Chapter 9
Profit Planning

Solutions to Questions

9-1 A budget is a detailed plan outlining the acquisition and use of financial and other resources over some given time period. As such, it represents a plan for the future expressed in formal quantitative terms. Budgetary control involves the use of budgets to control the *actual* activities of a firm.

9-2

1. Budgets provide a means of communicating management's plans throughout the organization.
2. Budgets force managers to think about and plan for the future.
3. The budgeting process provides a means of allocating resources to those parts of the organization where they can be most effectively used.
4. The budgeting process can uncover potential bottlenecks before they occur.
5. Budgets coordinate the activities of the entire organization by integrating the plans of the various parts. Budgeting helps to ensure that everyone in the organization is pulling in the same direction.
6. Budgets define goals and objectives that can serve as benchmarks for evaluating subsequent performance.

9-3 Responsibility accounting is a system in which a manager is held responsible for those items of revenues and costs—and only those items—that the manager can control to a significant extent. Each line item in the budget is made the responsibility of a manager who is then held responsible for differences between budgeted and actual results.

9-4 A master budget represents a summary of all of management's plans and goals for the future, and outlines the way in which these plans are to be accomplished. The master budget is composed of a number of smaller, specific budgets encompassing sales, production, raw materials, direct labor, manufacturing overhead, selling and administrative expenses, and inventories. The master budget generally also contains a budgeted income statement, balance sheet, and cash flow data.

9-5 The level of sales impacts virtually every other aspect of the firm's activities. It determines the production budgets, cash collections, cash disbursements, and selling and administrative budgets that in turn determine the cash budget and budgeted income statement and balance sheet.

9-6 No. Planning and control are different, although related, concepts. Planning involves developing objectives and formulating steps to achieve those objectives. Control, by contrast, involves the means by which management ensures that the objectives set down at the planning stage are attained.

9-7 The flow of information moves in two directions—upward and downward. The initial flow should be from the bottom of the organization upward. Each person having responsibility over revenues or costs should prepare the budget data against which his or her subsequent performance will be measured. As the budget data are communicated upward, higher-level managers should review the budgets for consistency with the overall goals of the organization and the plans of other units in the organization. Any issues should be resolved in discussions between the individuals who prepared the budgets and their managers.

All levels of an organization should participate in the budgeting process—not just top management or the accounting department.

Each level participates in the way it best can. Generally, the lower levels will be more familiar with detailed, day-to-day operating data, and for this reason will have primary responsibility for developing the specifics in the budget. Top levels of management will have a better perspective concerning the company's strategy.

9-8 A self-imposed budget is one in which persons with responsibility over cost control prepare their own budgets, i.e., the budget is not imposed from above. The major advantages are: (1) the views and judgments of persons from all levels of an organization are represented in the final budget document; (2) budget estimates generally are more accurate and reliable, since they are prepared by those who are closest to the problems; (3) managers generally are more motivated to meet budgets which they have participated in setting; (4) self-imposed budgets reduce the amount of upward "blaming" resulting from inability to meet budget goals. One caution must be exercised in the use of self-imposed budgets. The budgets prepared by lower-level managers should be carefully reviewed to prevent too much slack.

9-9 Budgeting can assist a firm in its employment policies by providing information on probable future staffing needs. Budgeting can also assist in stabilizing a company's work force. By careful planning through the budget process, a company can often "smooth out" its activities and avoid erratic hiring and laying off employees.

9-10 No, although this is clearly one of the purposes of the cash budget. The principal purpose is to provide information on probable cash needs *during* the budget period, so that bank loans and other sources of financing can be anticipated and arranged well in advance of the actual time of need.

9-11 Zero-based budgeting requires that managers start at zero levels every year and justify all costs as if all programs were being proposed for the first time. In traditional budgeting, by contrast, budget data are usually generated on an incremental basis, with last year's budget being the starting point.

Exercise 9-1 (20 minutes)

1.

	July	*August*	*September*	*Total*
May sales:				
$430,000 × 10%	$ 43,000			$ 43,000
June sales:				
$540,000 × 70%, 10%	378,000	$ 54,000		432,000
July sales:				
$600,000 × 20%, 70%, 10%	120,000	420,000	$ 60,000	600,000
August sales:				
$900,000 × 20%, 70%		180,000	630,000	810,000
September sales:				
$500,000 × 20%			100,000	100,000
Total cash collections	$541,000	$654,000	$790,000	$1,985,000

Notice that even though sales peak in August, cash collections peak in September. This occurs because the bulk of the company's customers pay in the month following sale. The lag in collections that this creates is even more pronounced in some companies. Indeed, it is not unusual for a company to have the least cash available in the months when sales are greatest.

2. Accounts receivable at September 30:

From August sales: $900,000 × 10%	$ 90,000
From September sales:	
$500,000 × (70% + 10%)	400,000
Total accounts receivable	$490,000

Exercise 9-2 (10 minutes)

	July	*August*	*September*	*Quarter*
Budgeted sales in units	30,000	45,000	60,000	135,000
Add desired ending inventory*	4,500	6,000	5,000	5,000
Total needs	34,500	51,000	65,000	140,000
Less beginning inventory	3,000	4,500	6,000	3,000
Required production	31,500	46,500	59,000	137,000

*10% of the following month's sales

Exercise 9-3 (15 minutes)

	Quarter—Year 2				*Year 3*
	First	*Second*	*Third*	*Fourth*	*First*
Required production of calculators	60,000	90,000	150,000	100,000	80,000
Number of chips per calculator	× 3	× 3	× 3	× 3	× 3
Total production needs—chips	180,000	270,000	450,000	300,000	240,000

	Year 2				
	First	*Second*	*Third*	*Fourth*	*Year*
Production needs—chips	180,000	270,000	450,000	300,000	1,200,000
Add desired ending inventory—chips	54,000	90,000	60,000	48,000	48,000
Total needs—chips	234,000	360,000	510,000	348,000	1,248,000
Less beginning inventory—chips	36,000	54,000	90,000	60,000	36,000
Required purchases—chips	198,000	306,000	420,000	288,000	1,212,000
Cost of purchases at $2 per chip	$396,000	$612,000	$840,000	$576,000	$2,424,000

Exercise 9-4 (20 minutes)

1. Assuming that the direct labor workforce is adjusted each quarter, the direct labor budget would be:

	1st Quarter	*2nd Quarter*	*3rd Quarter*	*4th Quarter*	*Year*
Units to be produced	5,000	4,400	4,500	4,900	18,800
Direct labor time per unit (hours)	× 0.40	× 0.40	× 0.40	× 0.40	× 0.40
Total direct labor hours needed	2,000	1,760	1,800	1,960	7,520
Direct labor cost per hour	× $11.00	× $11.00	× $11.00	× $11.00	× $11.00
Total direct labor cost	$ 22,000	$ 19,360	$ 19,800	$ 21,560	$ 82,720

2. Assuming that the direct labor workforce is not adjusted each quarter and that overtime wages are paid, the direct labor budget would be:

	1st Quarter	*2nd Quarter*	*3rd Quarter*	*4th Quarter*	*Year*
Units to be produced	5,000	4,400	4,500	4,900	18,800
Direct labor time per unit (hours)	× 0.40	× 0.40	× 0.40	× 0.40	× 0.40
Total direct labor hours needed	2,000	1,760	1,800	1,960	7,520
Regular hours paid	1,800	1,800	1,800	1,800	7,200
Overtime hours paid	200	-	-	160	360
Wages for regular hours (@ $11.00 per hour)	$19,800	$19,800	$19,800	$19,800	$79,200
Overtime wages (@ $11.00 per hour × 1.5)	3,300	-	-	2,640	5,940
Total direct labor cost	$23,100	$19,800	$19,800	$22,440	$85,140

Exercise 9-5 (15 minutes)

1.

Krispin Corporation
Manufacturing Overhead Budget

	1st Quarter	*2nd Quarter*	*3rd Quarter*	*4th Quarter*	*Year*
Budgeted direct labor-hours	5,000	4,800	5,200	5,400	20,400
Variable overhead rate	x $1.75	x $1.75	x $1.75	x $1.75	x $1.75
Variable manufacturing overhead	$ 8,750	$ 8,400	$ 9,100	$ 9,450	$ 35,700
Fixed manufacturing overhead	35,000	35,000	35,000	35,000	140,000
Total manufacturing overhead	43,750	43,400	44,100	44,450	175,700
Less depreciation	15,000	15,000	15,000	15,000	60,000
Cash disbursements for manufacturing overhead	$28,750	$28,400	$29,100	$29,450	$115,700

2.

Total budgeted manufacturing overhead for the year (a)	$175,700
Total budgeted direct labor-hours for the year (b)	20,400
Predetermined overhead rate for the year (a) ÷ (b)	$ 8.61

Exercise 9-6 (15 minutes)

Haerve Company
Selling and Administrative Expense Budget

	1st Quarter	*2nd Quarter*	*3rd Quarter*	*4th Quarter*	*Year*
Budgeted unit sales	12,000	14,000	11,000	10,000	47,000
Variable selling and administrative expense per unit	x $2.75	x $2.75	x $2.75	x $2.75	x $2.75
Variable expense	$ 33,000	$ 38,500	$ 30,250	$ 27,500	$129,250
Fixed selling and administrative expenses:					
Advertising	12,000	12,000	12,000	12,000	48,000
Executive salaries	40,000	40,000	40,000	40,000	160,000
Insurance		6,000		6,000	12,000
Property taxes			6,000		6,000
Depreciation	16,000	16,000	16,000	16,000	64,000
Total fixed selling and administrative expenses	68,000	74,000	74,000	74,000	290,000
Total selling and administrative expenses	101,000	112,500	104,250	101,500	419,250
Less depreciation	16,000	16,000	16,000	16,000	64,000
Cash disbursements for selling and administrative expenses	$ 85,000	$ 96,500	$ 88,250	$ 85,500	$355,250

Exercise 9-7 (20 minutes)

	Quarter (000 omitted)				
	1	*2*	*3*	*4*	*Year*
Cash balance, beginning	$ 9 *	$ 5	$ 5	$ 5	$ 9
Add collections from customers	76	90	125 *	100	391 *
Total cash available	85 *	95	130	105	400
Less disbursements:					
Purchase of inventory	40 *	58 *	36	32 *	166
Operating expenses	36	42 *	54 *	48	180 *
Equipment purchases	10 *	8 *	8 *	10	36 *
Dividends	2 *	2 *	2 *	2 *	8
Total disbursements	88	110 *	100	92	390
Excess (deficiency) of cash available over disbursements	(3)*	(15)	30 *	13	10
Financing:					
Borrowings	8	20 *	—	—	28
Repayments (including interest)	0	0	(25)	(7)*	(32)
Total financing	8	20	(25)	(7)	(4)
Cash balance, ending	$ 5	$ 5	$ 5	$ 6	$ 6

*Given.

Problem 9-8 (30 minutes)

1. Cadence and Cross used a top-down approach to prepare the budget. That is, they prepared the budget with little or no input from the individuals who would have to implement the budget. In contrast, the recommended approach is a participative budget in which the individuals who have cost control responsibility initiate and fully participate in the budgeting process. Participatory budgets have a number of advantages including: 1) those who are closest to the action are likely to have better information; 2) managers are likely to be more committed to and understand a budget they participated in preparing than a budget that is imposed from above; and 3) participative budgets help to foster a sense that everyone's input is valued.

2. While Cadence and Cross are undoubtedly pleased with their work, the dissatisfaction expressed by some employees with the budget process is a sign that there may be storm clouds ahead. If employees feel that the budget is unrealistic, the fact that it was imposed can lead to resentment, anger, and a sense of helplessness. Employees may, as a consequence, spend their time and energy complaining about the budget rather than creatively solving problems. And if the budget is indeed unrealistic and managers are held responsible for meeting the budget, unproductive finger-pointing is likely to result as reality fails to live up to expectations.

Problem 9-9 (30 minutes)

1. September cash sales	$ 7,400
September collections on account:	
July sales: $20,000 × 18%	3,600
August sales: $30,000 × 70%	21,000
September sales: $40,000 × 10%	4,000
Total cash collections	$36,000

2. Payments to suppliers:	
August purchases (accounts payable)	$16,000
September purchases: $25,000 × 20%	5,000
Total cash payments	$21,000

3.

CALGON PRODUCTS
Cash Budget
For the Month of September

Cash balance, September 1		$ 9,000
Add cash receipts:		
Collections from customers		36,000
Total cash available before current financing		45,000
Less disbursements:		
Payments to suppliers for inventory	$21,000	
Selling and administrative expenses	9,000 *	
Equipment purchases	18,000	
Dividends paid	3,000	
Total disbursements		51,000
Excess (deficiency) of cash available over disbursements		(6,000)
Financing:		
Borrowings		11,000
Repayments		0
Interest		0
Total financing		11,000
Cash balance, September 30		$ 5,000

*$13,000 – $4,000 = $9,000.

Problem 9-10 (45 minutes)

1. Production budget:

	July	*August*	*September*	*October*
Budgeted sales (units)	40,000	50,000	70,000	35,000
Add desired ending inventory	20,000	26,000	15,500	11,000
Total needs	60,000	76,000	85,500	46,000
Less beginning inventory	17,000	20,000	26,000	15,500
Required production	43,000	56,000	59,500	30,500

2. During July and August the company is building inventories in anticipation of peak sales in September. Therefore, production exceeds sales during these months. In September and October inventories are being reduced in anticipation of a decrease in sales during the last months of the year. Therefore, production is less than sales during these months to cut back on inventory levels.

3. Raw materials purchases budget:

	July	*August*	*Septem-ber*	*Third Quarter*
Required production (units)	43,000	56,000	59,500	158,500
Material A135 needed per unit	× 3 lbs.	× 3 lbs.	× 3 lbs.	× 3 lbs.
Production needs (lbs.)	129,000	168,000	178,500	475,500
Add desired ending inventory (lbs.)	84,000	89,250	45,750 *	45,750
Total Material A135 needs	213,000	257,250	224,250	521,250
Less beginning inventory (lbs.)	64,500	84,000	89,250	64,500
Material A135 purchases (lbs.)	148,500	173,250	135,000	456,750

* 30,500 units (October production) × 3 lbs. per unit= 91,500 lbs.; 91,500 lbs. × 0.5 = 45,750 lbs.

As shown in part (1), production is greatest in September. However, as shown in the raw material purchases budget, the purchases of materials is greatest a month earlier because materials must be on hand to support the heavy production scheduled for September.

Problem 9-11 (30 minutes)

1.

Priston Company
Direct Materials Budget

	1st Quarter	*2nd Quarter*	*3rd Quarter*	*4th Quarter*	*Year*
Required production	6,000	7,000	8,000	5,000	26,000
Raw materials per unit	× 3	× 3	× 3	× 3	× 3
Production needs	18,000	21,000	24,000	15,000	78,000
Add desired ending inventory	4,200	4,800	3,000	3,700	3,700
Total needs	22,200	25,800	27,000	18,700	81,700
Less beginning inventory	3,600	4,200	4,800	3,000	3,600
Raw materials to be purchased	18,600	21,600	22,200	15,700	78,100
Cost of raw materials to be purchased at $2.50 per pound	$46,500	$54,000	$55,500	$39,250	$195,250

Schedule of Expected Cash Disbursements for Materials

Accounts payable, beginning balance	$11,775				$ 11,775
1st Quarter purchases	32,550	$13,950			46,500
2nd Quarter purchases		37,800	$16,200		54,000
3rd Quarter purchases			38,850	$16,650	55,500
4th Quarter purchases	-	-	-	27,475	27,475
Total cash disbursements for materials	$44,325	$51,750	$55,050	$44,125	$195,250

Problem 9-11 (continued)

2.

Priston Company
Direct Labor Budget

	1st Quarter	*2nd Quarter*	*3rd Quarter*	*4th Quarter*	*Year*
Required production	6,000	7,000	8,000	5,000	26,000
Direct labor-hours per unit	× 0.50	× 0.50	× 0.50	× 0.50	× 0.50
Total direct labor-hours needed	3,000	3,500	4,000	2,500	13,000
Direct labor cost per hour	$12.00	$12.00	$12.00	$12.00	$12.00
Total direct labor cost	$36,000	$42,000	$48,000	$30,000	$156,000

Problem 9-12 (30 minutes)

1.

Harveton Corporation
Direct Labor Budget

	1st Quarter	*2nd Quarter*	*3rd Quarter*	*4th Quarter*	*Year*
Units to be produced	16,000	15,000	14,000	15,000	60,000
Direct labor time per unit (hours)	0.80	0.80	0.80	0.80	0.80
Total direct labor-hours needed	12,800	12,000	11,200	12,000	48,000
Direct labor cost per hour	$11.50	$11.50	$11.50	$11.50	$11.50
Total direct labor cost	$147,200	$138,000	$128,800	$138,000	$552,000

2.

Harveton Corporation
Manufacturing Overhead Budget

	1st Quarter	*2nd Quarter*	*3rd Quarter*	*4th Quarter*	*Year*
Budgeted direct labor-hours	12,800	12,000	11,200	12,000	48,000
Variable overhead rate	$2.50	$2.50	$2.50	$2.50	$2.50
Variable manufacturing overhead	$ 32,000	$ 30,000	$ 28,000	$ 30,000	$120,000
Fixed manufacturing overhead	90,000	90,000	90,000	90,000	360,000
Total manufacturing overhead	122,000	120,000	118,000	120,000	480,000
Less depreciation	34,000	34,000	34,000	34,000	136,000
Cash disbursements for manufacturing overhead	$ 88,000	$ 86,000	$ 84,000	$ 86,000	$344,000

Problem 9-13 (60 minutes)

1. Schedule of cash receipts:

Cash sales—June	$ 60,000
Collections on accounts receivable:	
May 31 balance	72,000
June (50% × 190,000)	95,000
Total cash receipts	$227,000

Schedule of cash payments for purchases:

May 31 accounts payable balance	$ 90,000
June purchases (40% × 200,000)	80,000
Total cash payments	$170,000

PHOTOTEC, INC.
Cash Budget
For the Month of June

Cash balance, beginning	$ 8,000
Add receipts from customers (above)	227,000
Total cash available	235,000
Less disbursements:	
Purchase of inventory (above)	170,000
Operating expenses	51,000
Purchases of equipment	9,000
Total cash disbursements	230,000
Excess of receipts over disbursements	5,000
Financing:	
Borrowings—note	18,000
Repayments—note	(15,000)
Interest	(500)
Total financing	2,500
Cash balance, ending	$ 7,500

Problem 9-13 (continued)

2.

PHOTOTEC, INC.
Budgeted Income Statement
For the Month of June

Sales		$250,000
Cost of goods sold:		
Beginning inventory	$ 30,000	
Add purchases	200,000	
Goods available for sale	230,000	
Ending inventory	40,000	
Cost of goods sold		190,000
Gross margin		60,000
Operating expenses ($51,000 + $2,000)		53,000
Net operating income		7,000
Interest expense		500
Net income		$ 6,500

3.

PHOTOTEC, INC.
Budgeted Balance Sheet
June 30

Assets

Cash	$ 7,500
Accounts receivable (50% × 190,000)	95,000
Inventory	40,000
Buildings and equipment, net of depreciation ($500,000 + $9,000 – $2,000)	507,000
Total assets	$649,500

Liabilities and Equity

Accounts payable (60% × 200,000)	$120,000
Note payable	18,000
Capital stock	420,000
Retained earnings ($85,000 + $6,500)	91,500
Total liabilities and equity	$649,500

Problem 9-14 (45 minutes)

1. Schedule of expected cash collections:

	Month			
	April	*May*	*June*	*Quarter*
From accounts receivable..	$141,000	$ 7,200		$148,200
From April sales:				
20% × 200,000.....	40,000			40,000
75% × 200,000.....		150,000		150,000
4% × 200,000.....			$ 8,000	8,000
From May sales:				
20% × 300,000.....		60,000		60,000
75% × 300,000.....			225,000	225,000
From June sales:				
20% × 250,000.....			50,000	50,000
Total cash collections.....	$181,000	$217,200	$283,000	$681,200

Problem 9-14 (continued)

2. Cash budget:

	Month			
	April	*May*	*June*	*Quarter*
Cash balance, beginning	$ 26,000	$ 27,000	$ 20,200	$ 26,000
Add receipts:				
Collections from customers	181,000	217,200	283,000	681,200
Total available	207,000	244,200	303,200	707,200
Less disbursements:				
Merchandise purchases	108,000	120,000	180,000	408,000
Payroll	9,000	9,000	8,000	26,000
Lease payments	15,000	15,000	15,000	45,000
Advertising	70,000	80,000	60,000	210,000
Equipment purchases	8,000	—	—	8,000
Total disbursements	210,000	224,000	263,000	697,000
Excess (deficiency) of receipts over disbursements	(3,000)	20,200	40,200	10,200
Financing:				
Borrowings	30,000	—	—	30,000
Repayments	—	—	(30,000)	(30,000)
Interest	—	—	(1,200)	(1,200)
Total financing	30,000	—	(31,200)	(1,200)
Cash balance, ending	$ 27,000	$ 20,200	$ 9,000	$ 9,000

3. If the company needs a minimum cash balance of $20,000 to start each month, the loan cannot be repaid in full by June 30. If the loan is repaid in full, the cash balance will drop to only $9,000 on June 30, as shown above. Some portion of the loan balance will have to be carried over to July, at which time the cash inflow should be sufficient to complete repayment.

Problem 9-15 (45 minutes)

1. Stokes is using the budget as a club to pressure employees and as a way to find someone to blame rather than as a legitimate planning and control tool. His planning seems to consist of telling everyone to increase sales volume by 40%. This kind of "planning" requires no analysis, no intelligence, no business insight, and is very likely viewed with contempt by the employees of the company.

2. The way in which the budget is being used is likely to breed hostility, tension, mistrust, lack of respect, and actions designed to meet targets using any means available. Unreasonable targets imposed from the top, coupled with a "no excuses" policy and the threat of being fired, create an ideal breeding ground for questionable business practices. Managers who would not, under ordinary circumstances, cheat or cut corners may do so if put under this kind of pressure.

3. As the old saying goes, Keri Kalani is "between a rock and a hard place." The Standards of Ethical Conduct for Management Accountants states that management accountants have a responsibility to "disclose fully all relevant information that could reasonably be expected to influence an intended user's understanding of the reports, comments, and recommendations presented." Assuming that Keri helps prepare the Production Department's reports to top management, collaborating with her boss in hiding losses due to defective disk drives would clearly violate this standard. Apart from the misrepresentation on the accounting reports, the policy of shipping defective returned units to customers is bound to have a negative effect on the company's reputation. If this policy were to become widely known, it would very likely have a devastating effect on the company's future sales. Moreover, this practice may be illegal under statutes designed to protect consumers.

   Having confronted her boss with no satisfactory resolution of the problem, Keri must now decide what to do. The Standards of Ethical Conduct for Management Accountants suggests that Keri go to the next higher level in management to present her case. Unfortunately, in the prevailing moral climate at PrimeDrive, she is unlikely to win any blue ribbons for blowing the whistle on her boss. All of the managers below Stokes are likely to be in fear of losing their own jobs and many of them may have taken actions to meet Stokes' targets that they are not proud

Problem 9-15 (continued)

of either. It would take tremendous courage for Keri to take the problem all the way up to Stokes himself—particularly in view of his less-than-humane treatment of subordinates. And going to the Board of Directors is unlikely to work either since Stokes and his venture capital firm apparently control the Board. Resigning, with a letter of memorandum to the individual who is most likely to be concerned and to be able to take action, may be the only ethical course of action that is left open to Keri in this situation. Of course, she must pay her rent, so hopefully she has good alternative employment opportunities.

Note: This problem is very loosely based on the MiniScribe scandal reported in the December, 1992 issue of *Management Accounting* as well as in other business publications. After going bankrupt, it was discovered that managers at MiniScribe had perpetrated massive fraud as a result of the unrelenting pressure to meet unrealistic targets. Q. T. Wiles, the real chairman of MiniScribe, was reported to have behaved much as described in this problem. Keri Kalani is, alas, a fabrication. Hopefully, there were people like Keri at MiniScribe who tried to do something to stop the fraud.

Problem 9-16 (60 minutes)

1. The sales budget for the third quarter:

	July	*Aug.*	*Sept.*	*Quarter*
Budgeted sales (pairs)	6,000	7,000	5,000	18,000
Selling price per pair	× $50	× $50	× $50	× $50
Total budgeted sales	$300,000	$350,000	$250,000	$900,000

The schedule of expected cash collections from sales:

	July	*Aug.*	*Sept.*	*Quarter*
Accounts receivable, beginning balance	$130,000			$130,000
July sales: $300,000 × 40%, 50%	120,000	$150,000		270,000
August sales: $350,000 × 40%, 50%		140,000	$175,000	315,000
September sales: $250,000 × 40%			100,000	100,000
Total cash collections	$250,000	$290,000	$275,000	$815,000

2. The production budget for July through October:

	July	*Aug.*	*Sept.*	*Oct.*
Budgeted sales (pairs)	6,000	7,000	5,000	4,000
Add desired ending inventory	700	500	400	300
Total needs	6,700	7,500	5,400	4,300
Less beginning inventory	600	700	500	400
Required production (pairs)	6,100	6,800	4,900	3,900

Problem 9-16 (continued)

3. The materials purchases budget for the third quarter:

	July	*Aug.*	*Sept.*	*Quarter*
Required production—pairs (above)	6,100	6,800	4,900	17,800
Raw materials needs per pair	× 2lbs.	× 2lbs.	× 2lbs.	× 2lbs.
Production needs (lbs.)	12,200	13,600	9,800	35,600
Add desired ending inventory	2,720	1,960	1,560 *	1,560
Total needs	14,920	15,560	11,360	37,160
Less beginning inventory	2,440	2,720	1,960	2,440
Raw materials to be purchased	12,480	12,840	9,400	34,720
Cost of raw materials to be purchased at $2.50 per lb.	$31,200	$32,100	$23,500	$86,800

*3,900 pairs (October) × 2 lbs. per pair= 7,800 lbs.;
7,800 lbs. × 20% = 1,560 lbs.

The schedule of expected cash disbursements:

	July	*Aug.*	*Sept.*	*Quarter*
Accounts payable, beginning balance	$11,400			$11,400
July purchases:				
$31,200 × 60%, 40%	18,720	$12,480		31,200
August purchases:				
$32,100 × 60%, 40%		19,260	$12,840	32,100
September purchases:				
$23,500 × 60%			14,100	14,100
Total cash disbursements	$30,120	$31,740	$26,940	$88,800

Problem 9-17 (60 minutes)

1. Collections on sales:

	July	*August*	*Sept.*	*Quarter*
Cash sales	$ 8,000	$14,000	$10,000	$ 32,000
Credit sales:				
May: $30,000 × 80% × 20%	4,800			4,800
June: $36,000 × 80% × 70%, 20%	20,160	5,760		25,920
July: $40,000 × 80% × 10%, 70%, 20%	3,200	22,400	6,400	32,000
Aug.: $70,000 × 80% × 10%, 70%		5,600	39,200	44,800
Sept.: $50,000 × 80% × 10%			4,000	4,000
Total cash collections	$36,160	$47,760	$59,600	$143,520

2. a. Inventory purchases budget:

	July	*August*	*Sept.*	*Oct.*
Budgeted cost of goods sold	$24,000	$42,000	$30,000	$27,000
Add desired ending inventory*	31,500	22,500	20,250	
Total needs	55,500	64,500	50,250	
Less beginning inventory	18,000	31,500	22,500	
Required inventory purchases	$37,500	$33,000	$27,750	

*75% of the next month's budgeted cost of goods sold.

b. Schedule of expected cash disbursements for inventory:

	July	*August*	*Sept.*	*Quarter*
Accounts payable, June 30	$11,700			$11,700
July purchases	18,750	$18,750		37,500
August purchases		16,500	$16,500	33,000
September purchases			13,875	13,875
Total cash disbursements	$30,450	$35,250	$30,375	$96,075

Problem 9-17 (continued)

3.

JANUS PRODUCTS, INC.
Cash Budget
For the Quarter Ended September 30

	July	*August*	*Sept.*	*Quarter*
Cash balance, beginning	$ 8,000	$ 8,410	$ 8,020	$ 8,000
Add collections from sales	36,160	47,760	59,600	143,520
Total cash available	44,160	56,170	67,620	151,520
Less disbursements:				
For inventory purchases	30,450	35,250	30,375	96,075
For selling expenses	7,200	11,700	8,500	27,400
For administrative expenses	3,600	5,200	4,100	12,900
For land	4,500	0	0	4,500
For dividends	0	0	1,000	1,000
Total disbursements	45,750	52,150	43,975	141,875
Excess (deficiency) of cash available over disbursements	(1,590)	4,020	23,645	9,645
Financing:				
Borrowings	10,000	4,000		14,000
Repayment	0	0	(14,000)	(14,000)
Interest at 12%*	0	0	(380)	(380)
Total financing	10,000	4,000	(14,380)	(380)
Cash balance, ending	$ 8,410	$ 8,020	$ 9,265	$ 9,265

* $10,000 × 12% × 3/12 = $300
$ 4,000 × 12% × 2/12 = 80
$380

Problem 9-18 (60 minutes)

1. a. Schedule of expected cash collections:

	Year 2 Quarter				
	First	*Second*	*Third*	*Fourth*	*Total*
Year 1—Fourth quarter sales:					
$300,000 × 65%	$195,000				$195,000
Year 2—First quarter sales:					
$400,000 × 33%	132,000				132,000
$400,000 × 65%		$260,000			260,000
Year 2—Second quarter sales:					
$500,000 × 33%		165,000			165,000
$500,000 × 65%			$325,000		325,000
Year 2—Third quarter sales:					
$600,000 × 33%			198,000		198,000
$600,000 × 65%				$390,000	390,000
Year 2—Fourth quarter sales:					
$480,000 × 33%				158,400	158,400
Total cash collections	$327,000	$425,000	$523,000	$548,400	$1,823,400

Problem 9-18 (continued)

b. Schedule of budgeted cash disbursements for merchandise purchases:

	Year 2 Quarter				
	First	*Second*	*Third*	*Fourth*	*Total*
Year 1—Fourth quarter purchases:					
$180,000 × 80%	$144,000				$ 144,000
Year 2—First quarter purchases:					
$260,000 × 20%	52,000				52,000
$260,000 × 80%		$208,000			208,000
Year 2—Second quarter purchases:					
$310,000 × 20%		62,000			62,000
$310,000 × 80%			$248,000		248,000
Year 2—Third quarter purchases:					
$370,000 × 20%			74,000		74,000
$370,000 × 80%				$296,000	296,000
Year 2—Fourth quarter purchases:					
$240,000 × 20%				48,000	48,000
Total cash disbursements	$196,000	$270,000	$322,000	$344,000	$1,132,000

Problem 9-18 (continued)

2.

	Year 2 Quarter				
	First	*Second*	*Third*	*Fourth*	*Year*
Budgeted sales	$400,000	$500,000	$600,000	$480,000	$1,980,000
Variable expense rate	× 12%	× 12%	× 12%	× 12%	× 12%
Variable expenses	48,000	60,000	72,000	57,600	237,600
Fixed expenses	90,000	90,000	90,000	90,000	360,000
Total expenses	138,000	150,000	162,000	147,600	597,600
Less depreciation	20,000	20,000	20,000	20,000	80,000
Cash disbursements	$118,000	$130,000	$142,000	$127,600	$ 517,600

Problem 9-18 (continued)

3. Cash budget for Year 2:

	Year 2 Quarter				
	First	*Second*	*Third*	*Fourth*	*Year*
Cash balance, beginning	$ 20,000	$ 23,000	$ 18,000	$ 18,500	$ 20,000
Add collections from sales	327,000	425,000	523,000	548,400	1,823,400
Total cash available	347,000	448,000	541,000	566,900	1,843,400
Less disbursements:					
Merchandise purchases	196,000	270,000	322,000	344,000	1,132,000
Operating expenses	118,000	130,000	142,000	127,600	517,600
Dividends	10,000	10,000	10,000	10,000	40,000
Land	0	80,000	48,500	0	128,500
Total disbursements	324,000	490,000	522,500	481,600	1,818,100
Excess (deficiency) of receipts over disbursements	23,000	(42,000)	18,500	85,300	25,300
Financing:					
Borrowings	0	60,000	0	0	60,000
Repayments	0	0	0	(60,000)	(60,000)
Interest*	0	0	0	(4,500)	(4,500)
Total financing	0	60,000	0	(64,500)	(4,500)
Cash balance, ending	$ 23,000	$ 18,000	$ 18,500	$ 20,800	$ 20,800

*60,000 × 10% × 9/12 = $4,500.

Problem 9-19 (120 minutes)

1. Schedule of expected cash collections:

	April	*May*	*June*	*Total*
Cash sales	$14,000	$17,000	$18,000	$ 49,000
Credit sales	48,000	56,000	68,000	172,000
Total collections	$62,000	$73,000	$86,000	$221,000

2. a. Inventory purchases budget:

	April	*May*	*June*	*Total*
Budgeted cost of goods sold	$42,000	$51,000	$54,000	$147,000
Add desired ending inventory*	15,300	16,200	9,000	9,000
Total needs	57,300	67,200	63,000	156,000
Less beginning inventory	12,600	15,300	16,200	12,600
Required purchases	$44,700	$51,900	$46,800	$143,400

*At April 30: $51,000 × 30% = $15,300.
At June 30: $50,000 July sales × 60% × 30% = $9,000.

b. Schedule of cash disbursements for purchases:

	April	*May*	*June*	*Total*
For March purchases	$18,300			$18,300
For April purchases	22,350	$22,350		44,700
For May purchases		25,950	$25,950	51,900
For June purchases			23,400	23,400
Total cash disbursements	$40,650	$48,300	$49,350	$138,300

Problem 9-19 (continued)

3. Schedule of cash disbursements for operating expenses:

	April	*May*	*June*	*Total*
Salaries and wages	$ 7,500	$ 7,500	$ 7,500	$22,500
Shipping	4,200	5,100	5,400	14,700
Advertising	6,000	6,000	6,000	18,000
Other expenses	2,800	3,400	3,600	9,800
Total cash disbursements for operating expenses	$20,500	$22,000	$22,500	$65,000

4. Cash budget:

	April	*May*	*June*	*Total*
Cash balance, beginning	$ 9,000	$ 8,350	$ 8,050	$ 9,000
Add cash collections	62,000	73,000	86,000	221,000
Total cash available	71,000	81,350	94,050	230,000
Less disbursements:				
For inventory purchases	40,650	48,300	49,350	138,300
For operating expenses	20,500	22,000	22,500	65,000
For equipment purchases	11,500	3,000	0	14,500
For dividends	0	0	3,500	3,500
Total disbursements	72,650	73,300	75,350	221,300
Excess (deficiency) of cash	(1,650)	8,050	18,700	8,700
Financing:				
Borrowings	10,000	0	0	10,000
Repayments	0	0	(10,000)	(10,000)
Interest*	0	0	(300)	(300)
Total financing	10,000	0	(10,300)	(300)
Cash balance, ending	$ 8,350	$ 8,050	$ 8,400	$ 8,400

* $10,000 × 12% × 3/12 = $300.

Problem 9-19 (continued)

5. Income Statement:

NORDIC COMPANY
Income Statement
For the Quarter Ended June 30

Sales		$245,000
Less cost of goods sold:		
Beginning inventory (given)	$ 12,600	
Add purchases (Part 2)	143,400	
Goods available for sale	156,000	
Ending inventory (Part 2)	9,000	147,000
Gross margin		98,000
Less operating expenses:		
Salaries and wages (Part 3)	22,500	
Shipping (Part 3)	14,700	
Advertising (Part 3)	18,000	
Depreciation	6,000	
Other expenses (Part 3)	9,800	71,000
Net operating income		27,000
Less interest expense (Part 4)		300
Net income		$ 26,700

Problem 9-19 (continued)

6. Balance sheet:

NORDIC COMPANY
Balance Sheet
June 30

Assets

Current assets:		
Cash (Part 4)		$ 8,400
Accounts receivable (80% × $90,000)		72,000
Inventory (Part 2)		9,000
Total current assets		89,400
Buildings and equipment, net ($214,100 + $14,500 – $6,000)		222,600
Total assets		$312,000

Liabilities and Equity

Current liabilities:		
Accounts payable (Part 2: 50% × $46,800)		$ 23,400
Stockholders' equity:		
Capital stock	$190,000	
Retained earnings*	98,600	288,600
Total liabilities and equity		$312,000

* Retained earnings, beginning	$ 75,400
Add net income	26,700
Total	102,100
Less dividends	3,500
Retained earnings, ending	$ 98,600

Problem 9-20 (120 minutes)

1. Schedule of expected cash collections:

	January	*February*	*March*	*Quarter*
Cash sales	$28,000	$32,000	$34,000	$ 94,000
Credit sales*	36,000	42,000	48,000	126,000
Total collections	$64,000	$74,000	$82,000	$220,000

*60% of the preceding month's sales.

2. Inventory purchases budget:

	January	*February*	*March*	*Quarter*
Budgeted cost of goods sold (70% of sales)	$49,000	$56,000	$59,500	$164,500
Add desired ending inventory*	11,200	11,900	7,700	7,700
Total needs	60,200	67,900	67,200	172,200
Less beginning inventory	9,800	11,200	11,900	9,800
Required purchases	$50,400	$56,700	$55,300	$162,400

*At March 30: April sales $55,000 × 70% × 20% = $7,700.

Schedule of Expected Cash Disbursements—Purchases

	January	*February*	*March*	*Quarter*
December purchases	$32,550			$ 32,550
January purchases	12,600	$37,800		50,400
February purchases		14,175	$42,525	56,700
March purchases			13,825	13,825
Total disbursements	$45,150	$51,975	$56,350	$153,475

Problem 9-20 (continued)

3. Schedule of Expected Cash Disbursements—Operating Expenses

	January	*February*	*March*	*Quarter*
Salaries and wages	$12,000	$12,000	$12,000	$36,000
Rent	1,800	1,800	1,800	5,400
Other expenses	5,600	6,400	6,800	18,800
Total disbursements	$19,400	$20,200	$20,600	$60,200

4. Cash budget:

	January	*February*	*March*	*Quarter*
Cash balance, beginning	$ 6,000	$ 5,450	$ 5,275	$ 6,000
Add cash collections	64,000	74,000	82,000	220,000
Total cash available	70,000	79,450	87,275	226,000
Less disbursements:				
For inventory	45,150	51,975	56,350	153,475
For operating expenses	19,400	20,200	20,600	60,200
For equipment	3,000	8,000	0	11,000
Total disbursements	67,550	80,175	76,950	224,675
Excess (deficiency) of cash	2,450	(725)	10,325	1,325
Financing:				
Borrowings	3,000	6,000	0	9,000
Repayments	0	0	(5,000)	(5,000)
Interest*	0	0	(130)	(130)
Total financing	3,000	6,000	(5,130)	3,870
Cash balance, ending	$ 5,450	$ 5,275	$ 5,195	$ 5,195

* $3,000 × 12% × 3/12 = $ 90
2,000 × 12% × 2/12 = 40
Total interest $130

Problem 9-20 (continued)

5.

PICANUY CORPORATION
Income Statement
For the Quarter Ended March 31

Sales ($70,000 + $80,000 + $85,000)		$235,000
Less cost of goods sold:		
Beginning inventory (Given)	$ 9,800	
Add purchases (Part 2)	162,400	
Goods available for sale	172,200	
Less ending inventory (Part 2)	7,700	164,500
Gross margin		70,500
Less operating expenses:		
Salaries and wages (Part 3)	36,000	
Rent (Part 3)	5,400	
Depreciation (Given)	2,400	
Other expenses (Part 3)	18,800	62,600
Net operating income		7,900
Less interest expense*		210
Net income		$ 7,690

*Interest paid of $130 plus accrued, but unpaid, interest on the outstanding loan of $4,000 × 12% × 2/12 = $80.

Problem 9-20 (continued)

6.

PICANUY CORPORATION
Balance Sheet
March 31

Assets

Current assets:		
Cash (Part 4)		$ 5,195
Accounts receivable ($85,000 × 60%)		51,000
Inventory (Part 2)		7,700
Total current assets		63,895
Fixed assets—net		
($110,885 + $3,000 + $8,000 – $2,400)		119,485
Total assets		$183,380

Liabilities and Equity

Accounts payable (Part 2: $55,300 × 75%)		$ 41,475
Interest payable		80
Bank loan payable		4,000
Stockholders' equity:		
Capital stock (Given)	$100,000	
Retained earnings*	37,825	137,825
Total liabilities and equity		$183,380

* Retained earnings, beginning	$30,135
Add net income	7,690
Retained earnings, ending	$37,825

Problem 9-21 (90 minutes)

1.

	April	*May*	*June*	*Quarter*
Budgeted sales	20,000	35,000	50,000	105,000
Add desired ending inventory*	7,000	10,000	9,000	9,000
Total needs	27,000	45,000	59,000	114,000
Less beginning inventory	4,000	7,000	10,000	4,000
Required production	23,000	38,000	49,000	110,000

*20% of the next month's sales.

2.

Material #208:	*April*	*May*	*June*	*Quarter*
Required production—units	23,000	38,000	49,000	110,000
Material #208 per unit	× 4 lbs.	× 4 lbs.	× 4 lbs.	× 4 lbs.
Production needs—pounds	92,000	152,000	196,000	440,000
Add desired ending inventory*	76,000	98,000	84,000	84,000
Total needs—pounds	168,000	250,000	280,000	524,000
Less beginning inventory	46,000	76,000	98,000	46,000
Required purchases—pounds	122,000	174,000	182,000	478,000
Required purchases at $5.00 per pound	$610,000	$870,000	$910,000	$2,390,000

* 50% of the following month's production needs. For June: July production 45,000 + 6,000 – 9,000 = 42,000 units; 42,000 units × 4 lbs. per unit = 168,000 lbs.; 168,000 lbs. × 50% = 84,000 lbs.

Problem 9-21 (continued)

Material #311:	*April*	*May*	*June*	*Quarter*
Required production—units	23,000	38,000	49,000	110,000
Material #311 per unit	× 9 ft.	× 9 ft	× 9 ft	× 9 ft
Production needs—feet	207,000	342,000	441,000	990,000
Add desired ending inventory*	114,000	147,000	126,000	126,000
Total needs—feet	321,000	489,000	567,000	1,116,000
Less beginning inventory	69,000	114,000	147,000	69,000
Required purchases—feet	252,000	375,000	420,000	1,047,000
Required purchases at $2.00 per foot	$504,000	$750,000	$840,000	$2,094,000

* 1/3 of the following month's production needs. For June:
July production 45,000 + 6,000 – 9,000 = 42,000 units;
42,000 units × 9 ft. per unit = 378,000 ft.;
378,000 ft. × 1/3 = 126,000 ft.

3. Direct labor budget:

		Direct Labor Hours			
	Units Produced	*Per Unit*	*Total*	*Cost per DLH*	*Total Cost*
Shaping	110,000	0.25	27,500	$18.00	$ 495,000
Assembly	110,000	0.70	77,000	$16.00	1,232,000
Finishing	110,000	0.10	11,000	$20.00	220,000
			115,500		$1,947,000

Problem 9-21 (continued)

4. Manufacturing overhead budget:

Expected production for the year	250,000
Actual production through March 31	32,000
Expected production, April through December	218,000
Variable manufacturing overhead rate per unit ($112,000 ÷ 32,000 units)	× $3.50
Variable manufacturing overhead	$ 763,000
Fixed manufacturing overhead ($4,628,000 × ¾)	3,471,000
Total manufacturing overhead	4,234,000
Less depreciation ($2,910,000 × ¾)	2,182,500
Cash disbursement for manufacturing overhead	$2,051,500

Problem 9-22 (45 minutes)

1. Collection pattern:

	*Percentage of Sales Uncollected at April 30**	*Percentage to Be Collected in May*
a. January	2½%	2½%
b. February	6%	(b) – (a) = 3½%
c. March	10%	(c) – (b) = 4%
d. April	100%	(d) – (c) = 90%

*Given.

Schedule of expected cash collections:

From January sales (2½% × $340,000)	$ 8,500
From February sales (3½% × $530,000)	18,550
From March sales (4% × $470,000)	18,800
From April sales (90% × $550,000)	495,000
Total	540,850
Less cash discount ($495,000 × 50% × 2%)	4,950
Net cash collections	$535,900

Problem 9-22 (continued)

2.

HOUSEHALL COMPANY, LTD.
Cash Budget
May

Cash balance, beginning		$ 5,750
Add collections from customers		535,900
Total cash available		541,650
Less disbursements:		
Raw material purchases (April)		320,000
Direct labor (May)		85,000
Accrued wages (April)		11,000
Shipping (May)		1,000
Indirect labor		34,000
Utilities		1,500
Wage benefits:		
Unemployment insurance	$1,350	
Canada pension	820	
May holiday pay	2,040	
Company pension ($5,000 – $900)	4,100	
Group insurance ($730 per month × 3 months)	2,190	10,500
Sales and administrative salaries		60,000
Total disbursements		523,000
Excess of cash		$ 18,650

3. The treasurer's statement is incorrect. Even though the cash budget shows that cash will be available at the end of a month, there is no assurance that shortages will not develop on a day-to-day basis *during* the month. Cash receipts may come late in a month, for example, whereas cash payments may be made early in the month causing a temporary cash shortage. Unless receipts and payments occur uniformly over time, cash budgeting may be needed on a daily or weekly basis for operational purposes.

Case 9-23 (45 minutes)

1. The budgetary control system of Ferguson & Son appears to have several very important shortcomings that reduce its effectiveness and may in fact cause it to interfere with good performance. Some of the shortcomings are itemized and explained below.
   a. *Lack of Coordinated Goals.* Emory had been led to believe high quality output is the goal; it now appears low cost is the goal. Employees do not know what the goals are and thus cannot make decisions that lead toward reaching the goals.
   b. *Influence of Uncontrollable Factors.* The actual performance relative to budget is greatly influenced by uncontrollable factors (i.e., rush orders, lack of prompt maintenance). Thus, the variance reports serve little purpose for evaluation of performance or for locating controllable factors to improve performance. As a result, the system does not encourage coordination among departments.
   c. *The Short-Run Perspectives.* The monthly evaluation and the budget tightening on a monthly basis results in a very short-run perspective by the supervisors. This will result in inappropriate decisions (i.e., inspect the forklift trucks rather than repair inoperative equipment, fail to report supplies usage).
   d. *System Does Not Motivate.* The budgetary system appears to focus on evaluation of performance even though most of the essential factors for that purpose are missing. The focus on evaluation and the weaknesses take away an important benefit of the budgetary system—motivation of employees.

Case 9-23 (continued)

2. The improvements in the budgetary control system should correct the deficiencies described above. The system should:

   a. more clearly define the company's objectives.

   b. develop an accounting reporting system that better matches controllable factors with supervisor responsibility and authority.

   c. establish budgets for appropriate time periods that do not change monthly simply as a result of a change in the prior month's performance.

   The entire company from top management down should be educated in sound budgetary procedures so that all parties will understand the total process and recognize the benefit to be gained.

(Unofficial CMA Solution, adapted)

Case 9-24 (75 minutes)

1. Before a cash budget can be prepared, the following supporting computations must be made:

Cash payments for skate purchases from the manufacturer:

Purchases:

	February	*March*	*April*	*May*	*June*	*July*
Budgeted sales	$160,000	$164,000	$172,000	$176,000	$184,000	$190,000
Cost of sales (75%)	120,000	123,000	129,000	132,000	138,000	142,500
Purchases (one month in advance)	123,000	129,000	132,000	138,000	142,500	

Payments for purchases:

	February	*March*	*April*	*May*	*June*	*July*	*Quarter*
February purchases:							
$123,000 × 50%			$ 61,500				$ 61,500
March purchases:							
$129,000 × 50%, 50%			64,500	$ 64,500			129,000
April purchases:							
$132,000 × 50%, 50%				66,000	$ 66,000		132,000
May purchases:							
$138,000 × 50%					69,000		69,000
Total cash payments			$126,000	$130,500	$135,000		$391,500

Case 9-24 (continued)

Operating expenses:

	April	*May*	*June*	*Quarter*
Salaries and wages (1/12 of annual)	$10,000	$10,000	$10,000	$30,000
Advertising and promotion (1/12 of annual)	1,000	1,000	1,000	3,000
Property taxes	0	0	4,500	4,500
Insurance (1/12 of annual)	400	400	400	1,200
Utilities (1/12 of annual)	500	500	500	1,500
Depreciation (not a cash flow)	—	—	—	—
Total disbursements for operating expenses	$11,900	$11,900	$16,400	$40,200

Cash receipts from sales:

	April	*May*	*June*	*Quarter*
February sales: $160,000 × 70%	$112,000			$112,000
March sales: $164,000 × 30%, 70%	49,200	$114,800		164,000
April sales: $172,000 × 30%, 70%		51,600	$120,400	172,000
May sales: $176,000 × 30%			52,800	52,800
Total cash receipts	$161,200	$166,400	$173,200	$500,800

Case 9-24 (continued)

Given the above data, the cash budget can be prepared as follows:

	April	*May*	*June*	*Quarter*
Cash balance, beginning	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Add cash receipts (see above)	161,200	166,400	173,200	500,800
Total cash available	181,200	186,400	193,200	520,800
Less cash disbursements:				
Purchases (see above)	126,000	130,500	135,000	391,500
Operating expenses (see above)	11,900	11,900	16,400	40,200
Income taxes (given)	16,000			16,000
Equipment and facilities (given)	22,300	29,000		51,300
Total disbursements	176,200	171,400	151,400	499,000
Excess (deficiency) of cash available over disbursements	5,000	15,000	41,800	21,800
Financing:				
Borrowings	15,000	5,000	0	20,000
Repayments			(20,000)	(20,000)
Interest*			(550)	(550)
Invested funds			(1,250)	(1,250)
Total financing	15,000	5,000	(21,800)	(1,800)
Cash balance, ending	$ 20,000	$ 20,000	$ 20,000	$ 20,000

*($15,000 × 12% × 3/12) + ($5,000 × 12% × 2/12)

Case 9-24 (continued)

2. Cash budgeting is particularly important for a growing company like Roller, Ltd., because as sales grow, so do expenditures for inputs. These expenditures generally precede cash receipts, often by a considerable time period, and a growing company must be prepared to finance this gap between cash outflows and cash inflows. Thus, cash budgeting is essential because it will forewarn managers of impending cash problems. And, a cash budget will often be necessary documentation if it becomes necessary to arrange for financing.

Case 9-25 (120+ minutes)

1. a. Sales budget:

	April	*May*	*June*	*Quarter*
Budgeted sales in units	35,000	45,000	60,000	140,000
Selling price per unit	× $8	× $8	× $8	× $8
Total sales	$280,000	$360,000	$480,000	$1,120,000

b. Schedule of expected cash collections:

February sales	$ 48,000			$ 48,000
March sales	112,000	$ 56,000		168,000
April sales	70,000	140,000	$ 70,000	280,000
May sales		90,000	180,000	270,000
June sales			120,000	120,000
Total cash collections	$230,000	$286,000	$370,000	$ 886,000

c. Budgeted purchases:

Budgeted sales in units	35,000	45,000	60,000	140,000
Add budgeted ending inventory*	40,500	54,000	36,000	36,000
Total needs	75,500	99,000	96,000	176,000
Less beginning inventory	31,500	40,500	54,000	31,500
Required unit purchases	44,000	58,500	42,000	144,500
Unit cost	× $5	× $5	× $5	× $5
Required dollar purchases	$220,000	$292,500	$210,000	$ 722,500

*90% of the next month's sales in units.

Case 9-25 (continued)

d. Budgeted cash disbursements for purchases:

	April	*May*	*June*	*Quarter*
March purchases.....	$ 85,750			$ 85,750
April purchases	110,000	$110,000		220,000
May purchases.....		146,250	$146,250	292,500
June purchases.....			105,000	105,000
Total cash disbursements.....	$195,750	$256,250	$251,250	$ 703,250

Case 9-25 (continued)

2.

CRAVAT SALES COMPANY
Cash Budget
For the Three Months Ending June 30

	April	*May*	*June*	*Quarter*
Cash balance, beginning	$ 14,000	$ 10,000	$ 10,000	$ 14,000
Add receipts from customers (Part 1 b.)	230,000	286,000	370,000	886,000
Total cash available	244,000	296,000	380,000	900,000
Less disbursements:				
Purchase of inventory (Part 1 d.)	195,750	256,250	251,250	703,250
Sales commissions	35,000	45,000	60,000	140,000
Salaries and wages	22,000	22,000	22,000	66,000
Utilities	14,000	14,000	14,000	42,000
Miscellaneous	3,000	3,000	3,000	9,000
Dividends paid	12,000	0	0	12,000
Land purchases	0	25,000	0	25,000
Total disbursements	281,750	365,250	350,250	997,250
Excess (deficiency) of receipts over disbursements	(37,750)	(69,250)	29,750	(97,250)
Financing:				
Borrowings	47,750	79,250	0	127,000
Repayments	0	0	(16,000)	(16,000)
Interest*	0	0	(3,018)	(3,018)
Total financing	47,750	79,250	(19,018)	107,982
Cash balance, ending	$ 10,000	$ 10,000	$ 10,732	$ 10,732

* $47,750 × 12% × 3/12 = $1,433
$79,250 × 12% × 2/12 = 1,585
Total interest = $3,018

Case 9-25 (continued)

3.

CRAVAT SALES COMPANY
Budgeted Income Statement
For the Three Months Ended June 30

Sales revenue (Part 1 a.)		$1,120,000
Less variable expenses:		
Cost of goods sold (140,000 ties @ $5 per tie)	$700,000	
Commissions (140,000 ties @ $1 per tie)	140,000	840,000
Contribution margin		280,000
Less fixed expenses:		
Wages and salaries	66,000	
Utilities	42,000	
Insurance expired	3,600	
Depreciation	4,500	
Miscellaneous	9,000	125,100
Net operating income		154,900
Less interest expense		3,018
Net income		$ 151,882

Case 9-25 (continued)

4.

CRAVAT SALES COMPANY
Budgeted Balance Sheet
June 30

Assets

Cash (Part 2)	$ 10,732
Accounts receivable (see below)	450,000
Inventory (36,000 ties @ $5 per tie)	180,000
Unexpired insurance ($14,400 – $3,600)	10,800
Fixed assets, net of depreciation ($172,700 + $25,000 – $4,500)	193,200
Total assets	$844,732

Liabilities and Equity

Accounts payable, purchases (50% × $210,000 from Part 1 c.)	$105,000
Dividends payable	12,000
Notes payable, bank (Part 2; $127,000 – $16,000)	111,000
Capital stock, no par	300,000
Retained earnings (see below)	316,732
Total liabilities and equity	$844,732

Accounts receivable at June 30:

25% × May sales of $360,000	$90,000
75% × June sales of $480,000	360,000
Total	$450,000

Retained earnings at June 30:

Balance, March 31	$176,850
Add net income (Part 3)	151,882
Total	328,732
Less dividends declared	12,000
Balance, June 30	$316,732

Group Exercise 9-26

1. Across-the-board cuts may be politically palatable and may be perceived as fair by many, but they are indiscriminate. Cuts are taken out of programs without regard to their importance to the university and students.

2. When determining which programs should receive greater or smaller reductions in their budgets, administrators must make judgments about which programs can be cut with the least harm to central purposes of the university.

3. If cuts are likely to continue, administrators should be particularly vigilant to monitor the quality and effectiveness of programs and to closely watch how well programs use financial resources.

4. To increase understanding and cooperation, the decision-making process should be participative. Those who will be affected by the decisions should have some say in the decision-making.

5. By allowing individuals to participate in the budgeting process and by attempting to build consensus, the animosity that may be felt by those affected by cuts may be reduced. However, this is a two-edged sword. Allowing lower-level administrators to participate in the decision-making may invite turf-protecting tactics. Moreover, it may be impossible to build consensus because of resistance to change. These are not easy problems to deal with.