	Manufacturing Overhead	60,000	
	Raw Materials		280,000
c.	Work in Process	180,000	
	Manufacturing Overhead	72,000	
	Sales Commissions Expense	63,000	
	Administrative Salaries Expense	90,000	
	Salaries and Wages Payable		405,000
d.	Manufacturing Overhead	13,000	
	Rent Expense	5,000	
	Accounts Payable		18,000
e.	Manufacturing Overhead	57,000	
	Accounts Payable		57,000
f.	Advertising Expense	140,000	
	Accounts Payable		140,000
g.	Manufacturing Overhead	88,000	
	Depreciation Expense	12,000	
	Accumulated Depreciation		100,000
h.	Work in Process	297,000	
	Manufacturing Overhead		297,000

$$\text{Predetermined overhead rate} = \frac{\text{Estimated total manufacturing overhead cost}}{\text{Estimated total amount of the allocation base}}$$

$$= \frac{\$330{,}000}{\$200{,}000 \text{ direct labor cost}} = \frac{165\% \text{ of}}{\text{direct labor cost}}$$

$\$180{,}000$ actual direct labor cost $\times$ 165% = $\$297{,}000$

Problem 3-16 (continued)

i.	Finished Goods	675,000	
	Work in Process		675,000
j.	Cash	1,250,000	
	Sales		1,250,000
	Cost of Goods Sold	700,000	
	Finished Goods		700,000

2.

Raw Materials			
Bal.	25,000	(b)	280,000
(a)	275,000		
Bal.	20,000		

Work in Process			
Bal.	10,000	(i)	675,000
(b)	220,000		
(c)	180,000		
(h)	297,000		
Bal.	32,000		

Finished Goods			
Bal.	40,000	(j)	700,000
(i)	675,000		
Bal.	15,000		

Manufacturing Overhead			
(b)	60,000	(h)	297,000
(c)	72,000		
(d)	13,000		
(e)	57,000		
(g)	88,000		
		Bal.	7,000

Cost of Goods Sold			
(j)	700,000		

3. Manufacturing overhead is overapplied by $7,000 for the year. The entry to close this balance to Cost of Goods Sold would be:

Manufacturing Overhead	7,000	
Cost of Goods Sold		7,000

Problem 3-16 (continued)

4.

Gold Nest Company
Income Statement

Sales		$1,250,000
Cost of goods sold ($700,000 - $7,000)		693,000
Gross margin		557,000
Selling and administrative expenses:		
Sales commissions	$63,000	
Administrative salaries expense	90,000	
Rent expense	5,000	
Advertising expense	140,000	
Depreciation expense	12,000	310,000
Net operating income		$ 247,000

Problem 3-17 (60 minutes)

1. and 2.

Cash			
Bal.	63,000	(m)	785,000
(l)	850,000		
Bal.	128,000		

Accounts Receivable			
Bal.	102,000	(l)	850,000
(k)	925,000		
Bal.	177,000		

Raw Materials			
Bal.	30,000	(b)	200,000
(a)	185,000		
Bal.	15,000		

Prepaid Insurance			
Bal.	9,000	(g)	7,000
Bal.	2,000		

Videos in Process			
Bal.	45,000	(j)	550,000
(b)	170,000		
(f)	82,000		
(i)	290,000		
Bal.	37,000		

Finished Goods			
Bal.	81,000	(k)	600,000
(j)	550,000		
Bal.	31,000		

Studio and Equipment			
Bal.	730,000		

Accumulated Depreciation			
		Bal.	210,000
		(d)	84,000
		Bal.	294,000

Studio Overhead			
(b)	30,000	* (i)	290,000
(c)	72,000		
(d)	63,000		
(f)	110,000		
(g)	5,600		
		Bal.	9,400
(n)	9,400		

Depreciation Expense			
(d)	21,000		

Insurance Expense			
(g)	1,400		

* $280,000 ÷ 7,000 hours = $40 per hour;
7,250 hours × $40 per hour = $290,000

Advertising Expense	Miscellaneous Expense

(e)	130,000		(h)	8,600	

Problem 3-17 (continued)

Administrative Salaries Expense			
(f)	95,000		

Sales			
		(k)	925,000

Cost of Goods Sold			
(k)	600,000	(n)	9,400
Bal.	590,600		

Accounts Payable			
(m)	500,000	Bal.	160,000
		(a)	185,000
		(c)	72,000
		(e)	130,000
		(h)	8,600
		Bal.	55,600

Salaries & Wages Payable			
(m)	285,000	(f)	287,000
		Bal.	2,000

Capital Stock			
		Bal.	420,000

Retained Earnings			
		Bal.	270,000

3. Overhead is overapplied for the year by $9,400. Entry (n) above records the closing of this overapplied overhead balance to Cost of Goods Sold.

Problem 3-17 (continued)

4. Schedule of Cost of Goods Manufactured

Beginning videos in process inventory			$ 45,000
Direct materials:			
Beginning raw materials inventory	$ 30,000		
Add: Purchases of raw materials	185,000		
Total raw materials available	215,000		
Deduct: Ending raw materials inventory	15,000		
Raw materials used in production	200,000		
Deduct: indirect materials used in production	30,000		
Direct materials used in production		170,000	
Direct labor		82,000	
Manufacturing overhead applied to work in process		290,000	
Total manufacturing costs added to production			542,000
Total manufacturing costs to account for			587,000
Deduct: Ending videos in process inventory			37,000
Cost of goods manufactured			$550,000

The cost of goods manufactured from this schedule ($550,000) agrees with transaction "j."

Problem 3-17 (continued)

5.

Supreme Videos, Inc.
Schedule of Cost of Goods Sold

Beginning finished goods inventory.....	$ 81,000
Add: Cost of goods manufactured.....	550,000
Cost of goods available for sale	631,000
Deduct: Ending finished goods inventory	31,000
Unadjusted cost of goods sold.....	600,000
Deduct: Overapplied overhead	9,400
Adjusted cost of goods sold.....	$590,600

The unadjusted cost of goods sold ($600,000) agrees with transaction "k."

6.

Supreme Videos, Inc.
Income Statement
For the Year Ended December 31

Sales		$925,000
Cost of goods sold ($600,000 – $9,400)		590,600
Gross margin		334,400
Selling and administrative expenses:		
Depreciation expense.....	$ 21,000	
Advertising expense.....	130,000	
Administrative salaries	95,000	
Insurance expense.....	1,400	
Miscellaneous expense	8,600	256,000
Net operating income		$ 78,400

Case 3-18 (45 minutes)

1. Shaving 5% off the estimated direct labor-hours in the predetermined overhead rate will result in an artificially high overhead rate. The artificially high predetermined overhead rate is likely to result in overapplied overhead for the year. The cumulative effect of overapplying the overhead throughout the year is all recognized in December when the balance in the Manufacturing Overhead account is closed out to Cost of Goods Sold. If the balance were closed out every month or every quarter, this effect would be dissipated over the course of the year.

2. This question may generate lively debate. Where should Terri Ronsin's loyalties lie? Is she working for the general manager of the division or for the corporate controller? Is there anything wrong with the "Christmas bonus"? How far should Terri go in bucking her boss on a new job?

   While individuals can certainly disagree about what Terri should do, some of the facts are indisputable. First, understating direct labor-hours artificially inflates the overhead rate. This has the effect of inflating the Cost of Goods Sold in all months prior to December and overstating the costs of inventories. In December, the huge adjustment for overapplied overhead provides a big boost to net operating income. Therefore, the practice results in distortions in the pattern of net operating income over the year. In addition, because all of the adjustment is taken to Cost of Goods Sold, inventories are still overstated at year-end. This means, of course, that the net operating income for the entire year is also overstated.

   While Terri is in an extremely difficult position, her responsibilities under the IMA's Statement of Ethical Professional Practice seem to be clear. The Credibility Standard states that management accountants have a responsibility to "disclose all relevant information that could reasonably be expected to influence an intended user's understanding of the reports, analyses or recommendations." In our opinion, Terri should discuss this situation with her immediate supervisor in the controller's office at corporate headquarters. This step may bring her into direct conflict with the general manager of the division, so it would be a very difficult decision for her to make.

Case 3-18 (continued)

In the actual situation that this case is based on, the corporate controller's staff were aware of the general manager's accounting tricks, but top management of the company supported the general manager because "he comes through with the results" and could be relied on to hit the annual profit targets for his division. Personally, we would be very uncomfortable supporting a manager who will resort to deliberate distortions to achieve "results." If the manager will pull tricks in this area, what else might he be doing that is questionable or even perhaps illegal?

Appendix 3A
Job-Order Costing: A Microsoft Excel-Based Approach

Exercise 3A-1 (20 minutes)

The transactions are recorded as follows:

Transaction	Cash	Raw Materials	Work in Process	Finished Goods	Manufacturing Overhead		Retained Earnings
a.		$(56,000)	$56,000			=	
b.	$(40,000)		$40,000			=	
c.			$35,000		$(35,000)	=	
d.			$(110,000)	$110,000		=	
e.				$(90,000)		=	$(90,000)
f.	$160,000					=	$160,000
g.	$(18,000)					=	$(18,000)

Exercise 3A-2 (20 minutes)

The transactions are recorded as follows:

Transaction	Work in Process	Manufacturing Overhead	Prepaid Expenses	PP&E (net)		Accounts Payable	Retained Earnings
a.		$80,000			=	$80,000	
b.		$28,000		$(35,000)	=		$(7,000)
c.		$1,875	$(2,500)		=		$(625)
d.	$115,000	$(115,000)			=		
e.		$5,125			=		$5,125

Exercise 3A-3 (20 minutes)

The transactions are recorded as follows:

	Retained Earnings	
Transaction	Yes	No
a.		√
b.		√
c.	$(45,000)	
d.	$(21,000)	
e.	$450,000	
f.		√
g.		√
h.		√
i.		√
j.	$(220,000)	
k.		√

Problem 3A-4 (45 minutes)

The transactions are recorded as shown below. The ending balance sheet balances are calculated in row 20 of the spreadsheet.

	A	B	C	D	E	F	G	H	I	J	K	L
1		Morrison Company										
2		Transaction Analysis										
3		For the Month Ended January 31										
4												
5		**Transactions**	**Cash**	**Raw Materials**	**Work in Process**	**Finished Goods**	**Manufacturing Overhead**	**Prepaid Expenses**	**PP&E (net)**	=	**Accounts Payable**	**Retained Earnings**
6		Beginning balances @ 1/1	$ 32,000	$ 9,000	$ 4,000	$ 17,000	$ -	$ 2,000	$ 190,000	=	$ 7,000	$ 247,000
7	(a)	Raw material purchases		74,000						=	74,000	
8	(b)	Raw materials used in production		(77,000)	67,000		10,000			=		
9	(c)	Salaries and wages	(167,000)		95,000		35,000			=		(37,000)
10	(d)	Various overhead costs					33,000			=	33,000	
11	(e)	Depreciation					63,000		(90,000)	=		(27,000)
12	(f)	Various selling expenses	(27,000)							=		(27,000)
13	(g)	Expiration of prepaid insurance					960	(1,200)		=		(240)
14	(h)	Manufacturing overhead applied			132,000		(132,000)			=		
15	(i)	Cost of goods manufactured			(288,000)	288,000				=		
16	(j)	Sales	395,000							=		395,000
17	(k)	Cost of goods sold				(285,000)				=		(285,000)
18	(l)	Payments to creditors	(62,000)							=	(62,000)	
19	(m)	Underapplied overhead					(9,960)			=		(9,960)
20		Ending balances @ 1/31	$ 171,000	$ 6,000	$ 10,000	$ 20,000	$ -	$ 800	$ 100,000	=	$ 52,000	$ 255,800
21												

Problem 3A-4 | Problem 3A-6 | SOCGM | SOCGS | Income Statement

2. Since Morrison Company does not pay any dividends, its net operating income for the month of January equals the change in the balance of its Retained Earnings account ($255,800 – $247,000 = $8,800).

Problem 3A-5 (60 minutes)

1. The transactions are recorded as shown below. The ending balance sheet balances are calculated in row 22 of the spreadsheet.

1		Star Videos, Inc.											
2		Transaction Analysis											
3		For the Year Ended December 31											
5			**Cash**	**Accounts Receivable**	**Raw Materials**	**Videos in Process**	**Finished Videos**	**Manufacturing Overhead**	**Prepaid Insurance**	**Studio & Equipment (net)**	=	**Accounts Payable**	**Retained Earnings**
6		Beginning balance @1/1	$ 73,000	$ 96,000	$ 33,000	$ 47,000	$ 78,000		$ 8,000	$530,000	=	$ 150,000	$ 715,000
7	a.	Raw material purchases			183,000						=	183,000	
8	b.	Raw materials used			(210,000)	178,500		31,500			=		
9	c.	Utility costs						78,000			=	78,000	
10	d.	Depreciation charges						61,500		(82,000)	=		(20,500)
11	e.	Advertising									=	131,000	(131,000)
12	f.	Salaries & wages	(284,000)			84,000		105,000			=		(95,000)
13	g.	Prepaid insurance						4,900	(7,000)		=		(2,100)
14	h.	Miscellaneous marketing									=	9,600	(9,600)
15	i.	Applied overhead				290,000		(290,000)			=		
16	j.	Transfer completed videos to finished goods				(565,000)	565,000				=		
17	k.	Sales		930,000							=		930,000
18	l.	Transfer finished goods to cost of goods sold					(610,000)				=		(610,000)
19	m.	Cash collections from customers	880,000	(880,000)							=		
20	n.	Payments to suppliers	(515,000)								=	(515,000)	
21	o.	Overhead adjustment						9,100			=		9,100
22		Ending balance@ 12/31	$ 154,000	$ 146,000	$ 6,000	$ 34,500	$ 33,000	$ -	$ 1,000	$448,000	=	$ 36,600	$ 785,900
23													

Transaction Analysis | SOCGM | SOCGS | Income Statement | Sheet 2 | Sheet3 | Sheet4 | Sheet5 ...

Problem 3A-5 (continued)

2. The schedule of cost of goods manufactured is prepared as shown below.

	A	B	C	D
1	Star Videos, Inc.			
2	Schedule of Cost of Goods Manufactured			
3	For the Year Ended December 31			
4				
5	Beginning videos in process			$47,000
6	Direct materials:			
7	Beginning raw materials inventory	$ 33,000		
8	Purchases of raw materials	183,000		
9	Raw materials available	216,000		
10	Ending raw materials inventory	6,000		
11	Raw materials used in production	210,000		
12	Deduct: Indirect materials included in overhead	31,500		
13	Direct materials used in production		$ 178,500	
14	Direct labor		84,000	
15	Manufacturing overhead applied to videos in process		290,000	
16	Total manufacturing costs added to production			552,500
17	Total manufacturing costs to account for			599,500
18	Deduct: Ending videos in process			34,500
19	Cost of goods manufactured			$565,000
20				

Transaction Analysis | SOCGM | SOCGS | Ir ...

Problem 3A-5 (continued)

3. The schedule of cost of goods sold is prepared as shown below:

	A	B
1	Star Videos, Inc.	
2	Schedule of Cost of Goods Sold	
3	For the Year Ended December 31	
4		
5	Beginning finished videos inventory	$ 78,000
6	Cost of goods manufactured	565,000
7	Cost of goods available for sale	643,000
8	Ending finished videos inventory	33,000
9	Unadusted cost of goods sold	610,000
10	Less: Overapplied overhead	9,100
11	Adjusted cost of goods sold	$ 600,900
12		
13		

Transaction Ana ...

4. The income statement is prepared as shown below:

	A	B
1	Star Videos, Inc.	
2	Income Statement	
3	For the Year Ended December 31	
4		
5	Sales	$930,000
6	Cost of goods sold	600,900
7	Gross margin	329,100
8	Selling and administrative expenses	258,200
9	Net operating income	$ 70,900
10		

... SOCGM ...

Problem 3A-6 (60 minutes)

1. The transactions are recorded as shown below. The ending balance sheet balances are calculated in row 20 of the spreadsheet.

	A	B	C	D	E	F	G	H	I	J	K	L
1		Brooks Corporation										
2		Transaction Analysis										
3		For the Month Ended March 31										
4												
5	Transactions		**Cash**	**Raw Materials**	**Work in Process**	**Finished Goods**	**Manufacturing Overhead**	**Prepaid Expenses**	**PP&E (net)**	=	**Accounts Payable**	**Retained Earnings**
6		Beginning balances @ 3/1	$ 83,000	$ 18,000	$ 14,000	$ 22,000	$ -	$ 1,800	$175,000	=	$ 12,000	$ 301,800
7	(a)	Raw material purchases	(69,000)	69,000						=		
8	(b)	Raw materials used in production		(77,000)	67,000		10,000			=		
9	(c)	Salaries and wages	(178,000)		102,000		23,000			=		(53,000)
10	(d)	Various manufacturing overhead costs	(41,000)				41,000			=		
11	(e)	Depreciation					29,750		(35,000)	=		(5,250)
12	(f)	Various selling expenses								=	27,000	(27,000)
13	(g)	Expiration of prepaid insurance					270	(450)		=		(180)
14	(h)	Manufacturing overhead applied			101,000		(101,000)			=		
15	(i)	Cost of goods manufactured			(279,000)	279,000				=		
16	(j)	Sales	429,000							=		429,000
17	(k)	Cost of goods sold				(295,000)				=		(295,000)
18	(l)	Payments to creditors	(35,000)							=	(35,000)	
19	(m)	Underapplied overhead					(3,020)			=		(3,020)
20		Ending balances @ 3/31	$ 189,000	$ 10,000	$ 5,000	$ 6,000	$ -	$ 1,350	$140,000	=	$ 4,000	$ 347,350
21												

Problem 3A-4 | **Problem 3A-6** | SOCGM | SOCGS | Income Statement

Problem 3A-6 (continued)

The formula for computing the cost of goods manufactured that is included in the spreadsheet for requirement 1 is as follows:

Beginning work in process		$ 14,000
Total manufacturing costs:		
Direct materials	$67,000	
Direct labor	102,000	
Manufacturing overhead applied	101,000	270,000
Total costs to account for		284,000
Deduct: Ending work in process		5,000
Cost of goods manufactured		$279,000

The formula for computing the unadjusted cost of goods sold that is included in the spreadsheet for requirement 1 is as follows:

Beginning finished goods	$ 22,000
Cost of goods manufactured	279,000
Cost of goods available for sale	301,000
Deduct: Ending finished goods	6,000
Unadjusted cost of goods sold	$295,000

Problem 3A-6 (continued)

2. The schedule of the cost of goods manufactured is as follows:

	A	B	C	D
1	Brooks Corporation			
2	Schedule of Cost of Goods Manufactured			
3	For the Month Ended March 31			
4				
5	Beginning work in process			$14,000
6	Direct materials:			
7	Beginning raw materials inventory	$ 18,000		
8	Purchases of raw materials	69,000		
9	Raw materials available	87,000		
10	Ending raw materials inventory	10,000		
11	Raw materials used in production	77,000		
12	Deduct: Indirect materials included in overhead	10,000		
13	Direct materials used in production		$ 67,000	
14	Direct labor		102,000	
15	Manufacturing overhead applied to work in process		101,000	
16	Total manufacturing costs added to production			270,000
17	Total manufacturing costs to account for			284,000
18	Deduct: Ending work in process			5,000
19	Cost of goods manufactured			$ 279,000
20				

Problem 3A-4 | Problem 3A-6 | SOCGM | SO(...

Problem 3A-6 (continued)

3. The schedule of cost of goods sold is as follows:

	A	B
1	Brooks Corporation	
2	Schedule of Cost of Goods Sold	
3	For the Month Ended March 31	
4		
5	Beginning finished goods inventory	$ 22,000
6	Cost of goods manufactured	279,000
7	Cost of goods available for sale	301,000
8	Ending finished goods inventory	6,000
9	Unadusted cost of goods sold	295,000
10	Add: Underapplied overhead	3,020
11	Adjusted cost of goods sold	$ 298,020
12		

Problem 3A-4 ...

4. The income statement is as follows:

	A	B
1	Brooks Corporation	
2	Income Statement	
3	For the month ended March 31	
4		
5	Sales	$ 429,000
6	Cost of goods sold	298,020
7	Gross margin	130,980
8	Selling and administrative expenses	85,430
9	Net operating income	$ 45,550
10		

Problem 3A-4 ...