

I. COST TERMINOLOGY

A. Basic Definitions:

1. **Cost:** resources sacrificed to achieve a specific goal
 - a. **expired costs:** expenses
 - b. **unexpired costs:** assets
2. **Cost (or Revenue) object:** activity for which separate measurements of costs (or revenues) are desired;
3. **Cost Driver:** any factor whose change causes a change in the total cost of a related cost object (examples would include the skill of the work force, quality of material, complexity of construction etc.);
4. **Revenue Driver:** any factor whose change causes a change in the total revenue of a related revenue object;
5. **Relevant range:** the range of activity in which predictions are expected to be valid and the effect of the cost drivers is constant;

B. Behavior Oriented Costs:

1. **Variable cost:** constant per unit but change in direct proportion to a change in activity;
2. **Fixed cost:** variable on a per unit basis but remain constant over time, within the relevant range of activity;

Underlying Assumptions for the Definition of Variable and Fixed Costs:

1. the cost object can be identified
2. the time period is within the relevant range
3. the costs are linear within the relevant range
4. there is only one cost driver and the relevant range of fluctuations for that cost driver can be specified

NOTE: These assumptions are virtually never met in their entirety. To the extent that these conditions are not met, the classification of costs becomes more tenuous.

3. **Semi-variable Costs:** Costs that change (vary) with respect to the level of activity, but not in direct proportion;

C. Traceability Oriented Costs:

1. **Manufacturing costs:** (may be direct or indirect)
 - a. **Direct Manufacturing Costs (Direct Costs):**
 1. **Direct materials:** (DM) materials directly traceable to goods or jobs
 2. **Direct labor:** (DL) labor directly traceable to goods (NOTE: Management must decide whether to include payroll fringe costs such as overtime premiums, FICA, insurance, etc as direct costs or indirect costs; usually, these items are part of Indirect Manufacturing Costs unless specific tax benefits exist for including fringe costs as part of direct manufacturing costs)
 - b. **Indirect Manufacturing costs (Factory Overhead or Indirect Costs):** the costs of manufacturing that are not directly traceable to any specific product or job. They consist of:
 1. variable factory overhead (VOH)
 2. fixed factory overhead (FOH)

NOTE: Indirect Manufacturing Costs (IMC) are not expenses, they are product costs and are not charged to expense until all COGS are accumulated. This is in contrast to Selling and Administrative expenses which are period costs and are therefore expensed in the period in which they are incurred; **overtime premiums, FICA, insurance, etc; are typically part of Indirect Manufacturing Costs** but management may include them as direct manufacturing costs. Particular attention must be paid to these items in the planning process.

2. **Average cost:** total cost/denominator of choice; Average costs must be used with great caution because they are so sensitive to the denominator level of activity; as the denominator change so does the average;
3. **Unit cost:** total cost/number of units produced; unit costs are average costs and are only accurate at one specific level of activity; like all average costs, decisions made on the basis of unit costs must be made with great caution; particular attention and caution must be exercised when the unit cost is based on fixed costs per unit because of the instability of the unit cost number produced;
4. **Product (inventoriable or manufacturing) cost:** costs assigned to units of inventory; product costs remain

in inventory and are not charged against revenues until the period in which the goods are sold; **Note** that freight-in would be a product cost whereas freight-out would be a period cost; product costs can include only those costs incurred as part of the manufacturing process;

5. **Prime costs:** DM + DL
6. **Conversion Cost:** DL + IMC
7. **Joint Costs:** The common (jointly shared) costs incurred in the output of two or more commercially viable products being produced simultaneously;
8. **Byproduct Costs:** Costs associated with marketing a byproduct (byproducts are items for which there is no specific intention to produce (like sawdust) but which may have some minor sales value);
9. **Normal Costs:** Actual DM + DL + Applied OH

D. Time Oriented Costs:

1. **Period (nonmanufacturing) cost:** costs expensed in the period incurred (note: these are often referred to as nonmanufacturing costs);
2. **Historical Cost:** The actual price paid at the time of asset acquisition;
3. **Relevant Cost:** Future differential costs; in order to be relevant to the decision process a cost must take place in the future and be different from some alternative cost under consideration; (sometimes referred to as incremental costs)
4. **Sunk Cost:** A cost incurred in the past (sunk costs are irrelevant to the current decision process)
5. **Estimated Cost:** A future cost that can be estimated within an acceptable range (**Note:** do not confuse with Imputed cost);
6. **Standard Cost:** a predetermined "target" cost obtainable under projected conditions within the relevant range of activity; usually expressed on a unit basis; sometimes referred to as "**engineered cost**";

E. Control Oriented Costs:

1. **Controllable Cost:** a direct cost for which one person can have complete responsibility;
2. **Noncontrollable Cost:** a cost for which control is not possible and for which no person should be assigned responsibility;
3. **Out of Pocket Cost:** The portion of total cost that requires the immediate physical outlay of cash;
4. **Postponable cost:** Cost that can be delayed without serious impact to the job;
5. **Imputed Cost:** Cost that must be subjectively and/or arbitrarily determined due to the absence of data or quality of estimation techniques (**Note:** do not confuse with estimated cost)
6. **Opportunity Cost:** The cost of the next best alternative (or any alternative if a qualitative judgement is not possible);
7. **Differential or Marginal Cost:** The change in total cost resulting from a one unit change in the activity level;

F. Inventory Terminology:

1. **Inventory:** Cost of goods held for resale
 - a. **DM inventory:** DM on hand awaiting production
 - b. **WIP inventory:** Cost of goods in production process
 - c. **FG inventory:** goods completed but not yet sold
 - d. **COGS (CGS):** Cost of Goods Sold represents an inventory of completed goods that have been sold;
2. **Perpetual Inventory:** an inventory system that maintains a perpetual balance of the costs of goods available and sold;
 - a. Purchases are debited directly to inventory, no purchases acct
 - b. running balances for DM, WIP, COGS inventories
 - c. still requires regular physical inventories to update/verify
3. **Periodic Inventory:** an inventory system that only periodically can compute the cost of goods available or sold (this occurs when the amounts of physical inventory on hand is determined and then compared to beginning inventory plus purchases)
 - a. Purchases are recorded in purchases acct
 - b. costs of DM, WIP, COGS cannot be computed accurately until a physical inventory is made

II. COST OF GOODS MANUFACTURED

A. Cost of Goods Manufactured consists of three elements:

1. Direct Material
2. Direct Labor
3. Factory Overhead (IMC)

B. The Schedule of Cost of Goods manufactured is used to compute the cost of goods manufactured and has many similarities to the cost of goods sold section of the income statement; **on a manufacturing companies income statement, the cost of goods manufactured is used in the same manner that the purchases account is used on a retailer's income statement.**

C. Cost of Goods Manufactured Illustrated:

1. Use the following account balances to present the Schedule of Cost of Goods Manufactured and a Schedule of Cost of Goods Sold:

Property Tax.....	\$ 3,000	Nonmanufacturing administrative expenses..	\$ 43,000
Marketing expenses.....	37,000	Direct material inventory (12/31/x1).....	11,000
Finished goods inventory (12/31/x1).....	27,000	Direct material inventory (12/31/x2).....	8,000
Finished goods inventory (12/31/x2).....	34,000	Direct material purchased.....	84,000
Factory utilities.....	17,000	Factory repairs and maintenance.....	16,000
Work in Process Inventory (12/31/x1)....	20,000	Direct labor.....	34,000
Work in Process Inventory (12/31/x2)	26,000	Indirect labor.....	23,000
Depreciation: Factory Building.....	9,000	Indirect material used.....	11,000
Depreciation: Factory Equipment.....	11,000	Miscellaneous factory overhead.....	4,000

Schedule 1:

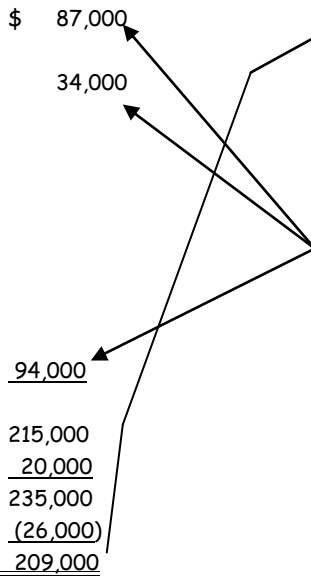
Schedule of Cost of Goods Manufactured:

Direct Materials used:	
Inventory 12/31/x1.....	\$ 11,000
Purchases:.....	<u>84,000</u>
Cost of DM available.....	\$ 95,000
less: Inventory 12/31/x2.....	(8,000)
DM used in production.....	\$ 87,000
Direct Labor:	
Factory Overhead:	
Property tax.....	3,000
Utilities.....	17,000
Depreciation (9,000 + 11,000)	20,000
Repairs and maintenance.....	16,000
Indirect labor.....	23,000
Indirect material.....	11,000
Miscellaneous.....	<u>4,000</u>
	<u>94,000</u>
Total manufacturing costs incurred	\$ 215,000
Add: WIP inventory 12/31/x1.....	<u>20,000</u>
Manufacturing costs accounted for.	235,000
Less: WIP inventory 12/31/x2.....	<u>(26,000)</u>
Cost of Goods Manufactured.....	<u>\$ 209,000</u>

Schedule 2

Schedule of Cost of Goods Sold:

Finished goods inventory 12/31/x1.	\$ 27,000
Cost of Goods Manufactured (see Schedule 1)	<u>209,000</u>
Cost of goods available for sale..	236,000
Finished goods inventory 12/31/x2.	<u>(34,000)</u>
Cost of goods sold.....	<u>\$ 202,000</u>



Note 1: There are three components to the Cost of Goods Manufactured: DM; DL; OH
Note 2: The Cost of Goods Manufactured becomes a component of the Cost of Goods Sold

Review Questions:

1. A "cost objective" is a budget figure used for evaluating actual costs.
T F
2. The payroll fringe costs of direct-labor employees are typically classified as direct-labor cost.
T F
3. Total manufacturing cost is equal to prime costs plus conversion costs.
T F
4. Prime costs minus conversion costs is equal to direct-material cost minus factory overhead cost.
T F
5. As the volume of production increases from year to year for a plastic kitchenware manufacturer:
(1) average fixed manufacturing costs per unit remain the same

- (2) variable manufacturing costs per unit increase
- (3) average fixed manufacturing costs per unit decrease
- (4) total variable manufacturing costs remain the same

6. As activity volume changes within the relevant range, costs that tend to remain the same include:

- (1) variable costs per unit
- (2) total fixed costs
- (3) both of the above
- (4) none of the above

7. The period costs of Swift Skis, Inc. would usually include:

- (1) the credit manager's salary
- (2) depreciation of equipment used in the ski-forming process
- (3) both of these costs
- (4) neither of these costs

8. The product costs of a boat factory would include:

- (1) electricity cost to operate factory machinery
- (2) fire and theft insurance on billing equipment
- (3) both of these costs
- (4) neither of these costs

9. Snave Company's selected data includes (in thousands): advertising expense \$175, direct labor \$375, selling commissions \$150, factory overhead \$480, direct materials used \$300. Compute the prime cost:

- (1) \$1,125
- (2) \$855
- (3) \$675
- (4) some other amount

10. Mereno Manufacturing Corporation's operating data for a year included these amounts: \$90,000 direct labor, \$400,000 sales, \$56,000 selling and administrative expenses, \$82,000 factory overhead, and \$130,000 direct materials used. Compute the amount of the gross profit. Inventories are negligible.

- (1) \$42,000
- (2) \$124,000
- (3) \$98,000
- (4) some other amount

11. Given in thousands for A Company for 19_8: total manufacturing costs incurred \$600, increase in work-in-process inventory \$35, decrease in finished goods inventory \$20. What is cost of goods sold?

- (1) \$585
- (2) \$615
- (3) \$600
- (4) some other amount

12. Overtime premium paid for direct labor should usually be considered part of:

- (1) direct-materials cost
- (2) direct-labor cost
- (3) non-manufacturing costs
- (4) factory overhead cost

13. Given for direct materials: Beginning inventory \$120,000, ending inventory \$95,000, purchases \$460,000. What is the direct materials used?

Solutions:

1. F
2. F
3. F
4. T
5. (3)
6. (3)
7. (1)
8. (1)
9. Prime Cost = DM + DL = \$300 + \$375 = \$675

10.	Sales.....		\$	400,000
	Cost of Goods Manufactured: DM	\$	130,000	
	DL.....		90,000	
	FOH.....		<u>82,000</u>	
	Manufacturing Costs Incurred...		<u>302,000</u>	
	Gross profit.....		<u>\$ 98,000</u>	

(= CGM = CGS (inventories are 0))

11.	Manufacturing costs incurred.....		\$	600,000
	Less: increase in WIP inventories.....			<u>(35,000)</u>
	Cost of goods manufactured.....	\$	565,000	
	add: decrease in Finished Goods inventories.			<u>20,000</u>
	Cost of goods sold.....	\$	<u>585,000</u>	

12. (4)

13. $\$120,000 + \$460,000 - \$95,000 = \$485,000$