Student name:\_\_\_\_\_\_\_\_\_\_

**ESSAY. Write your answer in the space provided or on a separate sheet of paper.  
1)** Dobosh Corporation has provided the following information:

|  |  |  |
| --- | --- | --- |
|  | **Cost per Unit** | **Cost per Period** |
| **Direct materials** | $ 7.05 |  |
| **Direct labor** | $ 3.65 |  |
| **Variable manufacturing overhead** | $ 1.60 |  |
| **Fixed manufacturing overhead** |  | $ 113,400 |
| **Sales commissions** | $ 1.50 |  |
| **Variable administrative expense** | $ 0.55 |  |
| **Fixed selling and administrative expense** |  | $ 36,450 |

**Required:**  
 a. For financial reporting purposes, what is the total amount of product costs incurred to make 9,000 units?  
 b. For financial reporting purposes, what is the total amount of period costs incurred to sell 9,000 units?  
 c. If 10,000 units are sold, what is the variable cost per unit sold?  
 d. If 10,000 units are sold, what is the total amount of variable costs related to the units sold?  
 e. If 10,000 units are produced, what is the total amount of manufacturing overhead cost incurred?  
 f. If the selling price is $21.60 per unit, what is the contribution margin per unit sold?  
 g. If 8,000 units are produced, what is the total amount of direct manufacturing cost incurred?  
 h. If 8,000 units are produced, what is the total amount of indirect manufacturing costs incurred?  
 i. What incremental manufacturing cost will the company incur if it increases production from 9,000 to 9,001 units?

**2)** Saxbury Corporation's relevant range of activity is 3,000 units to 7,000 units. When it produces and sells 4,300 units, its average costs per unit are as follows:

|  |  |
| --- | --- |
|  | **Average Cost per Unit** |
| **Direct materials** | $6.50 |
| **Direct labor** | $3.20 |
| **Variable manufacturing overhead** | $1.30 |
| **Fixed manufacturing overhead** | $3.40 |
| **Fixed selling expense** | $0.60 |
| **Fixed administrative expense** | $0.45 |
| **Sales commissions** | $0.35 |
| **Variable administrative expense** | $0.35 |

**Required:**  
 a. For financial reporting purposes, what is the total amount of product costs incurred to make 4,300 units?  
 b. For financial reporting purposes, what is the total amount of period costs incurred to sell 4,300 units?  
 c. If 5,300 units are sold, what is the variable cost per unit sold? **(Round "Per unit" answer to 2 decimal places.)**  
 d. If 5,300 units are sold, what is the total amount of variable costs related to the units sold?  
 e. If 5,300 units are produced, what is the average fixed manufacturing cost per unit produced? **(Round "Per unit" answer to 2 decimal places.)**  
 f. If 5,300 units are produced, what is the total amount of fixed manufacturing cost incurred?  
 g. If 5,300 units are produced, what is the total amount of manufacturing overhead cost incurred? What is this total amount expressed on a per unit basis? **(Round "Per unit" answer to 2 decimal places.)**  
 h. If the selling price is $24.00 per unit, what is the contribution margin per unit sold? **(Round "Per unit" answer to 2 decimal places.)**  
 i. If 3,300 units are produced, what is the total amount of direct manufacturing cost incurred?  
 j. If 3,300 units are produced, what is the total amount of indirect manufacturing cost incurred?  
 k. What incremental manufacturing cost will the company incur if it increases production from 4,300 to 4,301 units? **(Round "Per unit" answer to 2 decimal places.)**

**3)** Saxbury Corporation's relevant range of activity is 3,000 units to 7,000 units. When it produces and sells 5,000 units, its average costs per unit are as follows:

|  |  |
| --- | --- |
|  | **Average Cost per Unit** |
| **Direct materials** | $5.30 |
| **Direct labor** | $3.65 |
| **Variable manufacturing overhead** | $1.50 |
| **Fixed manufacturing overhead** | $3.90 |
| **Fixed selling expense** | $0.75 |
| **Fixed administrative expense** | $0.60 |
| **Sales commissions** | $0.50 |
| **Variable administrative expense** | $0.50 |

**Required:**  
 a.For financial reporting purposes, what is the total amount of product costs incurred to make 5,000 units?  
 b. For financial reporting purposes, what is the total amount of period costs incurred to sell 5,000 units?  
 c. If 6,000 units are sold, what is the variable cost per unit sold? **(Round "Per unit" answer to 2 decimal places.)**  
 d. If 6,000 units are sold, what is the total amount of variable costs related to the units sold?  
 e. If 6,000 units are produced, what is the average fixed manufacturing cost per unit produced? **(Round "Per unit" answer to 2 decimal places.)**  
 f. If 6,000 units are produced, what is the total amount of fixed manufacturing cost incurred?  
 g. If 6,000 units are produced, what is the total amount of manufacturing overhead cost incurred? What is this total amount expressed on a per unit basis? **(Round "Per unit" answer to 2 decimal places.)**  
 h. If the selling price is $22.90 per unit, what is the contribution margin per unit sold? **(Round "Per unit" answer to 2 decimal places.)**  
 i. If 4,000 units are produced, what is the total amount of direct manufacturing cost incurred?  
 j. If 4,000 units are produced, what is the total amount of indirect manufacturing cost incurred?  
 k. What incremental manufacturing cost will the company incur if it increases production from 5,000 to 5,001 units? **(Round "Per unit" answer to 2 decimal places.)**

**4)** Myklebust Corporation's relevant range of activity is 4,000 units to 8,000 units. When it produces and sells 6,000 units, its average costs per unit are as follows:

|  |  |
| --- | --- |
|  | **Average Cost per Unit** |
| **Direct materials** | $6.40 |
| **Direct labor** | $3.80 |
| **Variable manufacturing overhead** | $1.60 |
| **Fixed manufacturing overhead** | $3.00 |
| **Fixed selling expense** | $0.75 |
| **Fixed administrative expense** | $0.60 |
| **Sales commissions** | $1.50 |
| **Variable administrative expense** | $0.45 |

**Required:**  
 a.For financial reporting purposes, what is the total amount of product costs incurred to make 6,000 units?  
 b. For financial reporting purposes, what is the total amount of period costs incurred to sell 6,000 units?  
 c. If the selling price is $20.20 per unit, what is the contribution margin per unit sold?  
 d. If 7,000 units are produced, what is the total amount of direct manufacturing cost incurred?  
 e. If 7,000 units are produced, what is the total amount of indirect manufacturing cost incurred?  
 f. What incremental manufacturing cost will the company incur if it increases production from 6,000 to 6,001 units?

**5)** Learned Corporation has provided the following information:

|  |  |  |
| --- | --- | --- |
|  | **Cost per Unit** | **Cost per Period** |
| **Direct materials** | $ 5.20 |  |
| **Direct labor** | $ 3.85 |  |
| **Variable manufacturing overhead** | $ 1.35 |  |
| **Fixed manufacturing overhead** |  | $ 27,000 |
| **Sales commissions** | $ 0.50 |  |
| **Variable administrative expense** | $ 0.40 |  |
| **Fixed selling and administrative expense** |  | $ 9,000 |

**Required:**  
 a. For financial reporting purposes, what is the total amount of product costs incurred to make 6,000 units?  
 b. For financial reporting purposes, what is the total amount of period costs incurred to sell 6,000 units?  
 c. If the selling price is $22.40 per unit, what is the contribution margin per unit sold? **(Round your answer to 2 decimal places.)**  
 d. If 7,000 units are produced, what is the total amount of direct manufacturing cost incurred?  
 e. If 7,000 units are produced, what is the total amount of indirect manufacturing costs incurred?

**6)** Learned Corporation has provided the following information:

|  |  |  |
| --- | --- | --- |
|  | **Cost per Unit** | **Cost per Period** |
| **Direct materials** | $ 5.90 |  |
| **Direct labor** | $ 4.05 |  |
| **Variable manufacturing overhead** | $ 1.65 |  |
| **Fixed manufacturing overhead** |  | $ 30,000 |
| **Sales commissions** | $ 0.80 |  |
| **Variable administrative expense** | $ 0.70 |  |
| **Fixed selling and administrative expense** |  | $ 9,600 |

**Required:**  
 a. For financial reporting purposes, what is the total amount of product costs incurred to make 6,000 units?  
 b. For financial reporting purposes, what is the total amount of period costs incurred to sell 6,000 units?  
 c. If the selling price is $23.40 per unit, what is the contribution margin per unit sold? **(Round your answer to 2 decimal places.)**  
 d. If 7,000 units are produced, what is the total amount of direct manufacturing cost incurred?  
 e. If 7,000 units are produced, what is the total amount of indirect manufacturing costs incurred?

**7)** Arman Corporation's relevant range of activity is 3,000 units to 7,000 units. When it produces and sells 5,000 units, its average costs per unit are as follows:

|  |  |
| --- | --- |
|  | **Average Cost per Unit** |
| **Direct materials** | $6.10 |
| **Direct labor** | $2.90 |
| **Variable manufacturing overhead** | $1.25 |
| **Fixed manufacturing overhead** | $3.00 |
| **Fixed selling expense** | $1.05 |
| **Fixed administrative expense** | $0.60 |
| **Sales commissions** | $1.50 |
| **Variable administrative expense** | $0.55 |

**Required:**  
 a. If 6,000 units are produced, what is the total amount of fixed manufacturing cost incurred?  
 b. If 6,000 units are produced, what is the total amount of manufacturing overhead cost incurred? What is this total amount expressed on a per unit basis?  
 c. If 4,000 units are produced, what is the total amount of direct manufacturing cost incurred?  
 d. If 4,000 units are produced, what is the total amount of indirect manufacturing cost incurred?

**8)** Skolnick Corporation has provided the following information:

|  |  |  |
| --- | --- | --- |
|  | **Cost per Unit** | **Cost per Period** |
| **Direct materials** | $ 5.80 |  |
| **Direct labor** | $ 4.00 |  |
| **Variable manufacturing overhead** | $ 2.10 |  |
| **Fixed manufacturing overhead** |  | $ 144,000 |
| **Sales commissions** | $ 1.30 |  |
| **Variable administrative expense** | $ 0.70 |  |
| **Fixed selling and administrative expense** |  | $ 41,400 |

**Required:**  
 a. If 9,000 units are produced, what is the total amount of direct manufacturing cost incurred? **(Do not round intermediate calculations.)**  
 b. If 9,000 units are produced, what is the total amount of indirect manufacturing costs incurred?

**9)** Skolnick Corporation has provided the following information:

|  |  |  |
| --- | --- | --- |
|  | **Cost per Unit** | **Cost per Period** |
| **Direct materials** | $ 5.70 |  |
| **Direct labor** | $ 3.60 |  |
| **Variable manufacturing overhead** | $ 1.50 |  |
| **Fixed manufacturing overhead** |  | $ 121,500 |
| **Sales commissions** | $ 1.00 |  |
| **Variable administrative expense** | $ 0.45 |  |
| **Fixed selling and administrative expense** |  | $ 36,450 |

**Required:**  
 a. If 8,000 units are produced, what is the total amount of direct manufacturing cost incurred? **(Do not round intermediate calculations.)**  
 b. If 8,000 units are produced, what is the total amount of indirect manufacturing costs incurred?

**10)** Karpowicz Corporation's relevant range of activity is 7,000 units to 11,000 units. When it produces and sells 9,000 units, its average costs per unit are as follows:

|  |  |
| --- | --- |
|  | **Average Cost per Unit** |
| **Direct materials** | $ 6.25 |
| **Direct labor** | $ 4.15 |
| **Variable manufacturing overhead** | $ 1.60 |
| **Fixed manufacturing overhead** | $ 12.60 |
| **Fixed selling expense** | $ 3.15 |
| **Fixed administrative expense** | $ 1.80 |
| **Sales commissions** | $ 1.50 |
| **Variable administrative expense** | $ 0.45 |

**Required:**  
 a.If the selling price is $21.40 per unit, what is the contribution margin per unit sold?  
 b. If 8,000 units are produced, what is the total amount of direct manufacturing cost incurred?  
 c. If 8,000 units are produced, what is the total amount of indirect manufacturing cost incurred?  
 d. What incremental manufacturing cost will the company incur if it increases production from 9,000 to 9,001 units?

**11)** Parlavecchio Corporation's relevant range of activity is 2,000 units to 6,000 units. When it produces and sells 4,000 units, its average costs per unit are as follows:

|  |  |
| --- | --- |
|  | **Average Cost per Unit** |
| **Direct materials** | $5.20 |
| **Direct labor** | $3.40 |
| **Variable manufacturing overhead** | $1.35 |
| **Fixed manufacturing overhead** | $3.00 |
| **Fixed selling expense** | $0.70 |
| **Fixed administrative expense** | $0.40 |
| **Sales commissions** | $1.50 |
| **Variable administrative expense** | $0.45 |

**Required:**  
 a. For financial reporting purposes, what is the total amount of product costs incurred to make 4,000 units?  
 b. For financial reporting purposes, what is the total amount of period costs incurred to sell 4,000 units?  
 c. If 5,000 units are sold, what is the variable cost per unit sold?  
 d. If 5,000 units are sold, what is the total amount of variable costs related to the units sold?  
 e. If 5,000 units are produced, what is the average fixed manufacturing cost per unit produced?  
 f. If 5,000 units are produced, what is the total amount of fixed manufacturing cost incurred?  
 g. If 5,000 units are produced, what is the total amount of manufacturing overhead cost incurred? What is this total amount expressed on a per unit basis?

**12)** Menk Corporation has provided the following information:

|  |  |  |
| --- | --- | --- |
|  | **Cost per Unit** | **Cost per Period** |
| **Direct materials** | $ 6.25 |  |
| **Direct labor** | $ 3.25 |  |
| **Variable manufacturing overhead** | $ 1.45 |  |
| **Fixed manufacturing overhead** |  | $ 18,000 |
| **Sales commissions** | $ 0.50 |  |
| **Variable administrative expense** | $ 0.40 |  |
| **Fixed selling and administrative expense** |  | $ 9,000 |

**Required:** a. If 5,000 units are sold, what is the variable cost per unit sold?  
 b. If 5,000 units are sold, what is the total amount of variable costs related to the units sold?  
 c. If 5,000 units are produced, what is the total amount of manufacturing overhead cost incurred?

**13)** Mary Tappin, an assistant Vice President at Galaxy Toys, was disturbed to find on her desk a memo from her boss, Gary Resnick, to the controller of the company. The memo appears below:  
   
 GALAXY TOYS INTERNAL MEMO  
   
 Sept 15  
   
 To: Harry Wilson, Controller  
 Fm: Gary Resnick, Executive Vice President  
   
 As you know, we won't start recording many sales until October when stores start accepting shipments from us for the Christmas season. Meanwhile, we are producing flat-out and are building up our finished goods inventories so that we will be ready to ship next month.  
   
 Unfortunately, we are in a bind right now since it looks like the net income for the quarter ending on Sept 30 is going to be pretty awful. This may get us in trouble with the bank since they always review the quarterly financial reports and may call in our loan if they don't like what they see. Is there any possibility that we could change the classification of some of our period costs to product costs-such as the rent on the finished goods warehouse?  
 Please let me know as soon as possible. The President is pushing for results.  
   
 Mary didn't know what to do about the memo. It wasn't intended for her, but its contents were alarming.  
   
   
 **Required:**  
 a. Why has Gary Resnick suggested reclassifying some period costs as product costs?  
 b. Why do you think Mary was alarmed about the memo?

**14)** Classify the following costs for an auto manufacturer as either direct materials, direct labor, manufacturing overhead, or period costs.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Direct Materials** | **Direct Labor** | **Manufacturing Overhead** | **Period Cost** |
| **a. Steel used in automobiles** |  |  |  |  |
| **b. Assembly department employee wages** |  |  |  |  |
| **c. Utility costs used in executive building** |  |  |  |  |
| **d. Travel costs of sales personnel** |  |  |  |  |
| **e. Cost of shipping goods to customers** |  |  |  |  |
| **f. Property taxes on assembly plant** |  |  |  |  |
| **g. Glass used in automobiles** |  |  |  |  |
| **h. Factory maintenance supplies** |  |  |  |  |
| **i. Depreciation on assembly plant** |  |  |  |  |
| **j. Plant manager's salary** |  |  |  |  |
| **k. CEO's salary** |  |  |  |  |
| **l. Depreciation on executive building** |  |  |  |  |
| **m. Salary of marketing executive** |  |  |  |  |
| **n. Tires installed on automobiles** |  |  |  |  |
| **o. Advertising** |  |  |  |  |

**Required:**  
 Complete the answer sheet above by placing an "X" under each heading that identifies the cost involved.

**15)** Asplund Corporation has provided the following information:

|  |  |  |
| --- | --- | --- |
|  | **Cost per Unit** | **Cost per Period** |
| **Direct materials** | $ 6.25 |  |
| **Direct labor** | $ 2.90 |  |
| **Variable manufacturing overhead** | $ 1.30 |  |
| **Fixed manufacturing overhead** |  | $ 18,000 |
| **Sales commissions** | $ 1.50 |  |
| **Variable administrative expense** | $ 0.45 |  |
| **Fixed selling and administrative expense** |  | $ 7,500 |

**Required:**  
 a. For financial reporting purposes, what is the total amount of product costs incurred to make 5,000 units?  
 b. For financial reporting purposes, what is the total amount of period costs incurred to sell 5,000 units?

**16)** Balerio Corporation's relevant range of activity is 8,000 units to 12,000 units. When it produces and sells 10,000 units, its average costs per unit are as follows:

|  |  |
| --- | --- |
|  | **Average Cost per Unit** |
| **Direct materials** | $ 6.90 |
| **Direct labor** | $ 3.70 |
| **Variable manufacturing overhead** | $ 2.00 |
| **Fixed manufacturing overhead** | $ 13.90 |
| **Fixed selling expense** | $ 3.05 |
| **Fixed administrative expense** | $ 1.80 |
| **Sales commissions** | $ 0.50 |
| **Variable administrative expense** | $ 0.40 |

**Required:**  
 a. For financial reporting purposes, what is the total amount of product costs incurred to make 10,000 units? **(Do not round intermediate calculations.)**  
 b. If 9,000 units are sold, what is the variable cost per unit sold? **(Round "Per unit" answer to 2 decimal places.)**  
 c. If 9,000 units are sold, what is the total amount of variable costs related to the units sold? **(Do not round intermediate calculations. Round "Per unit" answer to 2 decimal places.)**  
 d. If the selling price is $19.70 per unit, what is the contribution margin per unit sold? **(Round "Per unit" answer to 2 decimal places.)**  
 e. What incremental manufacturing cost will the company incur if it increases production from 10,000 to 10,001 units? **(Round "Per unit" answer to 2 decimal places.)**

**17)** Balerio Corporation's relevant range of activity is 7,000 units to 11,000 units. When it produces and sells 9,000 units, its average costs per unit are as follows:

|  |  |
| --- | --- |
|  | **Average Cost per Unit** |
| **Direct materials** | $ 6.80 |
| **Direct labor** | $ 3.20 |
| **Variable manufacturing overhead** | $ 1.60 |
| **Fixed manufacturing overhead** | $ 13.50 |
| **Fixed selling expense** | $ 2.25 |
| **Fixed administrative expense** | $ 1.80 |
| **Sales commissions** | $ 0.50 |
| **Variable administrative expense** | $ 0.40 |

**Required:**  
 a. For financial reporting purposes, what is the total amount of product costs incurred to make 9,000 units? **(Do not round intermediate calculations.)**  
 b. If 10,000 units are sold, what is the variable cost per unit sold? **(Round "Per unit" answer to 2 decimal places.)**  
 c. If 10,000 units are sold, what is the total amount of variable costs related to the units sold? **(Do not round intermediate calculations. Round "Per unit" answer to 2 decimal places.)**  
 d. If the selling price is $18.20 per unit, what is the contribution margin per unit sold? **(Round "Per unit" answer to 2 decimal places.)**  
 e. What incremental manufacturing cost will the company incur if it increases production from 9,000 to 9,001 units? **(Round "Per unit" answer to 2 decimal places.)**

**18)** Glisan Corporation's relevant range of activity is 4,000 units to 8,000 units. When it produces and sells 6,000 units, its average costs per unit are as follows:

|  |  |
| --- | --- |
|  | **Average Cost per Unit** |
| **Direct materials** | $ 5.75 |
| **Direct labor** | $ 3.00 |
| **Variable manufacturing overhead** | $ 1.60 |
| **Fixed manufacturing overhead** | $ 4.50 |
| **Fixed selling expense** | $ 0.75 |
| **Fixed administrative expense** | $ 0.60 |
| **Sales commissions** | $ 1.50 |
| **Variable administrative expense** | $ 0.55 |

**Required:**  
 a. For financial reporting purposes, what is the total amount of product costs incurred to make 6,000 units?  
 b. For financial reporting purposes, what is the total amount of period costs incurred to sell 6,000 units?  
 c. If 5,000 units are sold, what is the total amount of variable costs related to the units sold?  
 d. If the selling price is $19.10 per unit, what is the contribution margin per unit sold?  
 e. What incremental manufacturing cost will the company incur if it increases production from 6,000 to 6,001 units?

**19)** Morrisroe Corporation has provided the following information:

|  |  |  |
| --- | --- | --- |
|  | **Cost per Unit** | **Cost per Period** |
| **Direct materials** | $ 6.65 |  |
| **Direct labor** | $ 3.30 |  |
| **Variable manufacturing overhead** | $ 1.70 |  |
| **Fixed manufacturing overhead** |  | $ 10,000 |
| **Sales commissions** | $ 1.00 |  |
| **Variable administrative expense** | $ 0.50 |  |
| **Fixed selling and administrative expense** |  | $ 5,000 |

**Required:**  
 a. If the selling price is $25.90 per unit, what is the contribution margin per unit sold?  
 b. What incremental manufacturing cost will the company incur if it increases production from 5,000 to 5,001 units?

**20)** In April, Holderness Incorporated, a merchandising company, had sales of $276,000, selling expenses of $19,500, and administrative expenses of $30,500. The cost of merchandise purchased during the month was $166,000. The beginning balance in the merchandise inventory account was $39,500 and the ending balance was $53,500.  
 **Required:**  
 Prepare a traditional format income statement for April.

**21)** In April, Holderness Incorporated, a merchandising company, had sales of $221,000, selling expenses of $14,000, and administrative expenses of $25,000. The cost of merchandise purchased during the month was $155,000. The beginning balance in the merchandise inventory account was $34,000 and the ending balance was $48,000.  
 **Required:**  
 Prepare a traditional format income statement for April.

**22)** Fanelli Corporation, a merchandising company, reported the following results for July:

|  |  |
| --- | --- |
| **Number of units sold** | 5,900 |
| **Selling price per unit** | $ 600 |
| **Unit cost of goods sold** | $ 411 |
| **Variable selling expense per unit** | $ 68 |
| **Total fixed selling expense** | $ 125,400 |
| **Variable administrative expense per unit** | $ 24 |
| **Total fixed administrative expense** | $ 207,300 |

Cost of goods sold is a variable cost in this company.  
   
 **Required:**  
 a. Prepare a traditional format income statement for July.  
 b. Prepare a contribution format income statement for July.

**23)** Fanelli Corporation, a merchandising company, reported the following results for July:

|  |  |
| --- | --- |
| **Number of units sold** | 5,300 |
| **Selling price per unit** | $ 590 |
| **Unit cost of goods sold** | $ 403 |
| **Variable selling expense per unit** | $ 58 |
| **Total fixed selling expense** | $ 124,400 |
| **Variable administrative expense per unit** | $ 22 |
| **Total fixed administrative expense** | $ 206,300 |

Cost of goods sold is a variable cost in this company.  
   
 **Required:**  
 a. Prepare a traditional format income statement for July.  
 b. Prepare a contribution format income statement for July.

**24)** Weingartner Corporation, a merchandising company, reported sales of 4,800 units for July at a selling price of $269 per unit. The cost of goods sold (all variable) was $114 per unit and the variable selling expense was $6 per unit. The total fixed selling expense was $38,100. The variable administrative expense was $14 per unit and the total fixed administrative expense was $59,900.  
   
 **Required:**  
 a. Prepare a contribution format income statement for July.  
 b. Prepare a traditional format income statement for July.

**25)** Wippert Corporation, a merchandising company, reported the following results for December:

|  |  |
| --- | --- |
| **Sales** | $ 2,296,200 |
| **Cost of goods sold (all variable)** | $ 997,600 |
| **Total variable selling expense** | $ 86,000 |
| **Total fixed selling expense** | $ 57,100 |
| **Total variable administrative expense** | $ 43,000 |
| **Total fixed administrative expense** | $ 148,100 |

**Required:**  
 a. Prepare a traditional format income statement for December.  
 b. Prepare a contribution format income statement for December.

**26)** Bauman Sales Corporation, a merchandising company, reported total sales of $4,069,800 for November. The cost of goods sold (all variable) was $2,351,100, the total variable selling expense was $204,000, the total fixed selling expense was $117,700, the total variable administrative expense was $102,000, and the total fixed administrative expense was $267,000.  
   
 **Required:**  
 a. Prepare a contribution format income statement for November.  
 b. Prepare a traditional format income statement for November.

**Answer Key**Test name: ch 1i

1) a.

|  |  |
| --- | --- |
| **Direct materials** | $ 7.05 |
| **Direct labor** | 3.65 |
| **Variable manufacturing overhead** | 1.60 |
| **Variable manufacturing cost per unit** | $ 12.30 |
| **Total variable manufacturing cost**  **($12.30 per unit × 9,000 units produced)** | $ 110,700 |
| **Total fixed manufacturing overhead cost** | 113,400 |
| **Total product (manufacturing) cost** | $ 224,100 |

b.

|  |  |
| --- | --- |
| **Sales commissions** | $ 1.50 |
| **Variable administrative expense** | 0.55 |
| **Variable selling and administrative expense per unit** | $ 2.05 |
| **Total variable selling and administrative expense**  **($2.05 per unit × 9,000 units sold)** | $ 18,450 |
| **Total fixed selling and administrative expense** | 36,450 |
| **Total period (nonmanufacturing) cost** | $ 54,900 |

c.

|  |  |
| --- | --- |
| **Direct materials** | $ 7.05 |
| **Direct labor** | 3.65 |
| **Variable manufacturing overhead** | 1.60 |
| **Sales commissions** | 1.50 |
| **Variable administrative expense** | 0.55 |
| **Variable cost per unit sold** | $ 14.35 |

d.

|  |  |
| --- | --- |
| **Variable cost per unit sold (a)** | $ 14.35 |
| **Number of units sold (b)** | 10,000 |
| **Total variable costs (a) × (b)** | $ 143,500 |

e.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.60 per unit × 10,000 units)** | $ 16,000 |
| **Total fixed manufacturing overhead cost** | 113,400 |
| **Total manufacturing overhead cost (a)** | $ 129,400 |

f.

|  |  |  |
| --- | --- | --- |
| **Selling price per unit** |  | $ 21.60 |
| **Direct materials** | $ 7.05 |  |
| **Direct labor** | 3.65 |  |
| **Variable manufacturing overhead** | 1.60 |  |
| **Sales commissions** | 1.50 |  |
| **Variable administrative expense** | 0.55 |  |
| **Variable cost per unit sold** |  | 14.35 |
| **Contribution margin per unit** |  | $ 7.25 |

g.

|  |  |
| --- | --- |
| **Direct materials** | $ 7.05 |
| **Direct labor** | 3.65 |
| **Direct manufacturing cost per unit (a)** | $ 10.70 |
| **Number of units produced (b)** | 8,000 |
| **Total direct manufacturing cost (a) × (b)** | $ 85,600 |

h.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.60 per unit × 8,000 units)** | $ 12,800 |
| **Total fixed manufacturing overhead cost** | 113,400 |
| **Total indirect manufacturing cost** | $ 126,200 |

i.

|  |  |
| --- | --- |
| **Direct materials** | $ 7.05 |
| **Direct labor** | 3.65 |
| **Variable manufacturing overhead** | 1.60 |
| **Incremental manufacturing cost** | $ 12.30 |

2) a.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.50 |
| **Direct labor** | 3.20 |
| **Variable manufacturing overhead** | 1.30 |
| **Variable manufacturing cost per unit** | $ 11.00 |
| **Total variable manufacturing cost**  **($11.00 per unit × 4,300 units produced)** | $ 47,300 |
| **Total fixed manufacturing overhead cost**  **($3.40 per unit × 4,300 units produced)** | 14,620 |
| **Total product (manufacturing) cost** | $ 61,920 |

b.

|  |  |
| --- | --- |
| **Sales commissions** | $ 0.35 |
| **Variable administrative expense** | 0.35 |
| **Variable selling and administrative expense per unit** | $ 0.70 |
| **Total variable selling and administrative expense**  **($0.70 per unit × 4,300 units sold)** | $ 3,010 |
| **Total fixed selling and administrative expense**  **($0.60 per unit × 4,300 units + $0.45 per unit × 4,300 units)** | 4,515 |
| **Total period (nonmanufacturing) cost** | $ 7,525 |

c.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.50 |
| **Direct labor** | 3.20 |
| **Variable manufacturing overhead** | 1.30 |
| **Sales commissions** | 0.35 |
| **Variable administrative expense** | 0.35 |
| **Variable cost per unit sold** | $ 11.70 |

d.

|  |  |
| --- | --- |
| **Variable cost per unit sold (a)** | $ 11.70 |
| **Number of units sold (b)** | 5,300 |
| **Total variable costs (a) × (b)** | $ 62,010 |

e.

|  |  |
| --- | --- |
| **Total fixed manufacturing overhead cost**  **($3.40 per unit × 4,300 units\*) (a)** | $ 14,620 |
| **Number of units produced (b)** | 5,300 |
| **Average fixed manufacturing cost per unit produced (a) ÷ (b)** | $ 2.76 |

\*The average fixed manufacturing overhead cost per unit was determined by dividing the total fixed manufacturing overhead cost by 4,300 units.  
 f.

|  |  |
| --- | --- |
| **Fixed manufacturing overhead per unit** | $ 3.40 |
| **Number of units produced** | 4,300 |
| **Total fixed manufacturing overhead cost** | $ 14,620 |

g.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.30 per unit × 5,300 units)** | $ 6,890 |
| **Total fixed manufacturing overhead cost**  **($3.40 per unit × 4,300 units\*)** | 14,620 |
| **Total manufacturing overhead cost (a)** | $ 21,510 |
| **Number of units produced (b)** | 5,300 |
| **Manufacturing overhead per unit (a) ÷ (b)** | $ 4.06 |

\*The average fixed manufacturing overhead cost per unit was determined by dividing the total fixed manufacturing overhead cost by 4,300 units.  
 h.

|  |  |  |
| --- | --- | --- |
| **Selling price per unit** |  | $ 24.00 |
| **Direct materials** | $ 6.50 |  |
| **Direct labor** | 3.20 |  |
| **Variable manufacturing overhead** | 1.30 |  |
| **Sales commissions** | 0.35 |  |
| **Variable administrative expense** | 0.35 |  |
| **Variable cost per unit sold** |  | 11.70 |
| **Contribution margin per unit** |  | $ 12.30 |

i.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.50 |
| **Direct labor** | 3.20 |
| **Direct manufacturing cost per unit (a)** | $ 9.70 |
| **Number of units produced (b)** | 3,300 |
| **Total direct manufacturing cost (a) × (b)** | $ 32,010 |

j.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.30 per unit × 3,300 units)** | $ 4,290 |
| **Total fixed manufacturing overhead cost**  **($3.40 per unit × 4,300 units\*)** | 14,620 |
| **Total indirect manufacturing cost** | $ 18,910 |

\*The average fixed manufacturing overhead cost per unit was determined by dividing the total fixed manufacturing overhead cost by 4,300 units.  
 k.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.50 |
| **Direct labor** | 3.20 |
| **Variable manufacturing overhead** | 1.30 |
| **Incremental manufacturing cost** | $ 11.00 |

3) a.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.30 |
| **Direct labor** | 3.65 |
| **Variable manufacturing overhead** | 1.50 |
| **Variable manufacturing cost per unit** | $ 10.45 |
| **Total variable manufacturing cost**  **($10.45 per unit × 5,000 units produced)** | $ 52,250 |
| **Total fixed manufacturing overhead cost**  **($3.90 per unit × 5,000 units produced)** | 19,500 |
| **Total product (manufacturing) cost** | $ 71,750 |

b.

|  |  |
| --- | --- |
| **Sales commissions** | $ 0.50 |
| **Variable administrative expense** | 0.50 |
| **Variable selling and administrative expense per unit** | $ 1.00 |
| **Total variable selling and administrative expense**  **($1.00 per unit × 5,000 units sold)** | $ 5,000 |
| **Total fixed selling and administrative expense**  **($0.75 per unit × 5,000 units + $0.60 per unit × 5,000 units)** | 6,750 |
| **Total period (nonmanufacturing) cost** | $ 11,750 |

c.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.30 |
| **Direct labor** | 3.65 |
| **Variable manufacturing overhead** | 1.50 |
| **Sales commissions** | 0.50 |
| **Variable administrative expense** | 0.50 |
| **Variable cost per unit sold** | $ 11.45 |

d.

|  |  |
| --- | --- |
| **Variable cost per unit sold (a)** | $ 11.45 |
| **Number of units sold (b)** | 6,000 |
| **Total variable costs (a) × (b)** | $ 68,700 |

e.

|  |  |
| --- | --- |
| **Total fixed manufacturing overhead cost**  **($3.90 per unit × 5,000 units\*) (a)** | $ 19,500 |
| **Number of units produced (b)** | 6,000 |
| **Average fixed manufacturing cost per unit produced (a) ÷ (b)** | $ 3.25 |

\*The average fixed manufacturing overhead cost per unit was determined by dividing the total fixed manufacturing overhead cost by 5,000 units.  
   
 f.

|  |  |
| --- | --- |
| **Fixed manufacturing overhead per unit** | $ 3.90 |
| **Number of units produced** | 5,000 |
| **Total fixed manufacturing overhead cost** | $ 19,500 |

g.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.50 per unit × 6,000 units)** | $ 9,000 |
| **Total fixed manufacturing overhead cost**  **($3.90 per unit × 5,000 units\*)** | 19,500 |
| **Total manufacturing overhead cost (a)** | $ 28,500 |
| **Number of units produced (b)** | 6,000 |
| **Manufacturing overhead per unit (a) ÷ (b)** | $ 4.75 |

\*The average fixed manufacturing overhead cost per unit was determined by dividing the total fixed manufacturing overhead cost by 5,000 units.  
   
 h.

|  |  |  |
| --- | --- | --- |
| **Selling price per unit** |  | $ 22.90 |
| **Direct materials** | $5.30 |  |
| **Direct labor** | 3.65 |  |
| **Variable manufacturing overhead** | 1.50 |  |
| **Sales commissions** | 0.50 |  |
| **Variable administrative expense** | 0.50 |  |
| **Variable cost per unit sold** |  | 11.45 |
| **Contribution margin per unit** |  | $ 11.45 |

i.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.30 |
| **Direct labor** | 3.65 |
| **Direct manufacturing cost per unit (a)** | $ 8.95 |
| **Number of units produced (b)** | 4,000 |
| **Total direct manufacturing cost (a) × (b)** | $ 35,800 |

j.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.50 per unit × 4,000 units)** | $ 6,000 |
| **Total fixed manufacturing overhead cost**  **($3.90 per unit × 5,000 units\*)** | 19,500 |
| **Total indirect manufacturing cost** | $ 25,500 |

\*The average fixed manufacturing overhead cost per unit was determined by dividing the total fixed manufacturing overhead cost by 5,000 units.  
   
 k.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.30 |
| **Direct labor** | 3.65 |
| **Variable manufacturing overhead** | 1.50 |
| **Incremental manufacturing cost** | $ 10.45 |

4) a.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.40 |
| **Direct labor** | 3.80 |
| **Variable manufacturing overhead** | 1.60 |
| **Variable manufacturing cost per unit** | $ 11.80 |
| **Total variable manufacturing cost**  **($11.80 per unit × 6,000 units produced)** | $ 70,800 |
| **Total fixed manufacturing overhead cost**  **($3.00 per unit × 6,000 units produced)** | 18,000 |
| **Total product (manufacturing) cost** | $ 88,800 |

b.

|  |  |
| --- | --- |
| **Sales commissions** | $ 1.50 |
| **Variable administrative expense** | 0.45 |
| **Variable selling and administrative expense per unit** | $ 1.95 |
| **Total variable selling and administrative expense**  **($1.95 per unit × 6,000 units sold)** | $ 11,700 |
| **Total fixed selling and administrative expense**  **($0.75 per unit × 6,000 units + $0.60 per unit × 6,000 units)** | 8,100 |
| **Total period (nonmanufacturing) cost** | $ 19,800 |

c.

|  |  |  |
| --- | --- | --- |
| **Selling price per unit** |  | $ 20.20 |
| **Direct materials** | $ 6.40 |  |
| **Direct labor** | 3.80 |  |
| **Variable manufacturing overhead** | 1.60 |  |
| **Sales commissions** | 1.50 |  |
| **Variable administrative expense** | 0.45 |  |
| **Variable cost per unit sold** |  | 13.75 |
| **Contribution margin per unit** |  | $ 6.45 |

d.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.40 |
| **Direct labor** | 3.80 |
| **Direct manufacturing cost per unit (a)** | $ 10.20 |
| **Number of units produced (b)** | 7,000 |
| **Total direct manufacturing cost (a) × (b)** | $ 71,400 |

e.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.60 per unit × 7,000 units)** | $ 11,200 |
| **Total fixed manufacturing overhead cost**  **($3.00 per unit × 6,000 units\*)** | 18,000 |
| **Total indirect manufacturing cost** | $ 29,200 |

\*The average fixed manufacturing overhead cost per unit was determined by dividing the total fixed manufacturing overhead cost by 6,000 units.  
   
 f.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.40 |
| **Direct labor** | 3.80 |
| **Variable manufacturing overhead** | 1.60 |
| **Incremental manufacturing cost** | $ 11.80 |

5) a.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.20 |
| **Direct labor** | 3.85 |
| **Variable manufacturing overhead** | 1.35 |
| **Variable manufacturing cost per unit** | $ 10.40 |
| **Total variable manufacturing cost**  **($10.40 per unit × 6,000 units produced)** | $ 62,400 |
| **Total fixed manufacturing overhead cost** | 27,000 |
| **Total product (manufacturing) cost** | $ 89,400 |

b.

|  |  |
| --- | --- |
| **Sales commissions** | $ 0.50 |
| **Variable administrative expense** | 0.40 |
| **Variable selling and administrative expense per unit** | $ 0.90 |
| **Total variable selling and administrative expense**  **($0.90 per unit × 6,000 units sold)** | $ 5,400 |
| **Total fixed selling and administrative expense** | 9,000 |
| **Total period (nonmanufacturing) cost** | $ 14,400 |

c.

|  |  |  |
| --- | --- | --- |
| **Selling price per unit** |  | $ 22.40 |
| **Direct materials** | $ 5.20 |  |
| **Direct labor** | 3.85 |  |
| **Variable manufacturing overhead** | 1.35 |  |
| **Sales commissions** | 0.50 |  |
| **Variable administrative expense** | 0.40 |  |
| **Variable cost per unit sold** |  | 11.30 |
| **Contribution margin per unit** |  | $ 11.10 |

d.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.20 |
| **Direct labor** | 3.85 |
| **Direct manufacturing cost per unit (a)** | $ 9.05 |
| **Number of units produced (b)** | 7,000 |
| **Total direct manufacturing cost (a) × (b)** | $ 63,350 |

e.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.35 per unit × 7,000 units)** | $ 9,450 |
| **Total fixed manufacturing overhead cost** | 27,000 |
| **Total indirect manufacturing cost** | $ 36,450 |

6) a.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.90 |
| **Direct labor** | 4.05 |
| **Variable manufacturing overhead** | 1.65 |
| **Variable manufacturing cost per unit** | $ 11.60 |
| **Total variable manufacturing cost**  **($11.60 per unit × 6,000 units produced)** | $ 69,600 |
| **Total fixed manufacturing overhead cost** | 30,000 |
| **Total product (manufacturing) cost** | $ 99,600 |

b.

|  |  |
| --- | --- |
| **Sales commissions** | $ 0.80 |
| **Variable administrative expense** | 0.70 |
| **Variable selling and administrative expense per unit** | $ 1.50 |
| **Total variable selling and administrative expense**  **($1.50 per unit × 6,000 units sold)** | $ 9,000 |
| **Total fixed selling and administrative expense** | 9,600 |
| **Total period (nonmanufacturing) cost** | $ 18,600 |

c.

|  |  |  |
| --- | --- | --- |
| **Selling price per unit** |  | $ 23.40 |
| **Direct materials** | $ 5.90 |  |
| **Direct labor** | 4.05 |  |
| **Variable manufacturing overhead** | 1.65 |  |
| **Sales commissions** | 0.80 |  |
| **Variable administrative expense** | 0.70 |  |
| **Variable cost per unit sold** |  | 13.10 |
| **Contribution margin per unit** |  | $ 10.30 |

d.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.90 |
| **Direct labor** | 4.05 |
| **Direct manufacturing cost per unit (a)** | $ 9.95 |
| **Number of units produced (b)** | 7,000 |
| **Total direct manufacturing cost (a) × (b)** | $ 69,650 |

e.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.65 per unit × 7,000 units)** | $ 11,550 |
| **Total fixed manufacturing overhead cost** | 30,000 |
| **Total indirect manufacturing cost** | $ 41,550 |

7) a.

|  |  |
| --- | --- |
| **Fixed manufacturing overhead per unit** | $ 3.00 |
| **Number of units produced** | 5,000 |
| **Total fixed manufacturing overhead cost** | $ 15,000 |

b.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.25 per unit × 6,000 units)** | $ 7,500 |
| **Total fixed manufacturing overhead cost**  **($3.00 per unit × 5,000 units\*)** | 15,000 |
| **Total manufacturing overhead cost (a)** | $ 22,500 |
| **Number of units produced (b)** | 6,000 |
| **Manufacturing overhead per unit (a) ÷ (b)** | $ 3.75 |

\*The average fixed manufacturing overhead cost per unit was determined by dividing the total fixed manufacturing overhead cost by 5,000 units.  
   
 c.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.10 |
| **Direct labor** | 2.90 |
| **Direct manufacturing cost per unit (a)** | $ 9.00 |
| **Number of units produced (b)** | 4,000 |
| **Total direct manufacturing cost (a) × (b)** | $ 36,000 |

d.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.25 per unit × 4,000 units)** | $ 5,000 |
| **Total fixed manufacturing overhead cost**  **($3.00 per unit × 5,000 units\*)** | 15,000 |
| **Total indirect manufacturing cost** | $ 20,000 |

\*The average fixed manufacturing overhead cost per unit was determined by dividing the total fixed manufacturing overhead cost by 5,000 units.

8) a.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.80 |
| **Direct labor** | 4.00 |
| **Direct manufacturing cost per unit (a)** | $ 9.80 |
| **Number of units produced (b)** | 9,000 |
| **Total direct manufacturing cost (a) × (b)** | $ 88,200 |

b.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($2.10 per unit × 9,000 units)** | $ 18,900 |
| **Total fixed manufacturing overhead cost** | 144,000 |
| **Total indirect manufacturing cost** | $ 162,900 |

9) a.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.70 |
| **Direct labor** | 3.60 |
| **Direct manufacturing cost per unit (a)** | $ 9.30 |
| **Number of units produced (b)** | 8,000 |
| **Total direct manufacturing cost (a) × (b)** | $ 74,400 |

b.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.50 per unit × 8,000 units)** | $ 12,000 |
| **Total fixed manufacturing overhead cost** | 121,500 |
| **Total indirect manufacturing cost** | $ 133,500 |

10) a.

|  |  |  |
| --- | --- | --- |
| **Selling price per unit** |  | $ 21.40 |
| **Direct materials** | $ 6.25 |  |
| **Direct labor** | 4.15 |  |
| **Variable manufacturing overhead** | 1.60 |  |
| **Sales commissions** | 1.50 |  |
| **Variable administrative expense** | 0.45 |  |
| **Variable cost per unit sold** |  | 13.95 |
| **Contribution margin per unit** |  | $ 7.45 |

b.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.25 |
| **Direct labor** | 4.15 |
| **Direct manufacturing cost per unit (a)** | $ 10.40 |
| **Number of units produced (b)** | 8,000 |
| **Total direct manufacturing cost (a) × (b)** | $ 83,200 |

c.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.60 per unit × 8,000 units)** | $ 12,800 |
| **Total fixed manufacturing overhead cost**  **($12.60 per unit × 9,000 units\*)** | 113,400 |
| **Total indirect manufacturing cost** | $ 126,200 |

\*The average fixed manufacturing overhead cost per unit was determined by dividing the total fixed manufacturing overhead cost by 9,000 units.  
   
 d.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.25 |
| **Direct labor** | 4.15 |
| **Variable manufacturing overhead** | 1.60 |
| **Incremental manufacturing cost** | $ 12.00 |

11) a.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.20 |
| **Direct labor** | 3.40 |
| **Variable manufacturing overhead** | 1.35 |
| **Variable manufacturing cost per unit** | $ 9.95 |
| **Total variable manufacturing cost**  **($9.95 per unit × 4,000 units produced)** | $ 39,800 |
| **Total fixed manufacturing overhead cost**  **($3.00 per unit × 4,000 units produced)** | 12,000 |
| **Total product (manufacturing) cost** | $ 51,800 |

b.

|  |  |
| --- | --- |
| **Sales commissions** | $ 1.50 |
| **Variable administrative expense** | 0.45 |
| **Variable selling and administrative expense per unit** | $ 1.95 |
| **Total variable selling and administrative expense**  **($1.95 per unit × 4,000 units sold)** | $ 7,800 |
| **Total fixed selling and administrative expense**  **($0.70 per unit × 4,000 units + $0.40 per unit × 4,000 units)** | 4,400 |
| **Total period (nonmanufacturing) cost** | $ 12,200 |

c.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.20 |
| **Direct labor** | 3.40 |
| **Variable manufacturing overhead** | 1.35 |
| **Sales commissions** | 1.50 |
| **Variable administrative expense** | 0.45 |
| **Variable cost per unit sold** | $ 11.90 |

d.

|  |  |
| --- | --- |
| **Variable cost per unit sold (a)** | $ 11.90 |
| **Number of units sold (b)** | 5,000 |
| **Total variable costs (a) × (b)** | $ 59,500 |

e.

|  |  |
| --- | --- |
| **Total fixed manufacturing overhead cost**  **($3.00 per unit × 4,000 units\*) (a)** | $ 12,000 |
| **Number of units produced (b)** | 5,000 |
| **Average fixed manufacturing cost per unit produced (a) ÷ (b)** | $ 2.40 |

\*The average fixed manufacturing overhead cost per unit was determined by dividing the total fixed manufacturing overhead cost by 4,000 units.  
   
 f.

|  |  |
| --- | --- |
| **Fixed manufacturing overhead per unit** | $ 3.00 |
| **Number of units produced** | 4,000 |
| **Total fixed manufacturing overhead cost** | $ 12,000 |

g.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.35 per unit × 5,000 units)** | $ 6,750 |
| **Total fixed manufacturing overhead cost**  **($3.00 per unit × 4,000 units\*)** | 12,000 |
| **Total manufacturing overhead cost (a)** | $ 18,750 |
| **Number of units produced (b)** | 5,000 |
| **Manufacturing overhead per unit (a) ÷ (b)** | $ 3.75 |

\*The average fixed manufacturing overhead cost per unit was determined by dividing the total fixed manufacturing overhead cost by 4,000 units.

12) a.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.25 |
| **Direct labor** | 3.25 |
| **Variable manufacturing overhead** | 1.45 |
| **Sales commissions** | 0.50 |
| **Variable administrative expense** | 0.40 |
| **Variable cost per unit sold** | $ 11.85 |

b.

|  |  |
| --- | --- |
| **Variable cost per unit sold (a)** | $ 11.85 |
| **Number of units sold (b)** | 5,000 |
| **Total variable costs (a) × (b)** | $ 59,250 |

c.

|  |  |
| --- | --- |
| **Total variable manufacturing overhead cost**  **($1.45 per unit × 5,000 units)** | $ 7,250 |
| **Total fixed manufacturing overhead cost** | 18,000 |
| **Total manufacturing overhead cost (a)** | $ 25,250 |

13) a. Gary Resnick has suggested reclassifying some period costs as product costs since the company is building up large finished goods inventories in anticipation of the Christmas selling season. Product costs are inventoried and flow through to the income statement only when products are sold. Period expenses, in contrast, flow directly to the income statement. Because most of the finished goods inventories will be held over to the next quarter, reclassifying period costs as product costs will effectively defer recognition of expenses until next quarter and therefore will improve the current quarter's net operating income.  
   
 b. Mary Tappin is probably alarmed by both the economic situation the company finds itself in and by the apparent willingness of top management to bend the rules. Improperly reclassifying costs is an indication that top management does not feel like it has to play by the rules or be honest in its dealings with the bank. With such loose ethical standards, Mary may wonder what other unethical things they are doing.

14)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Direct Materials** | **Direct Labor** | **Manufacturing Overhead** | **Period Cost** |
| **a. Steel used in automobiles** | X |  |  |  |
| **b. Assembly department employee wages** |  | X |  |  |
| **c. Utility costs used in executive building** |  |  |  | X |
| **d. Travel costs of sales personnel** |  |  |  | X |
| **e. Cost of shipping goods to customers** |  |  |  | X |
| **f. Property taxes on assembly plant** |  |  | X |  |
| **g. Glass used in automobiles** | X |  |  |  |
| **h. Factory maintenance supplies** |  |  | X |  |
| **i. Depreciation on assembly plant** |  |  | X |  |
| **j. Plant manager's salary** |  |  | X |  |
| **k. CEO's salary** |  |  |  | X |
| **l. Depreciation on executive building** |  |  |  | X |
| **m. Salary of marketing executive** |  |  |  | X |
| **n. Tires installed on automobiles** | X |  |  |  |
| **o. Advertising** |  |  |  | X |

15) a.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.25 |
| **Direct labor** | 2.90 |
| **Variable manufacturing overhead** | 1.30 |
| **Variable manufacturing cost per unit** | $ 10.45 |
| **Total variable manufacturing cost**  **($10.45 per unit × 5,000 units produced)** | $ 52,250 |
| **Total fixed manufacturing overhead cost** | 18,000 |
| **Total product (manufacturing) cost** | $ 70,250 |

b.

|  |  |
| --- | --- |
| **Sales commissions** | $ 1.50 |
| **Variable administrative expense** | 0.45 |
| **Variable selling and administrative expense per unit** | $ 1.95 |
| **Total variable selling and administrative expense**  **($1.95 per unit × 5,000 units sold)** | $ 9,750 |
| **Total fixed selling and administrative expense** | 7,500 |
| **Total period (nonmanufacturing) cost** | $ 17,250 |

16) a.

|  |  |  |
| --- | --- | --- |
| **Direct materials** | $ 6.90 | |
| **Direct labor** | 3.70 | |
| **Variable manufacturing overhead** | 2.00 | |
| **Variable manufacturing cost per unit** | $ 12.60 | |
| **Total variable manufacturing cost**  **($12.60 per unit × 10,000 units produced)** | $ 126,000 |
| **Total fixed manufacturing overhead cost**  **($13.90 per unit × 10,000 units produced)** | 139,000 |
| **Total product (manufacturing) cost** | $ 265,000 |

b.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.90 |
| **Direct labor** | 3.70 |
| **Variable manufacturing overhead** | 2.00 |
| **Sales commissions** | 0.50 |
| **Variable administrative expense** | 0.40 |
| **Variable cost per unit sold** | $ 13.50 |

c.

|  |  |
| --- | --- |
| **Variable cost per unit sold (a)** | $ 13.50 |
| **Number of units sold (b)** | 9,000 |
| **Total variable costs (a) × (b)** | $ 121,500 |

d.

|  |  |  |
| --- | --- | --- |
| **Selling price per unit** |  | $ 19.70 |
| **Direct materials** | $ 6.90 |  |
| **Direct labor** | 3.70 |  |
| **Variable manufacturing overhead** | 2.00 |  |
| **Sales commissions** | 0.50 |  |
| **Variable administrative expense** | 0.40 |  |
| **Variable cost per unit sold** |  | 13.50 |
| **Contribution margin per unit** |  | $ 6.20 |

e.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.90 |
| **Direct labor** | 3.70 |
| **Variable manufacturing overhead** | 2.00 |
| **Incremental manufacturing cost** | $ 12.60 |

17) a.

|  |  |  |
| --- | --- | --- |
| **Direct materials** | $ 6.80 | |
| **Direct labor** | 3.20 | |
| **Variable manufacturing overhead** | 1.60 | |
| **Variable manufacturing cost per unit** | $ 11.60 | |
| **Total variable manufacturing cost**  **($11.60 per unit × 9,000 units produced)** | $ 104,400 |
| **Total fixed manufacturing overhead cost**  **($13.50 per unit × 9,000 units produced)** | 121,500 |
| **Total product (manufacturing) cost** | $ 225,900 |

b.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.80 |
| **Direct labor** | 3.20 |
| **Variable manufacturing overhead** | 1.60 |
| **Sales commissions** | 0.50 |
| **Variable administrative expense** | 0.40 |
| **Variable cost per unit sold** | $ 12.50 |

c.

|  |  |
| --- | --- |
| **Variable cost per unit sold (a)** | $ 12.50 |
| **Number of units sold (b)** | 10,000 |
| **Total variable costs (a) × (b)** | $ 125,000 |

d.

|  |  |  |
| --- | --- | --- |
| **Selling price per unit** |  | $ 18.20 |
| **Direct materials** | $ 6.80 |  |
| **Direct labor** | 3.20 |  |
| **Variable manufacturing overhead** | 1.60 |  |
| **Sales commissions** | 0.50 |  |
| **Variable administrative expense** | 0.40 |  |
| **Variable cost per unit sold** |  | 12.50 |
| **Contribution margin per unit** |  | $ 5.70 |

e.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.80 |
| **Direct labor** | 3.20 |
| **Variable manufacturing overhead** | 1.60 |
| **Incremental manufacturing cost** | $ 11.60 |

18) a.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.75 |
| **Direct labor** | 3.00 |
| **Variable manufacturing overhead** | 1.60 |
| **Variable manufacturing cost per unit** | $ 10.35 |
| **Total variable manufacturing cost**  **($10.35 per unit × 6,000 units produced)** | $ 62,100 |
| **Total fixed manufacturing overhead cost**  **($4.50 per unit × 6,000 units produced)** | 27,000 |
| **Total product (manufacturing) cost** | $ 89,100 |

b.

|  |  |
| --- | --- |
| **Sales commissions** | $ 1.50 |
| **Variable administrative expense** | 0.55 |
| **Variable selling and administrative expense per unit** | $ 2.05 |
| **Total variable selling and administrative expense**  **($2.05 per unit × 6,000 units sold)** | $ 12,300 |
| **Total fixed selling and administrative expense**  **($0.75 per unit × 6,000 units + $0.60 per unit × 6,000 units)** | 8,100 |
| **Total period (nonmanufacturing) cost** | $ 20,400 |

c.

|  |  |
| --- | --- |
| **Variable cost per unit sold (a)** | $ 12.40 |
| **Number of units sold (b)** | 5,000 |
| **Total variable costs (a) × (b)** | $ 62,000 |

d.

|  |  |  |
| --- | --- | --- |
| **Selling price per unit** |  | $ 19.10 |
| **Direct materials** | $ 5.75 |  |
| **Direct labor** | 3.00 |  |
| **Variable manufacturing overhead** | 1.60 |  |
| **Sales commissions** | 1.50 |  |
| **Variable administrative expense** | 0.55 |  |
| **Variable cost per unit sold** |  | 12.40 |
| **Contribution margin per unit** |  | $ 6.70 |

e.

|  |  |
| --- | --- |
| **Direct materials** | $ 5.75 |
| **Direct labor** | 3.00 |
| **Variable manufacturing overhead** | 1.60 |
| **Incremental manufacturing cost** | $ 10.35 |

19) a.

|  |  |  |
| --- | --- | --- |
| **Selling price per unit** |  | $ 25.90 |
| **Direct materials** | $ 6.65 |  |
| **Direct labor** | 3.30 |  |
| **Variable manufacturing overhead** | 1.70 |  |
| **Sales commissions** | 1.00 |  |
| **Variable administrative expense** | 0.50 |  |
| **Variable cost per unit sold** |  | 13.15 |
| **Contribution margin per unit** |  | $ 12.75 |

b.

|  |  |
| --- | --- |
| **Direct materials** | $ 6.65 |
| **Direct labor** | 3.30 |
| **Variable manufacturing overhead** | 1.70 |
| **Incremental manufacturing cost** | $ 11.65 |

20)

|  |  |  |
| --- | --- | --- |
| Traditional Format Income Statement | | |
| **Sales** |  | $ 276,000 |
| **Cost of goods sold\*** |  | 152,000 |
| **Gross margin** |  | 124,000 |
| **Selling and administrative expenses:** |  |  |
| **Selling expenses** | $ 19,500 |  |
| **Administrative expenses** | 30,500 | 50,000 |
| **Net operating income** |  | $ 74,000 |

\*Cost of goods sold = Beginning merchandise inventory + Purchases − Ending merchandise inventory  
 Cost of goods sold = $39,500 + $166,000 − $53,500 = $152,000

21)

|  |  |  |
| --- | --- | --- |
| Traditional Format Income Statement | | |
| **Sales** |  | $ 221,000 |
| **Cost of goods sold\*** |  | 141,000 |
| **Gross margin** |  | 80,000 |
| **Selling and administrative expenses:** |  |  |
| **Selling expenses** | $ 14,000 |  |
| **Administrative expenses** | 25,000 | 39,000 |
| **Net operating income** |  | $ 41,000 |

\*Cost of goods sold = Beginning merchandise inventory + Purchases − Ending merchandise inventory  
 Cost of goods sold = $34,000 + $155,000 − $48,000 = $141,000

22) a.

|  |  |  |
| --- | --- | --- |
| Traditional Format Income Statement | | |
| **Sales (5,900 units × $600 per unit)** |  | $ 3,540,000 |
| **Cost of goods sold (5,900 units × $411 per unit)** |  | 2,424,900 |
| **Gross margin** |  | 1,115,100 |
| **Selling and administrative expenses:** |  |  |
| **Selling expense ((5,900 units × $68 per unit) + $125,400)** | $ 526,600 |  |
| **Administrative expense ((5,900 units × $24 per unit) + $207,300)** | 348,900 | 875,500 |
| **Net operating income** |  | $ 239,600 |

b.

|  |  |  |
| --- | --- | --- |
| Contribution Format Income Statement | | |
| **Sales (5,900 units × $600 per unit)** |  | $ 3,540,000 |
| **Variable expenses:** |  |  |
| **Cost of goods sold (5,900 units × $411 per unit)** | $ 2,424,900 |  |
| **Variable selling expense (5,900 units × $68 per unit)** | 401,200 |  |
| **Variable administrative expense (5,900 units × $24 per unit)** | 141,600 | 2,967,700 |
| **Contribution margin** |  | 572,300 |
| **Fixed expenses:** |  |  |
| **Fixed selling expense** | 125,400 |  |
| **Fixed administrative expense** | 207,300 | 332,700 |
| **Net operating income** |  | $ 239,600 |

23) a.

|  |  |  |
| --- | --- | --- |
| Traditional Format Income Statement | | |
| **Sales (5,300 units × $590 per unit)** |  | $ 3,127,000 |
| **Cost of goods sold (5,300 units × $403 per unit)** |  | 2,135,900 |
| **Gross margin** |  | 991,100 |
| **Selling and administrative expenses:** |  |  |
| **Selling expense ((5,300 units × $58 per unit) + $124,400)** | $ 431,800 |  |
| **Administrative expense ((5,300 units × $22 per unit) + $206,300)** | 322,900 | 754,700 |
| **Net operating income** |  | $ 236,400 |

b.

|  |  |  |
| --- | --- | --- |
| Contribution Format Income Statement | | |
| **Sales (5,300 units × $590 per unit)** |  | $ 3,127,000 |
| **Variable expenses:** |  |  |
| **Cost of goods sold (5,300 units × $403 per unit)** | $ 2,135,900 |  |
| **Variable selling expense (5,300 units × $58 per unit)** | 307,400 |  |
| **Variable administrative expense (5,300 units × $22 per unit)** | 116,600 | 2,559,900 |
| **Contribution margin** |  | 567,100 |
| **Fixed expenses:** |  |  |
| **Fixed selling expense** | 124,400 |  |
| **Fixed administrative expense** | 206,300 | 330,700 |
| **Net operating income** |  | $ 236,400 |

24) a.

|  |  |  |
| --- | --- | --- |
| Contribution Format Income Statement | | |
| **Sales (4,800 units × $269 per unit)** |  | $ 1,291,200 |
| **Variable expenses:** |  |  |
| **Cost of goods sold (4,800 units × $114 per unit)** | $ 547,200 |  |
| **Variable selling expense (4,800 units × $6 per unit)** | 28,800 |  |
| **Variable administrative expense (4,800 units × $14 per unit)** | 67,200 | 643,200 |
| **Contribution margin** |  | 648,000 |
| **Fixed expenses:** |  |  |
| **Fixed selling expense** | 38,100 |  |
| **Fixed administrative expense** | 59,900 | 98,000 |
| **Net operating income** |  | $ 550,000 |

b.

|  |  |  |
| --- | --- | --- |
| Traditional Format Income Statement | | |
| **Sales (4,800 units × $269 per unit)** |  | $ 1,291,200 |
| **Cost of goods sold (4,800 units × $114 per unit)** |  | 547,200 |
| **Gross margin** |  | 744,000 |
| **Selling and administrative expenses:** |  |  |
| **Selling expense ((4,800 units × $6 per unit) + $38,100)** | $ 66,900 |  |
| **Administrative expense ((4,800 units × $14 per unit) + $59,900)** | 127,100 | 194,000 |
| **Net operating income** |  | $ 550,000 |

25) a.

|  |  |  |
| --- | --- | --- |
| Traditional Format Income Statement | | |
| **Sales** |  | $ 2,296,200 |
| **Cost of goods sold** |  | 997,600 |
| **Gross margin** |  | 1,298,600 |
| **Selling and administrative expenses:** |  |  |
| **Selling expense** | $ 143,100 |  |
| **Administrative expense** | 191,100 | 334,200 |
| **Net operating income** |  | $ 964,400 |

b.

|  |  |  |
| --- | --- | --- |
| Contribution Format Income Statement | | |
| **Sales** |  | $ 2,296,200 |
| **Variable expenses:** |  |  |
| **Cost of goods sold** | $ 997,600 |  |
| **Variable selling expense** | 86,000 |  |
| **Variable administrative expense** | 43,000 | 1,126,600 |
| **Contribution margin** |  | 1,169,600 |
| **Fixed expenses:** |  |  |
| **Fixed selling expense** | 57,100 |  |
| **Fixed administrative expense** | 148,100 | 205,200 |
| **Net operating income** |  | $ 964,400 |

26) a.

|  |  |  |
| --- | --- | --- |
| Contribution Format Income Statement | | |
| **Sales** |  | $ 4,069,800 |
| **Variable expenses:** |  |  |
| **Cost of goods sold** | $ 2,351,100 |  |
| **Variable selling expense** | 204,000 |  |
| **Variable administrative expense** | 102,000 | 2,657,100 |
| **Contribution margin** |  | 1,412,700 |
| **Fixed expenses:** |  |  |
| **Fixed selling expense** | 117,700 |  |
| **Fixed administrative expense** | 267,000 | 384,700 |
| **Net operating income** |  | $ 1,028,000 |

b.

|  |  |  |
| --- | --- | --- |
| Traditional Format Income Statement | | |
| **Sales** |  | $ 4,069,800 |
| **Cost of goods sold** |  | 2,351,100 |
| **Gross margin** |  | 1,718,700 |
| **Selling and administrative expenses:** |  |  |
| **Selling expense** | $ 321,700 |  |
| **Administrative expense** | 369,000 | 690,700 |
| **Net operating income** |  | $ 1,028,000 |