Chapter 22

Pre-Lecture Videos

1. Budgeting involves **establishing specific goals**, **executing plans to achieve the goals**, **periodically comparing actual results with the goals**.
2. Budgeting does not affect the following managerial functions: **planning**, **directing**, and **controlling**.
3. The responsibility of developing an annual budget is normally assigned to **the budget committe**.
4. The first step in preparing a flexible budget is to **identify the relevant activity levels**.
5. A budget that shows the expected results of a responsibility center for only one activity level is known as a **static** budget.
6. A master budget includes **financial budgets**, **a sales budget**, and an **expense budget**.
7. The financial budgets provide information for the budgeted **balance sheet**.
8. All of the following are integrated into the cost of goods sold budget *except* the **selling and administrative expenses** budget.
9. The **sales budget** is often used as the starting point for the selling and administrative expenses budget.
10. Pisa Trophy Co. budgeted production of 50,000 brass trophies for the coming year. Each trophy requires engraving. Assume that 15 minutes are required to engrave each trophy. If engraving labor costs $15.00 per hour, determine the direct labor cost budget for the year.
    - $50000 * \frac{15}{\frac{60}{15}} = 187500$
11. Which of the following formulas determines the budgeted units to be produced?
    - Expected Units to Be Sold + Desired Units in Ending Inventory – Estimated Units in Beginning Inventory
12. All of the following budgets are considered financial budgets *except* the **sales** budget.
13. A budget that estimates the expected receipts (inflows) and payments (outflows) of cash for a period of time is called a **cash** budget.

Mini Quiz

1. Budgeting supports the planning process by encouraging all of the following activities except **directing the day-to-day activities of the company.**
2. The labor budget in a service business is often called the **staffing budget**.
3. Which of the following is not a benefit of using a computerized budgeting system?
    - **Such systems require more employees to be involved in the process.**
4. The balance sheet budgets primarily reflect **financing and investing activities.**
5. A firm's operating budgets usually begin with the **sales budget**.
6. A **static** budget shows the expected results of a responsibility center for only one level of activity.
7. Which of the following statements regarding the production budget is true?
    - **It indicates the total units to be produced during the period, based on expected sales and desired inventory levels.**
8. On the cash budget, the amounts entered for estimated cash receipts come from **planned receipts from debt financing**, **the schedule of collections from sales**, **planned receipts from the issuance of common stock**.
9. Production and sales estimates for March for Streamline Systems Co. are as follows:

Item	Value
Estimated inventory (units), March 1	17,500
Desired inventory (unit), March 31	20,300
Expected sales volume (units)	35,000
Unit sales price	$15

What are the total units to be produced in March?

- $35000 + 20300 - 17500 = 37800$

10. As of January 1 of the current year, Phyllis Company had accounts receivable of $50,000. The sales for January, February, and March were $120,000, $140,000, and $160,000, respectively. 20% of each month's sales are for cash. Of the remaining 80% (the credit sales), 60% are collected in the month of sale, with the remaining 40% collected in the following month. What is the total cash collected (both from accounts receivable and for cash sales) in the month of March?
    - $(160000 * 20\%) + (160000 * 80\% * 60\%) + (140000 * 80\% * 40\%) = 153600$
11. The budgetary units of an organization are called **responsibility centers.**.
12. A hotel has 200 rooms. The housekeeping staff is able to clean 10 rooms per employee. The average employee is paid $100 per day. The hotel is expecting to be operating at full capacity for the coming weekend. How many employees will it need per weekend day?
    - **20**
13. Which of the following budgets is not part of the cost of goods sold budget?
    - **Cash budget**
14. For February, sales revenue is $900,000; sales commissions are 5% of sales; the sales manager's salary is $96,000; advertising expenses are $80,000; shipping expenses total 2% of sales; and miscellaneous selling expenses are $2,100 plus 1/2 of 1% of sales. Total selling expenses for the month of February are $(900000 * 5\%) + 96000 + 80000 + (900000 * 2\%) + [2100 + (900000 * .5\%)] = 245600$
15. The budgeted income statement is prepared by integrating all of the following budgets except for the **cash budget**.
16. Which of the following is likely true of a service business as compared to a manufacturing business?
    - **Its budgeted income statement is simplified.**
17. The guidelines for setting goals for a budget that will motivate employees and managers include **setting reasonable and attainable goals.**
18. The budget process involves doing all of the following except **not giving raises to all managers who fail to achieve operational goals specified in the budget.**
19. Production budgets are used to prepare which of the following budgets?
    - **Direct materials purchases, direct labor cost, factory overhead cost**
20. Soft and Silky, Inc., manufactures bedding sets. The budgeted production is for 53,000 comforters in the coming year. Each comforter requires 6 yards of material. The estimated January 1 beginning inventory is 31,000 yards. The desired ending balance is 30,000 yards of material. If the material costs $1.50 per yard, what is the materials budget for the coming year?
    - $[(53000 * 6) + 30000 - 31000] * 1.50 = 475000$
21. The sales budget might include revisions to prior year's sales quantities for all of the following except **productive capacity.**
22. The **production** budget estimates the number of units to be manufactured to meet budgeted sales and desired inventory levels.
23. The budgeted finished goods inventory and cost of goods sold for a manufacturing company for the year are as follows: January 1 finished goods, $765,000; December 31 finished goods, $540,000; cost of goods sold for the year, $2,560,000. The budgeted cost of goods manufactured for the year is $2560000 - 765000 + 540000 = 2335000$

Practice Exercises

Cash Budget

1. Pasadena Candle Inc. pays 40% of its purchases on account in the month of the purchase and 60% in the month following the purchase. If purchases are budgeted to be $40,000 for August and $36,000 for September.

   Prepare a simple cash budget for Pasadena Candle Inc.

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Pasadena Candle Inc. Schedule of Cash Payments for Purchases For the Month Ending September	
Payments for August purchases	$40000 * 60\% = 24000$
Payments for September purchases	$36000 * 40\% = \underline{14400}$
Total payments for purchases on account	$24000 + 14400 =$ **$\underline{38400}$**

Cost of goods sold budget

2. Pasadena Candle Inc. budgeted production of 785,000 candles for January. Each candle requires molding. Assume that six minutes are required to mold each candle. If molding labor costs $18 per hour, determine the direct labor cost budget for January. Wax is required to produce a candle. Assume 487,125 pounds of material will be purchased during January. The candle wax costs $1.24 per pound.

   Prepare a cost of goods sold budget for Pasadena Candle Inc. using the information above. Assume the estimated inventories on January 1 for finished goods and work in process were $200,000 and $41,250, respectively and direct materials wax inventory of 16,000 pounds. Also assume the desired inventories on January 31 for finished goods and work in process were $120,000 and $28,500, respectively and direct materials wax inventory of 12,500 pounds. Factory overhead was budgeted at $300,000. For those boxes in which you must enter subtracted or negative numbers use a minus sign.

Pasadena Candle Inc. Cost of Goods Sold Budget For the Month Ending January 31			
Finished goods inventory, January 1			200000
Work in process inventory, January 1		41250	
Direct materials:			
Direct materials inventory, January 1	$16000 * 1.24 = 19840$		
Direct materials purchases	$487125 * 1.24 =$ 604035		
Cost of direct materials available for use	$19840 + 604035 = 623875$		
Direct materials inventory, January 31	$12500 * 1.24$ -15500		
Cost of direct materials placed in production	$623875 - 15500 = 608375$		
Direct labor	$785000 * 6 * \frac{18}{60} = 1413000$		
Factory overhead	300000		
Total manufacturing costs		$608375 + 1413000 + 300000 =$ 2321375	
Total work in process during period		$41250 + 2321375 = 2362625$	
Work in process inventory, January 31		-28500	
Cost of goods manufactured			$2362625 - 28500 =$ 2334125
Cost of finished goods available for sale			$200000 + 2334125 = 2534125$
Finished goods inventory, January 31			-120000
Cost of goods sold			$1534125 - 120000 =$ **2414125**

Direct Labor Cost Budget

3. Pasadena Candle Inc. budgeted production of 785,000 candles for January. Each candle requires molding. Assume that six minutes are required to mold each candle. If molding labor costs $18 per hour, determine the direct labor cost budget for January.

Pasadena Candle Inc. Direct Labor Cost Budget For the Month Ending January 31	**Sign**		**Unit**
Hours required for assembly:			
Candles		4710000	min
Convert minutes to hours	\	60	min
Molding hours		78500	hours
Hourly rate	*	18	\
Total direct labor cost		1413000	$

Direct Materials Purchases Budget

4. Pasadena Candle Inc. budgeted production of 785,000 candles for January. Wax is required to produce a candle. Assume 10 ounces of wax is required for each candle. The estimated January 1 wax inventory is 16,000 pounds. The desired January 31 wax inventory is 12,500 pounds. If candle wax costs $1.24 per pound, determine the direct materials purchases budget for January. (One pound = 16 ounces.) For those boxes in which you must enter subtracted or negative numbers use a minus sign.

Pasadena Candle Inc. Direct Labor Cost Budget For the Month Ending January 31	
Pounds of wax required for production:	
Candles	$\frac{785000*10}{16} = 490625$
Estimated beginning inventory, January 31	12500
Total units available	$490625 + 12500 = 503125$
Candles	-16000
Total pounds to be purchased	$503125 - 16000 = 487125$
Unit price (per lb.)	1.24
Total direct materials to be purchased in January	$487125 * 1.24 =$ **604035**

5. Tobin's Frozen Pizza Inc. has determined from its production budget the following estimated production volumes for 12'' and 16'' frozen pizzas for November:

	12" Pizza	**16" Pizza**
Budgeted production volume	70,000	50,000

There are three direct materials used in producing the two types of pizza. The quantities of direct materials expected to be used for each pizza are as follows:

12" Pizza	**12" Pizza**	**16" Pizza**
Direct materials:		
Dough	0.55	0.80
Tomato	0.25	0.40
Cheese	0.70	1.20

In addition, Tobin's has determined the following information about each material:

	Dough	**Tomato**	**Cheese**
Estimated inventory, November 1	2,500	1,000	3,000
Desired inventory, November 30	2,000	1,200	2,800
Price per pound	$0.50	$0.60	$0.85

Prepare November's direct materials purchases budget for Tobin's Frozen Pizza Inc. For those boxes in which you must enter subtracted or negative numbers use a minus sign.

Tobin's Frozen Pizza Inc. Direct Materials Purchases Budget For the Month Ending November 30	**Dough**	**Tomato**	**Cheese**	**Total**
Units required for production:				
12" pizza	$70000 * .55 = 38500$	$70000 * .25 = 17500$	$70000 * .7 = 49000$	
16" pizza	$50000 * .8 = 40000$	$50000 * .4 = 20000$	$50000 * 1.2 = 60000$	
Desired inventory, November 30	2000	1200	2800	
Total units available	$38500 + 40000 + 2000 = 80500$	$17500 + 20000 + 1200 = 38700$	$49000 + 60000 + 2800 = 111800$	
Estimated inventory, November 1	-2500	-1000	-3000	
Total units to be purchased	$80500 - 2500 = 78000$	$38700 - 1000 = 37700$	$111800 - 3000 = 108800$	
Unit Price	x $0.50	x $0.60	x $0.85	
Total direct materials to be purchased	$78000 * .5 =$ **$39000**	$37700 * .6 =$ **$22620**	$108800 * .85 =$ **$92480**	$39000 + 22620 + 92480 =$ **$154100**

6. Coca-Cola Enterprises (CCE) is the largest bottler of Coca-Cola® in Western Europe. The company purchases Coke® and Sprite® concentrate from The Coca-Cola Company (K0), dilutes and mixes the concentrate with carbonated water, and then fills the blended beverage into cans or plastic two-liter bottles. Assume that the estimated production for Coke and Sprite two-liter bottles at the Wakefield, UK, bottling plant is as follows for the month of May:

Type	**Amount**
Coke	153,000 two-liter bottles
Sprite	86,500 two-liter bottles

In addition, assume that the concentrate costs $75 per pound for both Coke and Sprite and is used at a rate of 0.15 pound per 100 liters of carbonated water in blending Coke and 0.10 pound per 100 liters of carbonated water in blending Sprite. Assume that two liters of carbonated water are used for each two-liter bottle of finished product. Assume further that two-liter bottles cost $0.08 per bottle and carbonated water costs $0.06 per liter.

Prepare a direct materials purchases budget for May, assuming inventories are ignored, because there are no changes between beginning and ending inventories for concentrate, bottles, and carbonated water.

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Coca-Cola Enterprises-Wakefield Plant Direct Materials Purchases Budget For the Month Ending May 31 (assumed data)	**Concentrate**	**2-Liter Bottles**	**Carbonated Water**
Materials required for production:			
Coke	$0.0015 * 153000 * 2 = 459$	153000	$2 * 153000 = 306000$
Sprite	$0.0010 * 86500 * 2 = 173$	86500	$2 * 86500 = 173000$
Total Materials	632	239500	479000
Direct Materials unit price	75	0.08	0.06
Total direct materials to be purchased	$632 * 75 = 47400$	$239500 * .08 = 19160$	$479000 * .06 = 28740$

Flexible Budgeting

7. At the beginning of the period, the Fabricating Department budgeted direct labor of $72,000 and equipment depreciation of $18,500 for 2,400 hours of production. The department actually completed 2,350 hours of production.

Determine the budget for the department, assuming that it uses flexible budgeting.

- $(2350 * \frac{72000}{2400}) + 18500 = 89000$

Flexible Budget for Selling and Administrative Expenses for a Service Company

8. Digital Solutions Inc. uses flexible budgets that are based on the following data:

Item	Value
Sales commissions	8% of sales
Advertising expense	15% of sales
Miscellaneous administrative expense	$10,000 per month plus 4% of sales
Office salaries expense	$50,000 per month
Customer support expenses	$20,000 per month plus 30% of sales
Research and development expense	$75,000 per month

Prepare a flexible selling and administrative expenses budget for October for sales volumes of $500,000$,750,000, and $1,000,000. (Use Exhibit 5 as a model.)

Exhibit 5
Flexible Budget

	A	B	C	D
1	Colter Manufacturing Company			
2	Assembly Department Budget			
3	For the Year Ending July 31, 20Y8			
4		Level 1	Level 2	Level 3
5	Units of production	8,000	9,000	10,000
6	Variable cost:			
7	Direct labor ($5 per unit)	$40,000	$45,000	$50,000
8	Electric power ($0.50 per unit)	4,000	4,500	5,000
9	Total variable cost	$44,000	$49,500	$55,000
10	Fixed cost:			
11	Electric power	$ 1,000	$ 1,000	$ 1,000
12	Supervisor salaries	15,000	15,000	15,000
13	Total fixed cost	$16,000	$16,000	$16,000
14	Total department costs	$60,000	$65,500	$71,000
15				

Step 1 (row 5)
Step 2 (rows 7–9)
Step 3 (rows 11–13)

Flexible Selling and Administrative Expenses Budget For the Month Ending October 31			
Total sales	500000	750000	1000000
Variable cost:			
Sales commissions	$500000 * 8\% = 40000$	$750000 * 8\% = 60000$	$1000000 * 8\% = 80000$
Advertising expense	$500000 * 15\% = 75000$	$750000 * 15\% = 112500$	$1000000 * 15\% = 150000$
Miscellaneous administrative expense	$500000 * 4\% = 20000$	$750000 * 4\% = 30000$	$1000000 * 4\% = 40000$
Customer support expenses	$500000 * 30\% = 150000$	$750000 * 30\% = 225000$	$1000000 * 30\% = 300000$
Total variable cost	$40000 + 75000 + 20000 + 150000 = 285000$	$60000 + 112500 + 30000 + 225000 = 427500$	$80000 + 150000 + 40000 + 300000 = 570000$
Fixed cost:			
Miscellaneous administrative expense	10000	10000	10000
Office salaries expense	50000	50000	50000
Customer support expenses	20000	20000	20000
Research and development expense	75000	75000	75000
Total fixed cost	$10000 + 50000 + 20000 + 75000 = 155000$	$10000 + 50000 + 20000 + 75000 = 155000$	$10000 + 50000 + 20000 + 75000 = 155000$
Total selling and administrative expenses	$285000 + 155000 = 440000$	$427500 + 155000 = 582500$	$570000 + 155000 = 725000$

Production Budget

9. Pasadena Candle Inc. projected sales of 800,000 candles for January. The estimated January 1 inventory is 35,000 units, and the desired January 31 inventory is 20,000 units.

   Prepare a production budget report in units for Pasadena Candle Inc. For those boxes in which you must enter subtracted or negative numbers use a minus sign.

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Pasadena Candle Inc. Production Budget For the Month Ending January 31	
Expected units to be sold	800000
Desired ending inventory, Dec 31	20000
Total units available	$800000 + 20000 = 820000$
Estimated beginning inventory,Jan 1	-35000
Total units to be produced	$820000 - 35000 = \mathbf{785000}$

10. Healthy Measures Inc. produces a Bath and Gym version of its popular electronic scale. The anticipated unit sales for the scales by sales region are as follows:

	Bath Scale	Gym Scale
Northern Region unit sales	40,000	25,000
Southern Region unit sales	75,000	35,000
Total	115,000	60,000

The finished goods inventory estimated for March 1, for the Bath and Gym scale models is 11,800 and 8,100 units, respectively. The desired finished goods inventory for March 31 for the Bath and Gym scale models is 15,000 and 7,500 units, respectively.

Prepare a production budget for the Bath and Gym scales for the month ended March 31. For those boxes in which you must enter subtracted or negative numbers use a minus sign.

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Healthy Measures Inc. Production Budget For the Month Ending March 31	Units Bath Scale	Units Gym Scale
Expected units to be sold	115000	60000
Desired inventory, October 31	15000	7500
Total units available	130000	67500
Estimated inventory, October 1	-11800	-8100
Total units to be produced	**118200**	**59400**

Sales and Production Budgets

11. Sonic Inc. manufactures two models of speakers, Rumble and Thunder. Based on the following production and sales data for June, prepare (a) a sales budget and (b) a production budget:

	Rumble	Thunder
Estimated inventory (units), June 1	750	300
Desired inventory (units), June 30	500	250
Expected sales volume (units):		
Midwest Region	12,000	3,500
South Region	14,000	4,000
Unit sales price	$60	$90

1. Prepare a sales budget.
    -

Sonic Inc. Sales Budget For the Month Ending June 30			
Product and Area	**Unit Sales Volume**	**Unit Selling Price**	**Total Sales**
Model: Rumble			
Midwest Region	12000	60	$12000 * 60 = 720000$
South Region	14000	60	$14000 * 60 = 840000$
Total	$12000 + 14000 =$ **26000**		$720000 + 840000 =$ **1560000**
Model: Thunder			
Midwest Region	3500	90	$35000 * 90 = 315000$
South Region	4000	90	$4000 * 90 = 360000$
Total	$3500 + 4000 =$ **7500**		$315000 + 360000 = 675000$
Total revenue from sales			$1560000 + 675000 =$ **2235000**

2. Prepare a production budget. For those boxes in which you must enter subtracted or negative numbers use a minus sign.

Sonic Inc. Production Budget For the Month Ending June 30	Units Rumble	Units Thunder
Expected units to be sold	26000	7500
Desired inventory, June 30	500	250
Total units available	$26000 + 500 = 26500$	$7500 + 250 = 7750$
Estimated inventory, June 1	-750	-300
Total units to be produced	$26500 - 750 = 25750$	$7750 - 300 = 7450$

Schedule of Cash Collections of Accounts Receivable

12. Pet Supplies Inc., a pet wholesale supplier, was organized on January 1. Projected sales for each of the first three months of operations are as follows:

Month	Value
January	$300,000
February	500,000
March	750,000

All sales are on account. Seventy-five percent of sales are expected to be collected in the month of the sale, 20% in the month following the sale, and the remainder in the second month following the sale.

Prepare a schedule indicating cash collections from sales for January, February, and March. Enter all amounts as positive numbers.

Pet Supplies Inc. Schedule of Cash Collections from Sales For the Three Months Ending March 31	January	February	March
January Sales on Account			
Collected in January	$300000 * 75\% = 225000$		
Collected in February		$300000 * 20\% = 60000$	
Collected in March			$300000 * (100 - 75 - 20)\% = 15000$
February Sales on Account			
Collected in February		$500000 * 75\% = 375000$	
Collected in March			$500000 * 20\% = 100000$
March Sales on Account			
Collected in March			$750000 * 75\% = 562500$
Total Cash Collected	225000	$60000 + 375000 = 435000$	$15000 + 100000 + 562500 = 677500$

13. OfficeMart Inc. has "cash and carry" customers and credit customers. OfficeMart estimates that 25% of monthly sales are to cash customers, while the remaining sales are to credit customers. Of the credit customers, 30% pay their accounts in the month of sale, while the remaining 70% pay their accounts in the month following the month of sale. Projected sales for the next three months are as follows:

Month	Value
October	$58,000
November	65,000
December	72,000

The Accounts Receivable balance on September 30 was $35,000.

Prepare a schedule of cash collections from sales for October, November, and December. Enter all amounts as positive numbers.

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OfficeMart inc. Schedule of cash Collections from Sales For the Three Months Ending December 31	October	November	December
Receipts from cash sales:			
Cash sales	14500	16250	18000
September sales on account:			
Collected in October	35000		
October sales on account:			
Collected in October	$43500 * 30\% = 13050$		
Collected in November		$43500 * 70\% = 30450$	
November sales on account:			
Collected in November		$48750 * 30\% = 14625$	
Collected in December			$48750 * 70\% = 34125$
December sales on account:			
Collected in December			$54000 * 30\% = 16200$
Total cash collected	$14500 + 35000 + 13050 = 62550$	$16250 + 30450 + 14625 = 61325$	$18000 + 34125 + 16200 = 68325$

Static Budget versus Flexible Budget

14. The production supervisor of the Machining Department for Hagerstown Company agreed to the following monthly static budget for the upcoming year:

Hagerstown Company Machining Department Monthly Production Budget	
Wages	$2,250,000
Utilities	72,000
Depreciation	36,000
Total	$2,358,000

The actual amount spent and the actual units produced in the first three months in the Machining Department were as follows:

	Amount Spent	Units Produced
May	$1,600,000	40,000
June	1,950,000	48,000
July	2,200,000	52,000

The Machining Department supervisor has been very pleased with this performance because actual expenditures for May–July have been significantly less than the monthly static budget of $2,358,000. However, the plant manager believes that the budget should not remain fixed for every month but should "flex" or adjust to the volume of work that is produced in the Machining Department. Additional budget information for the Machining Department is as follows:

item	Value
Wages per hour	$25.00
Utility cost per direct labor hour	$0.80
Direct labor hours per unit	1.5
Planned monthly unit production	60,000

1. Prepare a flexible budget for the actual units produced for May, June, and July in the Machining Department. Assume depreciation is a fixed cost. If required, use per unit amounts carried out to two decimal places.
    -

Hagerstown Company Machining Department Budget For the Three Months Ending July 31	May	June	July
Units of production	40,000	48,000	52,000
Wages	$1,500,000.00	$1,800,000.00	$1,950,000.00
Utilities	$48,000.00	$57,600.00	$62,400.00
Depreciation	$36,000.00	$36,000.00	$36,000.00
Total	$1,584,000.00	$1,893,600.00	$2,048,400.00
Supporting calculations:			
Units of production	40,000	48,000	52,000
Hours per unit	1.5	1.5	1.5
Total hours of production	60000	72000	78000
Wages per hour	$25.00	$25.00	$25.00
Total wages	$1,500,000.00	$1,800,000.00	$1,950,000.00
Total hours of production	60000	72000	78000
Utility costs per hour	$0.80	$0.80	$0.80
Total utilities	$48,000.00	$57,600.00	$62,400.00

2. Compare the flexible budget with the actual expenditures for the first three months.

	May	June	July
Total flexible budget	$1,584,000.00	$1,893,600.00	$2,048,400.00
Actual cost	$1,600,000.00	$1,950,000.00	$2,200,000.00
Excess of actual cost over budget	$16,000.00	$56,400.00	$151,600.00

1. The Machining Department has performed better than originally thought.
    - **No**
2. The department is spending more than would be expected.
    - **Yes**

Homework Exercises

1. Goal conflict can be avoided if budget goals are carefully designed for consistency across all areas of the organization.
    - **True**
2. A capital expenditures budget is prepared before the operating budgets.
    - **False**
3. Budgets are prepared in the Accounting Department and monitored by various department managers.
    - **False**
4. Flexible budgeting builds the effect of changes in level of activity into the budget system.
    - **True**
5. The first budget to be prepared is usually the sales budget.
    - **True**
6. Which of the following budgets allows for adjustments in activity levels?
    - **flexible budget**
7. Miller and Sons' static budget for 10,000 units of production includes $50,000 for direct materials, $44,000 for direct labor, variable utilities of $5,000, and supervisor salaries of $24,000. A flexible budget for 12,000 units of production would show **direct materials of $60,000, direct labor of $52,800, utilities of $6,000, and supervisor salaries of $24,000**.

8. At the beginning of the period, the Assembly Department budgeted direct labor of $110,000, direct materials of $170,000, and fixed factory overhead of $28,000 for 8,000 hours of production. The department actually completed 10,000 hours of production. The appropriate total budget for the department, assuming it uses flexible budgeting, is $(10000 * \frac{110000}{8000}) + (10000 * \frac{170000}{8000}) + 28000 = 378000$
9. Below is budgeted production and sales information for Flushing Company for the month of December.

	Product XXX	**Product ZZZ**
Estimated beginning inventory	32,000 units	20,000 units
Desired ending inventory	34,000 units	17,000 units
Region I, anticipated sales	320,000 units	260,000 units
Region II, anticipated sales	180,000 units	140,000 units

   The unit selling price for product XXX is $5 and for product ZZZ is $15.

   Budgeted production for product ZZZ during the month is $260000 + 140000 + 17000 - 20000 = 397000$
10. Which of the following budgets provides the starting point for the preparation of the direct labor cost budget?
    - **production budget**

Direct Labor Cost Budget

11. Pasadena Candle Inc. budgeted production of 42,000 candles for January. Each candle requires molding. Assume that 10 minutes are required to mold each candle. If molding labor costs $14 per hour, determine the direct labor cost budget for January.
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Pasadena Candle Inc. Direct Labor Cost Budget For the Month Ending January 31		**Unit**
Hours required for assembly:		
Candles	$42000 * 10 = 420000$	min
Convert minutes to hours	60	min
Molding hours	$\frac{420000}{60} = 7000$	hours
Hourly rate	14	\
Total direct labor cost	$7000 * 14 = 98000$	$

Direct Materials Purchases Budget

12. Tobin's Frozen Pizza Inc. has determined from its production budget the following estimated production volumes for 12'' and 16'' frozen pizzas for November:

	12" Pizza	**16" Pizza**
Budgeted production volume	14,300	24,200

   There are three direct materials used in producing the two types of pizza. The quantities of direct materials expected to be used for each pizza are as follows:

	12" Pizza	**16" Pizza**
Direct materials:		
Dough	0.90	1.50
Tomato	0.60	1.00
Cheese	0.80	1.30

In addition, Tobin's has determined the following information about each material:

	Dough	Tomato	Cheese
Estimated inventory, November 1	630	200	350
Desired inventory, November 30	660	190	380
Price per pound	$1.30	$2.20	$3.00

Prepare November's direct materials purchases budget for Tobin's Frozen Pizza Inc. For those boxes in which you must enter subtracted or negative numbers use a minus sign.

Tobin's Frozen Pizza Inc. Direct Materials Purchases Budget For the Month Ending November 30	**Dough**	**Tomato**	**Cheese**	**Total**
Units required for production:				
12" pizza	$14300 * .9 = 12870$	$14300 * .6 = 8580$	$14300 * .8 = 11440$	
16" pizza	$24200 * 1.5 = 36300$	$24200 * 1 = 24200$	$24200 * 1.3 = 31460$	
Desired inventory, November 30	660	190	380	
Total units available	$12870 + 36300 + 660 = 49830$	$8580 + 24200 + 190 = 32970$	$11440 + 31460 + 380 = 43280$	
Estimated inventory, November 1	-630	-200	-350	
Total units to be purchased	$49830 - 630 = 49200$	$32970 - 200 = 32770$	$43280 - 350 = 42930$	
Unit Price	x $1.30	x $2.20	x $3.00	
Total direct materials to be purchased	$49200 * 1.30 =$ **$63960**	$32770 * 2.20 =$ **$72094**	$42930 * 3.00 =$ **$128790**	$63960 + 72094 + 128790$ **$264844**

13. Pasadena Candle Inc. budgeted production of 755,000 candles for the January. Wax is required to produce a candle. Assume 15 ounces of wax is required for each candle. The estimated January 1 wax inventory is 18,300 pounds. The desired January 31 wax inventory is 12,700 pounds. If candle wax costs $2.00 per pound, determine the direct materials purchases budget for January. (One pound = 16 ounces.) Round all computed answers to the nearest whole number. For those boxes in which you must enter subtracted or negative numbers use a minus sign.

Pasadena Candle Inc. Direct Labor Cost Budget For the Month Ending January 31	
Pounds of wax required for production:	
Candles	$\frac{755000*15}{16} = 707813$
Desired ending inventory, January 31	12700
Total units available	$707813 + 12700 = 720513$
Estimated beginning inventory, January 1	-18300
Total pounds to be purchased	$720513 - 18300 = 702213$
Unit price	2.00
Total direct materials to be purchased in January	$702213 * 2 =$ **1404426**

Flexible Budgeting

14. At the beginning of the period, the Fabricating Department budgeted direct labor of $77,000 and equipment depreciation of $36,000 for 7,000 hours of production. The department actually completed 9,400 hours of production.

    Determine the budget for the department, assuming that it uses flexible budgeting.

    - $(9400 * \frac{77000}{7000}) + 36000 = 139400$

Flexible Budget for Selling and Administrative Expenses for a Service Company

15. Digital Solutions Inc. uses flexible budgets that are based on the following data:

Item	Value
Sales commissions	14% of sales
Advertising expense	18% of sales
Miscellaneous administrative expense	$8,500 per month plus 12% of sales
Office salaries expense	$30,000 per month
Customer support expenses	$12,000 per month plus 20% of sales
Research and development expense	$32,000 per month

Prepare a flexible selling and administrative expenses budget for October for sales volumes of $400,000$,500,000, and $600,000. (Use Exhibit 5 as a model.)

Flexible Selling and Administrative Expenses Budget For the Month Ending October 31			
Total sales	400000	500000	600000
Variable cost:			
Sales commissions	$400000 * 14\% = 56000$	$500000 * 14\% = 70000$	$600000 * 14\% = 84000$
Advertising expense	$400000 * 18\% = 72000$	$500000 * 18\% = 90000$	$600000 * 18\% = 108000$
Miscellaneous administrative expense	$400000 * 12\% = 48000$	$500000 * 12\% = 60000$	$600000 * 12\% = 72000$
Customer support expenses	$400000 * 20\% = 80000$	$500000 * 20\% = 100000$	$600000 * 20\% = 120000$
Total variable cost	$56000 + 72000 + 48000 + 80000 = 256000$	$70000 + 90000 + 60000 + 100000 = 320000$	$84000 + 108000 + 72000 + 120000 = 384000$
Fixed cost:			
Miscellaneous administrative expense	8500	8500	8500
Office salaries expense	30000	30000	30000
Customer support expenses	12000	12000	12000
Research and development expense	32000	32000	32000
Total fixed cost	$8500 + 30000 + 12000 + 32000 = 82500$	$8500 + 30000 + 12000 + 32000 = 82500$	$8500 + 30000 + 12000 + 32000 = 82500$
Total selling and administrative expenses	$2560000 + 82500 = 338500$	$320000 + 82500 = 402500$	$384000 + 82500 = 466500$

Production Budget

16. Pasadena Candle Inc. projected sales of 35,000 candles for January. The estimated January 1 inventory is 1,800 units, and the desired January 31 inventory is 4,000 units.

Prepare a production budget report in units for Pasadena Candle Inc. For those boxes in which you must enter subtracted or negative numbers use a minus sign.

Pasadena Candle Inc. Production Budget For the Month Ending January 31	
Expected units to be sold	35000
Desired ending inventory, January 31	4000
Total units available	$35000 + 4000 = 39000$
Estimated beginning inventory, January 1	-1800
Total units to be produced in January	$39000 - 1800 = 37200$

17. Healthy Measures Inc. produces a Bath and Gym version of its popular electronic scale. The anticipated unit sales for the scales by sales region are as follows:

	Bath Scale	Gym Scale
Northern Region unit sales	26,400	41,200
Southern Region unit sales	28,500	29,900
Total	54,900	71,100

The finished goods inventory estimated for March 1, for the Bath and Gym scale models is 1,300 and 2,700 units, respectively. The desired finished goods inventory for March 31 for the Bath and Gym scale models is 900 and 2,900 units, respectively.

Prepare a production budget for the Bath and Gym scales for the month ended March 31. For those boxes in which you must enter subtracted or negative numbers use a minus sign.

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Healthy Measures Inc. Production Budget For the Month Ending March 31	Units Bath Scale	Units Gym Scale
Expected units to be sold	54900	71000
Desired inventory, March 31	900	2900
Total units available	$54900 + 900 = 55800$	$71100 + 2900 = 74000$
Estimated inventory, March 1	-1300	-2700
Total units to be produced	$55800 - 1300 = 54500$	$74000 - 2700 = 71300$

Schedule of Cash Collections of Accounts Receivable

18. OfficeMart Inc. has "cash and carry" customers and credit customers. OfficeMart estimates that 30% of monthly sales are to cash customers, while the remaining sales are to credit customers. Of the credit customers, 20% pay their accounts in the month of sale, while the remaining 80% pay their accounts in the month following the month of sale. Projected sales for the next three months are as follows:

Month	Value
October	$125,000
November	156,000
December	229,000

The Accounts Receivable balance on September 30 was $84,000.

Prepare a schedule of cash collections from sales for October, November, and December. Round all calculations to the nearest whole dollar.

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OfficeMart inc. Schedule of cash Collections from Sales For the Three Months Ending December 31	**October**	**November**	**December**
Receipts from cash sales:			
Cash sales	$125000 * 30\% = 37500$	$156000 * 30\% = 46800$	$229000 * 30\% = 68700$
September sales on account:			
Collected in October	84000		
October sales on account:			
Collected in October	$(125000 - 37500) * 20\% = 17500$		
Collected in November		$(125000 - 37500) * 80\% = 70000$	
November sales on account:			
Collected in November		$(156000 - 46800) * 20\% = 21840$	
Collected in December			$(156000 - 46800) * 80\% = 87360$
December sales on account:			
Collected in December			$(229000 - 68700) * 20\% = 32060$
Total cash collected	$37500 + 84000 + 17500 = 139000$	$46800 + 70000 + 21840 = 138640$	$68700 + 87360 + 32060 = 188120$

Quiz