

9

Profit Planning

DISCUSSION QUESTIONS

1. Budgets are the quantitative expressions of plans. Budgets are used to translate the goals and strategies of an organization into operational terms.
2. Control is the process of setting standards, receiving feedback on actual performance, and taking corrective action whenever actual performance deviates materially from planned performance. Budgets are standards, and they are compared with actual costs and revenues to provide feedback.
3. The planning and control functions of budgeting can benefit all organizations, regardless of size. All organizations need to determine what their goals are and how best to obtain those goals. This is the planning function of budgeting. In addition, organizations can compare what actually happens with what was planned to see if the plans are unfolding as anticipated. This is the control function of budgeting.
4. Budgeting forces managers to plan, provides resource information for decision making, sets benchmarks for control and evaluation, and improves the functions of communication and coordination.
5. A master budget is the collection of all individual area and activity budgets. Operating budgets are concerned with the income-generating activities of a firm. Financial budgets are concerned with the inflows and outflows of cash and with planned capital expenditures.
6. The sales forecast is a critical input for building the sales budget. However, it is not necessarily equivalent to the sales budget. Upon receiving the sales forecast, management may decide that the firm can do better than the forecast indicates. Consequently, actions may be taken to increase the sales potential for the coming year (e.g., increasing advertising). This adjusted forecast then becomes the sales budget.
7. Yes. All budgets are founded on the sales budget. Before a production budget can be created, it must have the planned sales. The manufacturing budgets, in turn, depend on the production budget. The same is true for the financial budgets since sales is a critical input for budgets in that category.
8. Goal congruence is important because it means that the employees of an organization are working toward the goals of that organization.
9. Frequent feedback is important so that corrective action can be taken, increasing the likelihood of achieving budgetary goals.

- 10.** Both monetary and nonmonetary incentives are used to encourage employees of an organization to achieve the organization's goals. Monetary incentives appeal to the economic needs of an individual, and nonmonetary incentives appeal to the psychological needs. Since individuals are motivated by both economic and psychological factors, both types of incentives ought to be present in a good budgetary system.
- 11.** Participative budgeting is a system of budgeting that gives subordinate managers a say in how the budgets are established. Participative budgeting fosters creativity and communicates a sense of responsibility to subordinate managers. It also creates a higher likelihood of goal congruence since managers have more of a tendency to make the budget's goals their own personal goals.
- 12.** Agree. Individuals who are not challenged tend to lose interest and maintain a lower level of performance. A challenging, but achievable, budget tends to extract a higher level of performance.
- 13.** Top management should provide guidelines and statistical input (e.g., industrial forecasts) and review the budgets to minimize the possibility of budgetary slack and ensure that the budget is compatible with the strategic objectives of the firm. Top management should also provide the incentive and reward system associated with the budgetary system.
- 14.** By underestimating revenues and overestimating costs, the budget is more easily achieved.
- 15.** To meet budget, it is possible to take actions that reduce costs in the short run but increase them in the long run. For example, lower-priced, lower-quality materials can be substituted for the usual quality of materials.

MULTIPLE-CHOICE EXERCISES

- 9-1. d**
- 9-2. e**
- 9-3. c**
- 9-4. e**
- 9-5. a**
- 9-6. d**
- 9-7. e**
- 9-8. a**
- 9-9. c**
- 9-10. a**
- 9-11. a**
- 9-12. b**
- 9-13. b**
- 9-14. d**
- 9-15. d**
- 9-16. a**
- 9-17. b**
- 9-18. e**
- 9-19. e**
- 9-20. e**

CORNERSTONE EXERCISES

CE 9-21

Patrick Inc. Sales Budget For the Coming Quarter				
	January	February	March	1st Quarter Total
Units	41,000	38,000	50,000	129,000
Price	\$ 35	\$ 35	\$ 35	\$ 35
Sales	<u>\$1,435,000</u>	<u>\$1,330,000</u>	<u>\$1,750,000</u>	<u>\$4,515,000</u>

CE 9-22

Patrick Inc. Production Budget For the Coming Quarter				
	January	February	March	1st Quarter Total
Sales	41,000	38,000	50,000	129,000
Desired ending inventory	9,500	12,500	12,750*	12,750
Total needs	50,500	50,500	62,750	141,750
Less: Beginning inventory	6,700	9,500	12,500	6,700
Units to be produced	<u>43,800</u>	<u>41,000</u>	<u>50,250</u>	<u>135,050</u>

*April sales of 51,000 \times 0.25 = 12,750

CE 9-23

- Ending inventory for December = $0.15 \times 5.5 \text{ gal. of chemicals} \times 43,800 \text{ units}$
= 36,135
Ending inventory for January = $0.15 \times 5.5 \text{ gal. of chemicals} \times 41,000 \text{ units}$
= 33,825
Ending inventory for February = $0.15 \times 5.5 \text{ gal. of chemicals} \times 50,250 \text{ units}$
= 41,456

Beginning inventory for January = Ending inventory for December

CE 9-23 (Continued)

2. Direct materials purchases budget—Chemicals in Gallons:

	<u>January</u>	<u>February</u>
Production in units	43,800	41,000
× Gallons per unit	5.5	5.5
Gallons for production	240,900	225,500
Desired ending inventory	33,825	41,456
Needed	274,725	266,956
Less: Beginning inventory*	36,135	33,825
Purchases	238,590	233,131
× Price per gallon	2.00	2.00
Dollar purchases	<u>\$477,180</u>	<u>\$466,262</u>

*Beginning inventory for January equals ending inventory for December.

3. Ending inventory for December = $0.15 \times 1 \text{ drum} \times 43,800 \text{ units}$
 = 6,570
 Ending inventory for January = $0.15 \times 1 \text{ drum} \times 41,000 \text{ units}$
 = 6,150
 Ending inventory for February = $0.15 \times 1 \text{ drum} \times 50,250 \text{ units}$
 = 7,538

4. Direct materials purchases budget—Drums:

	<u>January</u>	<u>February</u>
Production in units	43,800	41,000
× Drums per unit	1	1
Drums for production	43,800	41,000
Desired ending inventory	6,150	7,538
Needed	49,950	48,538
Less: Beginning inventory*	6,570	6,150
Purchases	43,380	42,388
× Price per drum	\$ 1.60	\$ 1.60
Dollar purchases	<u>\$69,408</u>	<u>\$67,821</u>

*Beginning inventory for January equals ending inventory for December.

CE 9-24

Direct Labor Budget:	January	February	March	Total
Units to be produced	43,800	41,000	50,250	135,050
× Direct labor hrs per unit	0.3	0.3	0.3	0.3
Total direct labor hrs	13,140	12,300	15,075	40,515
× Wage rate	\$ 18	\$ 18	\$ 18	\$ 18
Direct labor cost	<u>\$236,520</u>	<u>\$221,400</u>	<u>\$271,350</u>	<u>\$729,270</u>

CE 9-25

Overhead:	January	February	March	Total
Total direct labor hrs	13,140	12,300	15,075	40,515
× Variable overhead rate	\$ 0.70	\$ 0.70	\$ 0.70	\$ 0.70
Total variable overhead	\$ 9,198	\$ 8,610	\$10,553	\$28,361
Add: Fixed overhead	2,750	2,750	2,750	8,250
Total overhead	<u>\$11,948</u>	<u>\$11,360</u>	<u>\$13,303</u>	<u>\$36,611</u>

CE 9-26

1. Direct materials.....	\$14.00
Direct labor (1.9 hr × \$16).....	30.40
Variable overhead (1.9 hr × \$1.20).....	2.28
Fixed overhead (1.9 hr × \$1.60).....	3.04
Unit product cost.....	<u>\$49.72</u>
2. Cost of ending inventory (\$49.72 × 675).....	<u>\$33,561</u>

CE 9-27

Andrews Company	
Cost of Goods Sold Budget	
For the Coming Year	
Direct materials (\$14 × 20,000).....	\$280,000
Direct labor (1.9 × \$16 × 20,000).....	608,000
Variable overhead (1.9 × \$1.20 × 20,000).....	45,600
Fixed overhead (1.9 × \$1.60 × 20,000).....	60,800
Total manufacturing cost.....	<u>\$994,400</u>
Less: Ending inventory (\$49.72 × 675).....	33,561
Cost of goods sold.....	<u>\$960,839</u>

CE 9-28

Fazel Company Selling and Administrative Expenses Budget For the Coming Year	
Variable selling expenses ($0.03 \times \$19,730,000$).....	\$ 591,900
Fixed expenses:	
Salaries.....	\$ 960,000
Utilities.....	365,000
Office space.....	230,000
Advertising.....	1,200,000
Total fixed expenses.....	2,755,000
Total selling and administrative expenses.....	<u>\$3,346,900</u>

CE 9-29

Oliver Company Budgeted Income Statement For the Coming Year	
Sales ($\$10.80 \times 160,000$).....	\$1,728,000
Cost of goods sold ($\$6.30 \times 160,000$).....	<u>1,008,000</u>
Gross margin.....	\$ 720,000
Less: Variable selling and administrative expenses ($\$1.10 \times 160,000$).....	176,000
Fixed selling and administrative expenses.....	<u>423,000</u>
Operating income.....	\$ 121,000
Less: Income taxes ($0.35 \times \$121,000$).....	<u>42,350</u>
Net income.....	<u>\$ 78,650</u>

CE 9-30

	<u>August</u>	<u>September</u>
June:		
$(\$100,800 \times 0.25)$	\$25,200	-
July:		
$(\$77,000 \times 0.50)$	38,500	
$(\$77,000 \times 0.25)$		\$19,250
August:		
$(\$86,800 \times 0.20)$	17,360	
$(\$86,800 \times 0.50)$		43,400
September:		
$(\$91,000 \times 0.20)$	-	18,200
Total cash receipts	<u><u>\$81,060</u></u>	<u><u>\$80,850</u></u>

CE 9-31

1. Payments for purchases from:	
April $(\$374,400 \times 0.80)$	\$299,520
May $(\$411,200 \times 0.20)$	82,240
Total cash needed for May.....	<u><u>\$381,760</u></u>
2. Payments for purchases from:	
May $(\$411,200 \times 0.80)$	\$328,960
June $(\$416,000 \times 0.20)$	83,200
Total cash needed for June.....	<u><u>\$412,160</u></u>

CE 9-32

1. Cash receipts in October from:	
Cash sales $(\$157,000 \times 0.85)$	\$133,450
Payments on September credit sales*.....	7,623
Payments on October credit sales**.....	16,485
Total cash expected	<u><u>\$157,558</u></u>

* $\$181,500 \times 0.15 \times 0.28 = \$7,623$

** $\$157,000 \times 0.15 \times 0.70 = \$16,485$

2. Payments for food and supplies purchases from:	
September $(\$130,000 \times 0.75)$	\$ 97,500
October $(\$116,000 \times 0.25)$	29,000
Total cash needed for October.....	<u><u>\$126,500</u></u>

CE 9-32 (Continued)

3. Beginning balance.....	\$ 2,147
Cash receipts.....	157,558
Cash available.....	<u>\$159,705</u>
Less:	
Payments for food and supplies purchases.....	\$126,500
Owners' draw.....	6,000
Workers' wages*.....	7,300
Utilities.....	5,950
Rent.....	4,100
Insurance.....	<u>1,200</u>
Total disbursements.....	<u>\$151,050</u>
Ending balance.....	<u><u>\$ 8,655</u></u>

*September wage payments = $(\$7,300 \times 0.10)$;

October wage payments = $(\$7,300 \times 0.90)$

EXERCISES

E 9-33

- | | |
|---------|-------|
| 1. h, i | 6. f |
| 2. e | 7. f |
| 3. h, f | 8. a |
| 4. g | 9. c |
| 5. d | 10. b |

E 9-34

Stillwater Designs Sales Budget For the Year Ended December 31, 2012					
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Year
S12L7					
Units	800	2,200	5,600	4,600	13,200
Price	\$ 475	\$ 475	\$ 475	\$ 475	\$ 475
Sales	<u>\$380,000</u>	<u>\$1,045,000</u>	<u>\$2,660,000</u>	<u>\$2,185,000</u>	<u>\$6,270,000</u>
S12L5					
Units	1,300	1,400	5,300	3,900	11,900
Price	\$ 300	\$ 300	\$ 300	\$ 300	\$ 300
Sales	<u>\$390,000</u>	<u>\$ 420,000</u>	<u>\$1,590,000</u>	<u>\$1,170,000</u>	<u>\$3,570,000</u>
Total					
Sales	<u><u>\$770,000</u></u>	<u><u>\$1,465,000</u></u>	<u><u>\$4,250,000</u></u>	<u><u>\$3,355,000</u></u>	<u><u>\$9,840,000</u></u>

2. Stillwater Designs will use the sales budget in planning as the basis for the production budget and the succeeding budgets of the master budget. The company can also compare actual sales against the budget to see if expectations were achieved.

E 9-35

Stillwater Designs Production Budget for S12L7 For the Year Ended December 31, 2012					
	<u>1st Qtr.</u>	<u>2nd Qtr.</u>	<u>3rd Qtr.</u>	<u>4th Qtr.</u>	<u>Year</u>
Sales	800	2,200	5,600	4,600	13,200
Desired ending inventory	440	1,120	920	180	180
Total needs	1,240	3,320	6,520	4,780	13,380
Less: Beginning inventory	340	440	1,120	920	340
Units produced	<u>900</u>	<u>2,880</u>	<u>5,400</u>	<u>3,860</u>	<u>13,040</u>

Stillwater Designs Production Budget for S12L5 For the Year Ended December 31, 2012					
	<u>1st Qtr.</u>	<u>2nd Qtr.</u>	<u>3rd Qtr.</u>	<u>4th Qtr.</u>	<u>Year</u>
Sales	1,300	1,400	5,300	3,900	11,900
Desired ending inventory	420	1,590	1,170	360	360
Total needs	1,720	2,990	6,470	4,260	12,260
Less: Beginning inventory	170	420	1,590	1,170	170
Units produced	<u>1,550</u>	<u>2,570</u>	<u>4,880</u>	<u>3,090</u>	<u>12,090</u>

E 9-36

1.	Smee Inc. Production Budget For the First Quarter of the Year				
		January	February	March	Total
Sales		50,000	55,000	60,000	165,000
Desired ending inventory		8,250	9,000	8,700	8,700
Total needs		58,250	64,000	68,700	173,700
Less: Beginning inventory		36,000	8,250	9,000	36,000
Units produced		22,250	55,750	59,700	137,700

2.	Smee Inc. Direct Materials Purchases Budget For January and February				
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Jars:

	January	February	Total
Production.....	22,250	55,750	78,000
× 1 jar.....	1	1	1
Jars for production	22,250	55,750	78,000
Desired Inventory.....	11,150	11,940	11,940
Total needs.....	33,400	67,690	89,940
Less: Beginning inventory.....	4,450	11,150	4,450
Jars purchased.....	28,950	56,540	85,490

Peanuts:

Production.....	22,250	55,750	78,000
× 24 ounces.....	24	24	24
Ounces for Production.....	534,000	1,338,000	1,872,000
Desired Inventory.....	267,600	286,560	286,560
Total needs.....	801,600	1,624,560	2,158,560
Less: Beginning inventory.....	106,800	267,600	106,800
Ounces purchased.....	694,800	1,356,960	2,051,760

E 9-37

Pumpro Inc. Production Budget For the Second Quarter				
	April	May	June	Total
Sales	200,000	240,000	220,000	660,000
Desired ending inventory	72,000	66,000	78,000	78,000
Total needs	272,000	306,000	298,000	738,000
Less: Beginning inventory	40,000	72,000	66,000	40,000
Units produced	232,000	234,000	232,000	698,000

E 9-38

Fang Company Direct Materials Purchases Budget For July, August, and September				
	July	August	September	Total
Units to be produced	2,800	20,000	30,000	52,800
× Direct materials per unit (ounces)	5	5	5	5
Production needs	14,000	100,000	150,000	264,000
Desired ending inventory (ounces)	20,000	30,000	2,000	2,000
Total needs	34,000	130,000	152,000	266,000
Less: Beginning inventory	2,800	20,000	30,000	2,800
Direct materials to be purchased (ounces)	31,200	110,000	122,000	263,200
× Cost per ounce	\$ 0.08	\$ 0.08	\$ 0.08	\$ 0.08
Total purchase cost	\$ 2,496	\$ 8,800	\$ 9,760	\$ 21,056

E 9-39

Joaquin Company Direct Labor Budget For March, April, and May				
	March	April	May	Total
Units to be produced	2,000	12,000	13,000	27,000
× Direct labor time per unit (hours)	0.30	0.30	0.30	0.30
Total hours needed	600	3,600	3,900	8,100
× Cost per hour	\$ 20	\$ 20	\$ 20	\$ 20
Total direct labor cost	<u>\$12,000</u>	<u>\$72,000</u>	<u>\$78,000</u>	<u>\$162,000</u>

E 9-40

Alger Inc. Sales Budget For the Coming Year			
Model	Units	Price	Total Sales
LB-1.....	36,750	\$32.00	\$1,176,000
LB-2.....	18,900	20.00	378,000
WE-6.....	25,200	10.50	264,600
WE-7.....	17,010	10.00	170,100
WE-8*.....	13,800	18.00	248,400
WE-9*.....	8,000	22.00	176,000
Total			<u>\$2,413,100</u>

*Recall that WE-8 and WE-9 sales from last year were only from the last half of the year. Current year sales are estimated to be twice those amounts.

E 9-41

1. **Jani's Flowers and Gifts**
Production Budget for Gift Baskets
For September, October, November, and December

	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
Sales.....	250	200	230	380
Desired ending inventory.....	10	12	19	5
Needed.....	260	212	249	385
Less: Beginning inventory...	13	10	12	19
production.....	<u>247</u>	<u>202</u>	<u>237</u>	<u>366</u>

2. **Jani's Flowers and Gifts**
Direct Materials Purchases Budget
For September, October, and November

Fruit

	<u>September</u>	<u>October</u>	<u>November</u>
Production.....	247	202	237
× Pounds of fruit	1	1	1
required for production.....	247	202	237
Desired inventory.....	10	12	18
Total needs.....	257	214	255
Less: Beginning inventory.....	12	10	12
Pounds purchased.....	<u>245</u>	<u>204</u>	<u>243</u>

Small gifts

Production.....	247	202	237
× Items required.....	6	6	6
Needed for Production.....	1,482	1,212	1,422
Desired inventory.....	364	427	659
Total needs.....	1,846	1,639	2,081
Less: Beginning inventory.....	445	364	427
Items purchased.....	<u>1,401</u>	<u>1,275</u>	<u>1,654</u>

3. December includes the holiday season and is a time when many gifts are given. Jani has factored this into her budgeting. January, on the other hand, is a month with few national holidays or gift-giving occasions. As a result, Jani has forecast fewer gift baskets.

E 9-42

1. Credit sales in May = $\$240,000 \times 0.65$ = $\$156,000$
 Credit sales in June = $\$230,000 \times 0.65$ = $\$149,500$
 Credit sales in July = $\$240,000 \times 0.65$ = $\$156,000$
 Credit sales in August = $\$250,000 \times 0.65$ = $\$162,500$

2.

Lopez Inc.
Schedule of Cash Receipts
For July and August

	<u>July</u>	<u>August</u>
Cash sales.....	\$ 84,000	\$ 87,500
Payments on account:		
From May credit sales:		
$(0.05 \times \$156,000)$	7,800	0
From June credit sales:		
$(0.68 \times \$149,500)$	101,660	
$(0.05 \times \$149,500)$		7,475
From July credit sales:		
$(0.25 \times \$156,000)$	39,000	
$(0.68 \times \$156,000)$		106,080
From August credit sales:		
$(0.25 \times \$162,500)$		40,625
Cash receipts.....	<u>\$232,460</u>	<u>\$241,680</u>

E 9-43

1.

Fahrad Inc.
Schedule of Cash Receipts
For July

Payments on account:	
From May credit sales:	
$(0.22 \times \$242,000)$	\$ 53,240
From June credit sales:	
$(0.64 \times \$253,000)$	161,920
From July credit sales:	
$(0.10 \times \$231,000)$	23,100
Less: July cash discount	
$(0.02 \times \$23,100)$	(462)
Cash receipts.....	<u>\$237,798</u>

E 9-43 (Continued)

2. Fahrad Inc.	
Schedule of Cash Receipts	
For August	
Payments on account:	
From June credit sales:	
$(0.22 \times \$253,000)$	\$ 55,660
From July credit sales:	
$(0.64 \times \$231,000)$	147,840
From August credit sales:	
$(0.10 \times \$275,000)$	27,500
Less: August cash discount	
$(0.02 \times \$27,500)$	(550)
Cash receipts	<u>\$230,450</u>

E 9-44

Draper Company	
Schedule of Cash Payments	
For August	
Payments on accounts payable:	
From July purchases $(0.85 \times \$82,000)$	\$ 69,700
From August purchases $(0.15 \times \$69,000)$	10,350
Direct labor payments:	
From July $(0.10 \times \$34,500)$	3,450
From August $(0.90 \times \$36,700)$	33,030
Overhead $(\$83,200 - \$5,900)$	77,300
Loan repayment $[\$15,000 + (\$15,000 \times 0.09 \times 4/12)]$	15,450
Cash payments	<u>\$209,280</u>

E 9-45

Cash Budget For June		
Beginning cash balance.....	\$ 1,230	
Collections:		
Cash sales.....	19,500	
Credit sales:		
Current month (\$52,000 × 40%).....	20,800	
May credit sales (\$35,000 × 35%).....	12,250	
April credit sales*.....	5,896	
Total cash available.....		\$59,676
Less disbursements:		
Inventory purchases:		
Current month (\$71,500 × 65% × 20%).....	\$ 9,295	
Prior month (\$53,000 × 65% × 80%).....	27,560	
Salaries and wages.....	12,500	
Rent.....	4,340	
Taxes.....	6,780	
Total cash needs.....		60,475
Excess of cash available over needs.....		\$ (799)

*\$28,900 × 20% = \$5,780

\$5,780 × 0.02 = \$116

\$5,780 + \$116 = \$5,896

2. Yes, the business does show a negative cash balance for the month of June. A negative budgeted cash balance is unacceptable. The easiest way to deal with it would be for the owner to consider taking less cash salary.

PROBLEMS

P 9-46

Morrissey Law Firm Schedule of Cash Receipts For August and September			
		August	September
Cash fees.....		\$ 48,000	\$ 58,000
Received from sales in:			
June	(0.80)(0.17)(\$250,000)(1.03).....	35,020	-
July	(0.80)(0.70)(\$240,000).....	134,400	-
	(0.80)(0.17)(\$240,000)(1.03).....		33,619
August	(0.80)(0.10)(\$240,000).....	19,200	
	(0.80)(0.70)(\$240,000).....		134,400
September	(0.80)(0.10)(\$290,000).....		23,200
Total.....		<u>\$236,620</u>	<u>\$249,219</u>

P 9-47

1.	Allison Manufacturing For the Quarter Ended March 31
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a. Schedule 1: Sales Budget

	January	February	March	Total
Units	40,000	50,000	60,000	150,000
× Selling Price	\$ 205	\$ 205	\$ 205	\$ 205
Sales	<u>\$8,200,000</u>	<u>\$10,250,000</u>	<u>\$12,300,000</u>	<u>\$30,750,000</u>

b. Schedule 2: Production Budget

	January	February	March	Total
Sales (Schedule 1)	40,000	50,000	60,000	150,000
Desired ending inventory	40,000	48,000	48,000	48,000
Total needs	80,000	98,000	108,000	198,000
Less: Beginning inventory	32,000	40,000	48,000	32,000
Units to be produced	<u>48,000</u>	<u>58,000</u>	<u>60,000</u>	<u>166,000</u>

P 9-47 (Continued)

c. Schedule 3: Direct Materials Purchases Budget

	January		February		March		Total	
	Metal	Component	Metal	Component	Metal	Component	Metal	Component
Units to be produced	48,000	48,000	58,000	58,000	60,000	60,000	166,000	166,000
× Direct materials	10	6	10	6	10	6	10	6
Production needs	480,000	288,000	580,000	348,000	600,000	360,000	1,660,000	996,000
Desired ending inventory	290,000	174,000	300,000	180,000	308,000*	184,800*	308,000	184,800
Total needs	770,000	462,000	880,000	528,000	908,000	544,800	1,968,000	1,180,800
Less: Beginning inventory	240,000	144,000	290,000	174,000	300,000	180,000	240,000	144,000
Direct materials to be purchased	530,000	318,000	590,000	354,000	608,000	364,800	1,728,000	1,036,800
× Cost per unit	\$ 8	\$ 5	\$ 8	\$ 5	\$ 8	\$ 5	\$ 8	\$ 5
Total cost	\$4,240,000	\$1,590,000	\$4,720,000	\$1,770,000	\$4,864,000	\$1,824,000	\$13,824,000	\$5,184,000

* April production = $60,000 + (62,000 \times 0.80) - 48,000 = 61,600$

Desired ending inventory of metal = $(61,600 \times 10) \times 0.50$

Desired ending inventory of components = $(61,600 \times 6) \times 0.50$

P 9-47 (Continued)

d. Schedule 4: Direct Labor Budget

	January	February	March	Total
Units to be produced (Schedule 2)	48,000	58,000	60,000	166,000
× Direct labor time per unit (hours)	3	3	3	3
Total hours needed	144,000	174,000	180,000	498,000
× Cost per hour	\$ 14.25	\$ 14.25	\$ 14.25	\$ 14.25
Total cost	<u>\$2,052,000</u>	<u>\$2,479,500</u>	<u>\$2,565,000</u>	<u>\$7,096,500</u>

e. Schedule 5: Overhead Budget

	January	February	March	Total
Budgeted direct labor (Schedule 4)	144,000	174,000	180,000	498,000
× Variable overhead rate	\$2.40	\$2.40	\$2.40	\$2.40
Budgeted variable overhead	\$345,600	\$417,600	\$432,000	\$1,195,200
Budgeted fixed overhead	338,000	338,000	338,000	1,014,000
Total overhead	<u>\$683,600</u>	<u>\$755,600</u>	<u>\$770,000</u>	<u>\$2,209,200</u>

P 9-47 (Continued)**f. Schedule 6: Selling and Administrative Expenses Budget**

	<u>January</u>	<u>February</u>	<u>March</u>	<u>Total</u>
Planned sales (Schedule 1)	40,000	50,000	60,000	150,000
x Variable selling and administrative expenses per unit	\$ 3.60	\$ 3.60	\$ 3.60	\$ 3.60
Total variable expenses	<u>\$144,000</u>	<u>\$180,000</u>	<u>\$216,000</u>	<u>\$540,000</u>
Fixed selling and administrative expenses				
Salaries	\$ 50,000	\$ 50,000	\$ 50,000	\$150,000
Depreciation	40,000	40,000	40,000	120,000
Other	20,000	20,000	20,000	60,000
Total fixed expenses	<u>\$110,000</u>	<u>\$110,000</u>	<u>\$110,000</u>	<u>\$330,000</u>
Total selling and administrative expenses	<u><u>\$254,000</u></u>	<u><u>\$290,000</u></u>	<u><u>\$326,000</u></u>	<u><u>\$870,000</u></u>

P 9-47 (Continued)**g. Schedule 7: Ending Finished Goods Inventory Budget****Unit cost computation:****Direct materials:**

Metal (10 lbs. × \$8)	=	\$80	
Comp. (6 units × \$5)	=	30	\$110.00
Direct labor (3 × \$14.25)	=		42.75

Overhead:

Variable (3 × \$2.40)			7.20
Fixed [3 × (\$1,014,000/498,000)]			6.11 *
Total unit cost			<u>\$166.06</u>

*Rounded

Finished goods	=	Units × Unit cost
inventory	=	48,000 × \$166.06
	=	\$7,970,880

h. Schedule 8: Cost of Goods Sold Budget**Direct materials used (Schedule 3)**

Metal (1,660,000 × \$8)*.....	\$13,280,000	
Components (996,000 × \$5)**.....	4,980,000	\$18,260,000
Direct labor used (Schedule 4).....		7,096,500
Overhead (Schedule 5).....		2,209,200
Budgeted manufacturing costs.....		<u>\$27,565,700</u>
Add: Beginning finished goods		
(32,000 × \$166.06)***.....		5,313,920
Cost of goods available for sale.....		<u>\$32,879,620</u>
Less: Ending finished goods (Schedule 7).....		7,970,880
Budgeted cost of goods sold.....		<u><u>\$24,908,740</u></u>

*166,000 units × 10 lbs per unit

**166,000 units × 6 components per unit

***See Schedules 2 and 7

P 9-47 (Continued)**i. Schedule 9: Budgeted Income Statement**

Sales (Schedule 1).....	\$30,750,000
Less: Cost of goods sold (Schedule 8).....	24,908,740
Gross margin.....	\$ 5,841,260
Less: Selling and administrative expenses (Schedule 6).....	870,000
Income before taxes.....	<u>\$ 4,971,260</u>

j. Schedule 10: Cash Budget

	January	February	March	Total
Beginning balance	\$ 400,000	\$ 50,000	\$ 495,004	\$ 400,000
Cash receipts	8,200,000	10,250,000	12,300,000	30,750,000
Cash available	<u>\$8,600,000</u>	<u>\$10,300,000</u>	<u>\$12,795,004</u>	<u>\$31,150,000</u>
Less Disbursements:				
Purchases (Sch. 3)	\$5,830,000	\$ 6,490,000	\$ 6,688,000	\$19,008,000
Direct labor (Sch. 4)	2,052,000	2,479,500	2,565,000	7,096,500
Overhead (Sch. 5)	483,600	555,600	570,000	1,609,200
Selling & admin. (Sch 6)	214,000	250,000	286,000	750,000
Total	<u>\$8,579,600</u>	<u>\$ 9,775,100</u>	<u>\$10,109,000</u>	<u>\$28,463,700</u>
Tentative ending balance	\$ 20,400	\$ 524,900	\$ 2,686,004	\$ 2,686,300
Borrowed/repaid	29,600	(29,600)	0	0
Interest paid		(296) *		(296)
Ending balance	<u>\$ 50,000</u>	<u>\$ 495,004</u>	<u>\$ 2,686,004</u>	<u>\$ 2,686,004</u>

*(0.12 × 1/12 × \$29,600)

2. Answers will vary.

P 9-48

1. To determine accounts payable as of June 30, a schedule of purchases will be constructed. This schedule will also be used to build the cash budget.

Let X = Cost of Sales, and $Sales = 1.00$.

If $X + 0.25X = 1.00$, then $X = 0.80$.

For example, for August, Cost of sales = $Sales/1.25 = \$100,000/1.25 = \$80,000$

	June	July	August	September
Cost of sales	\$ 96,000	\$ 72,000	\$ 80,000	\$108,000
Desired end. inventory*	36,000	40,000	54,000	44,000
Total requirements	\$132,000	\$112,000	\$134,000	\$152,000
Less: Beg. inventory	48,000	36,000	40,000	54,000
Purchases	\$ 84,000	\$ 76,000	\$ 94,000	\$ 98,000

* $0.50 \times$ Next month's cost of sales.

Since purchases are paid for in the following month, accounts payable at the end of June is \$84,000. Inventory for June 30 is \$36,000.

Accounts receivable for June 30 is computed as follows:

From June: $0.70 \times \$120,000 \times 0.80^*$	\$67,200
From May: $0.70 \times \$100,000 \times 0.30^*$	21,000
Total A/R.....	<u>\$88,200</u>

*By June 30, 20% of June credit sales and 70% of May credit sales have been collected, leaving 80% and 30%, respectively, to be collected.

Given accounts payable, the total liabilities plus stockholders' equity must equal \$562,750 (\$84,000 + \$210,000 + \$268,750). Cash is the difference between total assets and all other assets except cash (\$562,750 – \$425,000 – \$36,000 – \$88,200). This difference is \$13,550.

Total liabilities plus stockholders' equity.....		\$562,750
Cash.....		13,550
	Assets	L & OE
Cash.....	\$ 13,550	
Accounts receivable.....	88,200	
Inventory.....	36,000	
Plant and equipment.....	425,000	
Accounts payable.....		\$ 84,000
Common stock.....		210,000
Retained earnings.....		268,750
Total.....	<u>\$562,750</u>	<u>\$562,750</u>

P 9-48 (Continued)

2.

Grange Retailers
Cash Budget
For the Quarter Ending September 30, 2012

	July	August	September	Total
Beginning cash balance	\$ 13,550	\$ 10,450	\$ 10,405	\$ 13,550
Cash collections*	102,600	100,700	113,300	316,600
Total cash available	\$116,150	\$111,150	\$123,705	\$330,150
Cash disbursements:				
Purchases**	\$ 84,000	\$ 76,000	\$ 94,000	\$254,000
Salaries and wages	10,000	10,000	10,000	30,000
Utilities	1,000	1,000	1,000	3,000
Other	1,700	1,700	1,700	5,100
Property taxes	15,000			15,000
Advertising fees		6,000		6,000
Lease			5,000	5,000
Total disbursement	\$111,700	\$ 94,700	\$111,700	\$318,100
Minimum cash balance	10,000	10,000	10,000	10,000
Total cash needs	\$121,700	\$104,700	\$121,700	\$328,100
Excess (deficiency)	\$ (5,550)	\$ 6,450	\$ 2,005	\$ 2,050
Financing:				
Borrowings	\$ 6,000			\$ 6,000
Repayments		\$ (6,000)	0	(6,000)
Interest***		(45)	0	(45)
Total financing	\$ 6,000	\$ (6,045)	\$ 0	\$ (45)
Ending cash balance	\$ 10,450	\$ 10,405	\$ 12,005	\$ 12,005

*Cash collections:

Cash sales	\$ 27,000	\$ 30,000	\$ 40,500	\$ 97,500
Credit sales:				
Current month	12,600	14,000	18,900	45,500
Prior month	42,000	31,500	35,000	108,500
From two months ago	21,000	25,200	18,900	65,100
Total collections	\$102,600	\$100,700	\$113,300	\$316,600

**Taken from the purchase schedule developed in Requirement 1.

***\$6,000 × 0.09/12

Note: Depreciation is not a cash expense and so does not appear in the budget.

P 9-48 (Continued)

Grange Retailers Balance Sheet September 30, 2012		
	Assets	L & OE
Cash.....	\$ 12,005	
Accounts receivable ^a	96,600	
Inventory ^b	44,000	
Plant and equipment ^c	413,000	
Accounts payable ^b		\$ 98,000
Common stock.....		210,000
Retained earnings ^d		257,605
Total.....	\$565,605	\$565,605

^a $(0.70 \times \$135,000 \times 0.80) + (0.70 \times \$100,000 \times 0.30)$

^b From purchases schedule prepared in Requirement 1.

^c $[\$425,000 - 3(\$4,000)]$

^d If total assets equal \$565,605 then liabilities plus stockholders' equity must also equal that amount. Subtracting accounts payable and common stock from total liabilities and stockholders' equity gives retained earnings of \$257,605.

4. Cash budgets are important in loan decisions to help determine the company's ability to repay the loan. A statement of cash flows would also be helpful to see how cash has been generated and used in the past. Another key report is the balance sheet so that the loan officer can assess the current level of indebtedness and the assets that would be available to claim should the company default. Reliability of historical financial reports can be increased through an audit by an independent CPA. The CPA might also be asked to examine the assumptions and reasonableness of a cash budget.

P 9-49

When Eisenhower said “planning is everything,” he was no doubt referring to the extensive planning process he undertook to plan the D-Day invasion of Normandy. That plan was comprehensive and took into account the manpower needed, probable German response, and even the weather. However, once the invasion grew closer, Eisenhower had to respond to changes in the assumptions underlying the plan. He had to change the plan in response to changes in important factors. It is in that sense that “the plan is nothing.” He had no problem deviating from the original plan if it seemed warranted.

In business, planning is crucial. The master budgeting process is the planning process. During that process, all resources and opportunities of the firm are considered. The budget committee gathers information from all areas of the firm as well as from outsiders. Then, the best plan is developed. The plan will be used for continual planning during the coming year as well as control. If the underlying factors change (e.g., the economy, demand for the company’s products, responses of competitors), then the budget must be adapted to fit those changes. However, if the underlying factors do not change, then the plan can be used as a benchmark, and performance can be compared to it.

P 9-50

Feinberg Company Cash Budget For the Month of July	
Beginning cash balance.....	\$ 27,000
Collections:	
Cash sales (0.40 × \$1,140,000).....	456,000
Credit sales:	
July:	
With discount ^a	150,822
Without discount ^b	153,900
June ^c	162,000
May ^d	87,000
Sale of old equipment.....	25,200
Total cash available.....	<u>\$1,061,922</u>

P 9-50 (Continued)**Less disbursements:****Raw materials:**

July ^e	\$ 156,000
June ^f	148,200
Direct labor.....	105,000
Operating expenses.....	325,000
Dividends.....	130,000
Equipment.....	173,000
Total disbursements.....	\$1,037,200
Minimum cash balance.....	20,000
Total cash needs.....	\$1,057,200
Excess of cash available over needs.....	\$ 4,722
Ending cash balance.....	\$ 24,722

^a $(0.60 \times \$1,140,000) \times 0.45 \times 0.50 \times 0.98$.

^b $(0.60 \times \$1,140,000) \times 0.45 \times 0.50$.

^c $(0.60 \times \$900,000) \times 0.30$.

^d $(0.60 \times \$580,000) \times 0.25$.

^e July payment = $(\$1,200,000)(0.26)(0.50) = \$156,000$

^f June payment = $(\$1,140,000)(0.26)(0.50) = \$148,200$

P 9-51**1. Schedule 1: Sales Budget (units and budgeted sales in thousands)**

	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Total
Units	65	70	75	90	300
Unit price	\$ 400	\$ 400	\$ 400	\$ 400	\$ 400
Total sales	\$26,000	\$28,000	\$30,000	\$36,000	\$120,000

2. Schedule 2: Production Budget

	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Total
Sales (Sch 1)	65,000	70,000	75,000	90,000	300,000
Desired ending inventory	13,000	15,000	20,000	10,000	10,000
Total needs	78,000	85,000	95,000	100,000	310,000
Less: Beginning inventory	0	13,000	15,000	20,000	0
Production	78,000	72,000	80,000	80,000	310,000

P 9-51 (Continued)

3. Schedule 3: Direct Materials Purchases Budget (in thousands)

	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Total
Production	78	72	80	80	310
× Materials/unit	3	3	3	3	3
Production needs	234	216	240	240	930
Desired ending inventory	63.0	67.5	81.0	65.7	65.7
Total needs	297	283.5	321	305.7	995.7
Less: Beginning inventory	65.7	63.0	67.5	81.0	65.7
Purchases	231.3	220.5	253.5	224.7	930.0
× Cost per unit	\$ 80	\$ 80	\$ 80	\$ 80	\$ 80
Purchase cost	\$18,504	\$17,640	\$20,280	\$17,976	\$74,400

4. Schedule 4: Direct Labor Budget (in thousands, except per unit/hour data)

	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Total
Production	78	72	80	80	310
× Hours per unit	5	5	5	5	5
Hours needed	390	360	400	400	1,550
× Cost per hour	\$ 10	\$ 10	\$ 10	\$ 10	\$ 10
Total cost	\$3,900	\$3,600	\$4,000	\$4,000	\$15,500

5. Schedule 5: Overhead Budget (in thousands, except per unit/hour data)

	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Total
Budgeted hours	390	360	400	400	1,550
× Variable rate	\$ 6	\$ 6	\$ 6	\$ 6	\$ 6
Budgeted VOH	\$2,340	\$2,160	\$2,400	\$2,400	\$ 9,300
Budgeted FOH	1,000	1,000	1,000	1,000	4,000
Total OH	\$3,340	\$3,160	\$3,400	\$3,400	\$13,300

6. Schedule 6: Selling and Administrative Expenses Budget (in thousands, except per unit/hour data)

	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Total
Planned sales	65	70	75	90	300
× Variable rate	\$ 10	\$ 10	\$ 10	\$ 10	\$ 10
Variable expenses	\$650	\$700	\$ 750	\$ 900	\$3,000
Fixed expenses	250	250	250	250	1,000
Total expenses	\$900	\$950	\$1,000	\$1,150	\$4,000

P 9-51 (Continued)

7. Schedule 7: Ending Finished Goods Inventory Budget

Unit cost computation:

Direct materials	(3 units @ \$80).....	\$ 240.00
Direct labor	(5 hours @ \$10).....	50.00
Overhead:		
Variable	(5 hours @ \$6).....	30.00
Fixed	(\$4,000,000/310,000).....	12.90 *
Total unit cost.....		<u>\$332.90</u>
Finished goods = 10,000 × \$332.90.....		<u>\$3,329,000</u>

*Rounded

8. Schedule 8: Cost of Goods Sold Budget

Direct materials used (Schedule 3).....	\$ 74,400,000
Direct labor used (Schedule 4).....	15,500,000
Overhead (Schedule 5).....	13,300,000
Budgeted manufacturing costs.....	<u>\$103,200,000</u>
Add: Beginning finished goods inventory	
(Schedule 7).....	<u>0</u>
Cost of goods available for sale.....	<u>\$103,200,000</u>
Less: Ending finished goods inventory	
(Schedule 7).....	<u>3,329,000</u>
Budgeted cost of goods sold.....	<u>\$ 99,871,000</u>

9. Cash Budget (in thousands)

	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Total
Beginning cash	\$ 250	\$ 1,110	\$ 3,128	\$ 5,568	\$ 250
Collections:					
Credit sales:					
Current quarter	22,100	23,800	25,500	30,600	102,000
Prior quarter	3,300	3,900	4,200	4,500	15,900
Cash available	<u>\$25,650</u>	<u>\$28,810</u>	<u>\$32,828</u>	<u>\$40,668</u>	<u>\$118,150</u>
Less disbursements:					
Direct materials:					
Current quarter	\$ 9,252	\$ 8,820	\$10,140	\$ 8,988	\$ 37,200
Prior quarter	7,248	9,252	8,820	10,140	35,460
Direct labor	3,900	3,600	4,000	4,000	15,500
Overhead	2,990	2,810	3,050	3,050	11,900
Selling and admin.	850	900	950	1,100	3,800
Dividends	300	300	300	300	1,200
Equipment				2,000	2,000
Total cash needs	<u>\$24,540</u>	<u>\$25,682</u>	<u>\$27,260</u>	<u>\$29,578</u>	<u>\$107,060</u>
Ending cash	<u>\$ 1,110</u>	<u>\$ 3,128</u>	<u>\$ 5,568</u>	<u>\$11,090</u>	<u>\$ 11,090</u>

P 9-51 (Continued)

10.	Optima Company Pro Forma Income Statement For the Year Ending December 31, 2012	
	Sales (Schedule 1).....	\$120,000,000
	Less: Cost of goods sold (Schedule 8).....	99,871,000
	Gross margin.....	\$ 20,129,000
	Less: Selling and administrative expenses (Schedule 6).....	4,000,000
	Income before taxes.....	\$ 16,129,000
11.	Optima Company Pro Forma Balance Sheet December 31, 2012	
	<u>Assets</u>	
	Cash.....	\$11,090,000
	Accounts receivable.....	5,400,000
	Direct materials inventory.....	5,256,000
	Finished goods inventory.....	3,329,000
	Plant and equipment, net.....	33,900,000
	Total assets.....	\$58,975,000
	<u>Liabilities and Stockholders' Equity</u>	
	Accounts payable.....	\$ 8,988,000
	Capital stock.....	27,000,000
	Retained earnings.....	22,987,000
	Total liabilities and stockholders' equity.....	\$58,975,000
	^a Beginning plant and equipment.....	\$33,500,000
	Add: New equipment.....	2,000,000
	Less: Depreciation expense (for year).....	(1,600,000)
	Ending plant and equipment.....	\$33,900,000
	^b Beginning retained earnings.....	\$ 8,058,000
	Add: Net income*.....	16,129,000
	Less: Dividends paid.....	(1,200,000)
	Ending retained earnings.....	\$22,987,000

*Ignore taxes.

P 9-52

1. **Willison Company**
Purchase Budget for Fabric
For the Fourth Quarter

	October	November	December	Total
Units to be produced	20,000	40,000	25,000	85,000
× DM per unit (yds.)	0.20	0.20	0.20	0.20
Production needs	4,000	8,000	5,000	17,000
Desired ending inventory (yds.)	1,200	750	900	900
Total needs	5,200	8,750	5,900	17,900
Less: Beg. inventory	600	1,200	750	600
DM to be purchased (yds.)	4,600	7,550	5,150	17,300
× Cost per yard	\$3.50	\$3.50	\$3.50	\$3.50
Total purchase cost	\$16,100	\$26,425	\$18,025	\$60,550

2. **Willison Company**
Purchase Budget for Polyfiberfill
For the Fourth Quarter

	October	November	December	Total
Units to be produced	20,000	40,000	25,000	85,000
× DM per unit (oz.)	6	6	6	6
Production needs	120,000	240,000	150,000	510,000
Desired ending inventory (oz.)	72,000	45,000	54,000	54,000
Total needs	192,000	285,000	204,000	564,000
Less: Beg. inventory	36,000	72,000	45,000	36,000
DM to be purchased (oz.)	156,000	213,000	159,000	528,000
× Cost per ounce	\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05
Total purchase cost	\$ 7,800	\$ 10,650	\$ 7,950	\$ 26,400

3. **Willison Company**
Direct Labor Budget
For the Fourth Quarter

	October	November	December	Total
Units to be produced	20,000	40,000	25,000	85,000
× Direct labor time per unit (hours)	0.10	0.10	0.10	0.10
Total hours needed	2,000	4,000	2,500	8,500
× Wages per hour	\$ 15.50	\$ 15.50	\$ 15.50	\$ 15.50
Total direct labor cost	\$31,000	\$62,000	\$38,750	\$131,750

P 9-53

1. **Schedule of Cash Receipts**

	<u>August</u>	<u>September</u>
Cash sales:		
(\$75,000 × 75%).....	\$56,250	
(\$80,000 × 75%).....		\$60,000
Checks*	18,231	19,446
Total	<u>\$74,481</u>	<u>\$79,446</u>
*Check collections for:		
(0.25 × \$75,000)	\$18,750	
(0.25 × \$80,000)		\$20,000
Less: Bad checks		
(0.02 × \$18,750)	(375)	
(0.02 × \$20,000)		(400)
Less: Service charge		
[(18,750/\$65) × \$0.50].....	(144) *	
[(20,000/\$65) × \$0.50].....		(154) *
	<u>\$18,231</u>	<u>\$19,446</u>

*Rounded

	<u>July</u>	<u>August</u>	<u>September</u>
2. a. Revised sales estimates:			
(\$60,000 × 1.20 × 0.05)	\$ 3,600		
(\$75,000 × 1.20 × 0.05)		\$ 4,500	
(\$80,000 × 1.20 × 0.05)			\$ 4,800
Revised credit card sales:			
(\$60,000 × 1.20 × 0.95)	68,400		
(\$75,000 × 1.20 × 0.95)		85,500	
(\$80,000 × 1.20 × 0.95)			91,200
Revised total sales	<u>\$72,000</u>	<u>\$90,000</u>	<u>\$96,000</u>
b. Number of credit card transactions:			
August (\$85,500/\$50) = 1,710			
September (\$91,200/\$50) = 1,824			

P 9-53 (Continued)

	<u>August</u>	<u>September</u>
3. Cash sales:		
(\$90,000 × 0.05)	\$ 4,500	
(\$96,000 × 0.05)		\$ 4,800
Credit card receipts net of discount:		
From July (\$68,400 × 0.98 × 0.06)	4,022 *	
From August		
(\$85,500 × 0.98 × 0.94)	78,763 *	
(\$85,500 × 0.98 × 0.06)		5,027 *
From September (\$91,200 × 0.98 × 0.94)		84,013 *
Less:		
Gateway and statement fee	(19)	(19)
Transaction fees:		
1,710 × \$0.25	(428)	
1,824 × \$0.25		(456)
Total	<u>\$86,838 *</u>	<u>\$93,365 *</u>

*Rounded

CASES

Case 9-54

Answers will vary.

Case 9-55

1.	Dr. Roger Jones Cash Budget	
Cash collections and cash available*		<u>\$21,360</u>
Less cash disbursements:		
Salaries		\$12,700
Benefits		1,344
Building lease		1,500
Dental supplies		1,200
Janitorial		300
Utilities		400
Phone		150
Office supplies		100
Lab fees		5,000
Loan payments		570
Interest payments		500
Miscellaneous		200
Total cash needs		<u>\$23,964</u>
Deficiency of cash available over needs		<u>\$ (2,604)</u>

*Total revenues for a month:

Fillings (\$50 × 90)	\$ 4,500
Crowns (\$300 × 19)	5,700
Root canals (\$170 × 8)	1,360
Bridges (\$500 × 7)	3,500
Extractions (\$45 × 30)	1,350
Cleaning (\$25 × 108)	2,700
X-rays (\$15 × 150)	2,250
	<u>\$21,360</u>

The budget shows that there is \$2,604 more cash going out than coming in.

Case 9-55 (Continued)

2. Dr. Jones must either increase revenues to make up the deficiency or cut costs or a combination of the two. Three possible approaches are outlined as follows:

- a. Extend office hours so that a total of 40 hours are worked each week.

This could increase revenues by as much as \$5,340. Based on a four-week month, the current revenue earned per hour is \$166.88 (\$21,360/128). Thus, the total revenue increase possible is $\$166.88 \times 32 \text{ hours} = \$5,340$. Dr. Jones would need to inform his assistants and receptionist of the increased time and indicate that each will receive a 15 percent increase in salary for the additional time. (The office is currently open 32 hours per week.) Benefits (primarily FICA and unemployment insurance benefits) would also increase. Other expenses that will likely increase with an increase in sales are dental supplies, lab fees, and utilities (representing about 31 percent of sales). The remaining expenses appear to be fixed. Thus, the increase in cash flow is computed as follows:

Incremental revenues.....	\$ 5,340
Salary increases ($0.25 \times \$3,400$).....	(850)
Benefits ($\$1,344/\$12,700$) (\$850).....	(90)
Variable expenses ($0.31 \times \$5,340$).....	<u>(1,655)</u>
Cash flow increase.....	<u>\$ 2,745</u>

Approach 1 carries with it some risk. Increasing office hours may not increase business. If business does not increase as expected, the cash flow problems could be aggravated rather than relieved. The likelihood of increasing business would be increased if the additional hours are offered in the early evening instead of Friday afternoon. Evening hours are a major convenience for patients who must work during the day and are reluctant to lose work hours.

Case 9-55 (Continued)

Dr. Roger Jones Revised Cash Budget	
Cash collections and cash available (\$21,360 + \$5,340).....	\$26,700
Less cash disbursements:	
Salaries (\$12,700 + \$850).....	\$13,550
Benefits (\$1,344 + \$90).....	1,434
Building lease.....	1,500
Dental supplies (\$1,200 + \$301).....	1,501
Janitorial.....	300
Utilities (\$400 + \$100).....	500
Phone.....	150
Office supplies.....	100
Lab fees (\$5,000 + \$1,254).....	6,254
Loan payments.....	570
Interest payments.....	500
Miscellaneous.....	200
Total cash needs.....	\$26,559
Excess cash available over needs.....	\$ 141

- b. Cut one dental assistant, eliminate the salary to Mrs. Jones and the activities she does, and cut Dr. Jones's salary back by \$1,000 per month:
The savings are as follows

Assistant (salary and benefits)*.....	\$1,051
Salaries.....	2,000
Total.....	\$3,051

* $(\$1,900/2) + [(\$950/\$12,700) \times \$1,344] = \$1,051$ (rounded). (This provides a reasonable approximation of the benefits assigned to an assistant.)

Although this achieves the savings, the solution may not be feasible. The solution depends to a large extent on how well the Jones family can do with a \$2,000 per month cut in their income. In all likelihood, this would be unacceptable to the Jones family. Also, cutting an assistant would require the receptionist to become involved in assisting. This may not be possible without laying off the receptionist and hiring a person that has both sets of skills. Additionally, using the receptionist as an assistant would result in phone calls going unanswered and/or incoming patients being ignored.

Case 9-55 (Continued)

- c. A third possibility is to increase the fees charged for the various dental services. Assuming a variable cost ratio of 31 percent (from the first approach), the increase in revenues needed to cover the \$2,900 deficiency can be computed as follows:

$$\begin{aligned} 0.69 R &= \$2,900 \\ R &= \$2,900/0.69 \\ R &= \$4,203 \end{aligned}$$

This increase would call for fees to increase an average of 19.7 percent. Whether this increase is possible or not depends to some extent on how Dr. Jones's charges compare with other dentists in the area. If some increase is possible, then the increase could be combined with elements of the other two approaches, (e.g., a 10 percent increase in fees and working an extra four hours per week, say, on Wednesday evening). I would expect Dr. Jones to be more likely to accept a combination like the one just mentioned rather than accepting any of the approaches in their pure form.

The behavioral principles discussed in the chapter do have a role in this type of setting. Dr. Jones's personal goals must be in line with the goals of his professional organization, and he must have the motivation to achieve those goals. There is, however, a significant difference. Dr. Jones owns and manages the organization. To a large extent, his goals are the goals of the organization.

Case 9-56

1. Linda's behavior is not ethical. In the budgeting process, she is deliberately misrepresenting the capabilities of her division for personal gain. To ensure that she achieves budget (either this year or next), she manipulates accounting procedures. This manipulation is in opposition to generally accepted accounting principles. Her decisions are based on her self-interest rather than on the interests of the company. Deceptive and manipulative behavior for personal gain is clearly wrong.

Case 9-56 (Continued)

2. There are few, if any, legitimate reasons for deferring the closing of sales. Thus, if a marketing manager was asked to engage in this behavior, the first response must be to find out why the request is being made. If there is no sound reason offered, then a simple refusal should suffice. If it takes on the nature of an order and no sound reason exists, then the marketing manager should consider appealing to a higher-level manager. Certainly, deferral of closings so that it increases the likelihood of meeting budget for the coming year is not a sound reason, and, in fact, is wrong.
3. It would be hard to go against a common practice that seems to have the approval of the plant managers. The widespread knowledge of the practice may even suggest that higher-level management is aware of it and essentially condones the practice—or at least adjusts for it. If higher-level management is aware of the practice and adjusts for it, then the ability to achieve bonus may not be enhanced as much as believed. The plant manager could investigate and find out the extent to which upper-level management is aware of padding. At the same time, the manager could obtain some advice on what his behavior ought to be. If told that the practice is acceptable, then the manager has to decide whether to continue in an organization that accepts deceptive behavior (or go against the grain and simply report what he or she feels is really achievable by the plant).
4. This is a clear violation of the ethical code for management accountants. A management accountant is obligated to report information fairly and objectively and to disclose all information that can be expected to influence a user's understanding of accounting reports. Moreover, management accountants must perform their duties in accordance with relevant laws, regulations, and technical standards. Accelerating the recognition of expenses violates generally accepted accounting principles. Your first step would be to explain to the division manager that this action is wrong. If the division manager persists, you might ask him/her to put the request in writing. This will often solve the problem, as the division manager would likely not want his/her name attached to this order. If it does not, you should continue up the chain of command and/or inform the audit committee of the board of directors.