Khurasan University

Faculty of Economics (BBA)

Cost Accounting

For 2nd Year, 3rd Semester

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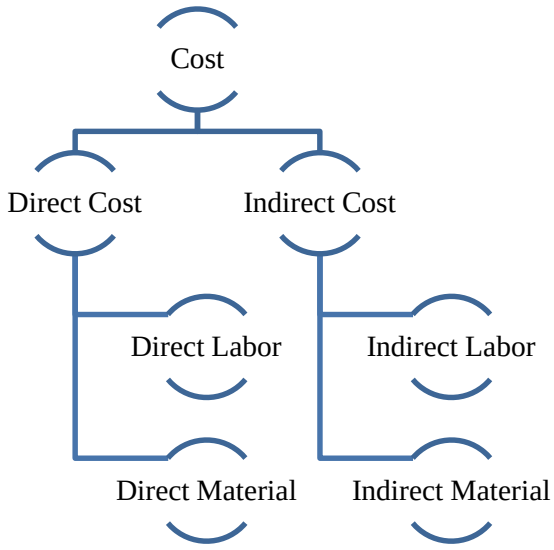
Chapter One

Definition of Cost Accounting:

Cost Accounting: Accounting for cost is known as a Cost Accounting.

هغه محاسبه کوم چې د مصرف د معلومولو لپاره ترسره کیږي د Cost Accounting څخه عبارت دی.

Classification of Cost:



- **Direct Cost:** A cost which can be easily traced into a product is called Direct Cost.

  هغه مصرف کوم چې په یو تولید کې په اسانۍ سره اندازه کېدلای شي د Direct Cost څخه عبارت دی.

  - **Direct Labor:** A labor which is directly involved in the production of a product is called Direct Labor.

    هغه مذدور کوم چې په تولید کې په مستقیمه توګه برخه اخلي هغې ته Direct Labor ویل کیږي.

  - **Direct Material:** Materials which can be easily traced in full into a product is called Direct Material.

    هغه مواد کوم چې په یو تولید کې په اسانۍ سره اندازه کیدلای شي د Direct Material څخه عبارت دی.

- **Indirect Cost:** A cost which cannot be easily traced into a product is called Indirect Cost or Factory Overhead (FOH).

  هغه مصرف کوم چې په یو تولید کې په اسانۍ سره نشي اندازه کېدلای شي د Indirect Cost څخه عبارت دی.

  - **Indirect Labor:** A labor which is not directly involved in the production of a product is called Indirect Labor.

    هغه مذدور کوم چې په تولید کې په مستقیمه توګه برخه نه اخلي هغې ته Indirect Labor ویل کیږي.

  - **Indirect Material:** Materials which cannot be easily traced in full into a product is called Indirect Material.

    هغه مواد کوم چې په یو تولید کې په اسانۍ سره نشي اندازه کیدلای د Indirect Material څخه عبارت دی.

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Types of Cost:

1. **Opportunity Cost:** The benefits which are sacrificed in favor of alternative decision is called Opportunity Cost.

   کله چې د یو متبادل کاروبار یا فیصلې د وجې نه مونږ خپل شته یا ګټې دلاسه ورکړو دلاسه ورکړل شوې ګټې ته Opportunity Cost ویل کیږي.

   د مثال په ډول، یو کس د څه وخت لپاره خپله موجوده وظیفه پریږدي او غواړي چې نوره روزنه واخلي چې دغه تصمیم دده د پاره تر څو چې ښه ته وظیفه اخلي د تنخوا څخه د محرومېدلو سبب ګرځي.

2. **Sunk Cost:** Cost which has already incurred and cannot be changed with the change in decision is called Sunk Cost.

   هغه مصرف کوم چې زمونږ په کاروبار باندې راغلی وي او د فیصلې په تغیرولو سره تغیر پکې نه راځي.

   د مثال په ډول، کله چې یو تجارت یو کس په اداره کې په کار وګماري او ده ته تنخوا هم ورکړي حالانکه دی اداړې ته هیڅ ګټه ورنکړي.

3. **Product Cost:** Cost which incurs on production of goods or services is called Product Cost.

   د شیانو او د خدماتو په تولید باندې چې کوم مصرف راځي هغې ته Product Cost ویل کیږي.

   د مثال په ډول، کله چې مونږ خام مواد په یو تولید تبدیلوو نو پدې باندې د خامو موادو، کاریګر، برق، د ماشین الاتو استهلاک، د ګډام کرایه او داسې نور مصارف راځي.

4. **Period Cost:** Cost other than the product cost is called Period Cost.

   د Product Cost نه علاوه چې په یو تولید باندې نور ځومره مصارف ترسره کیږي هغې ټولو ته Period Cost ویل کیږي.

   د مثال په ډول، کله چې یو تولید جوړ شي او لدې نه وروسته خریدار ته رسولو پورې چې پدې باندې ځومره مصارف راځي؛ لکه، د مواد رسوونکي تنخوا، ټرانسپورټ، د ګډام کرایه او داسې نور مصارف.

5. **Historical Cost:** Cost which incurs on the day of transaction is known as Historical Cost.

   کله چې یو تجارتي معامله ترسره شي په هغې ورځ باندې چې د اخیستل شوي جنس کوم قېمت وي هغې ته Historical Cost ویل کیږي.

   د مثال په ډول، نن مونږ یو نوی ماشین د کارخانې لپاره په ۵۰۰۰ روپۍ واخیست او څه وخت بعد ددغه ماشین قېمت په مارکېټ کې په ۷۰۰۰ روپۍ شي.

6. **Standard Cost:** The predetermined cost of a product is called Standard Cost.

   د یو تولید د تولید کیدو څخه مخکې چې د هغې د پاره کوم تخميني مصرف ټاکل کیږي هغې ته Standard Cost ویل کیږي.

   د مثال په ډول، مونږ چوکۍ ګاڼې تولیدوو او مونږ ددې د پاره د مخکې نه د مصارفو تخميني اټکل کوو؛ لکه، لرګی ۱۰۰ روپۍ، مېخ ۲۰ روپۍ، کاریګر مصرف ۳۰ روپۍ چې ټول مصرف ۱۵۰ روپۍ کیږي.

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7. **Variable Cost:** Cost which changes with the change in level of production is called Variable Cost.
هغه مصرف کوم چې د تولید په اندازه کې تغیر راوستلو سره تغیر کیږي.
د مثال په ډول، کله چې مونږ ۵ دانې چوکۍ ګانې تولیدوو نو مصرف پرې ۵۰۰۰ روپۍ راځي خو کله چې ۱۰ دانې چوکۍ ګانې تولید کړو نو مصرف پرې ۱۰۰۰۰ راځي.
8. **Fixed Cost:** Cost which does not change with the change in level of production is called Fixed Cost.
هغه مصرف کوم چې د تولید په اندازه کې تغیر راوستلو سره نه تغیر کیږي.
د مثال په ډول، کله چې مونږ په کارخانه کې د تولید د ځار لپاره یو سوپروایزر ولرو نو کارخانه که هر څومره توکي تولید کړي نو دده په تنخوا کې فرق نه راځي.
9. **Step Fixed Cost:** Cost which is fixed up to specific range of production and then changes is called Step Fixed Cost.
هغه مصرف کوم چې د تولید تر یو خاص اندازې پورې ثابت وي او د هغې اندازې زیاتېدو څخه وروسته تغیر پکې راشي او د تغیر ور وسته بېرته ثابت شي.
د مثال په ډول، که مونږ یو کور د پوهنتون لپاره په کرایه ونیسو او ددې پوهنتون ۱۰ خونې وي کوم چې د ۱۰۰۰ شاګردانو لپاره کفایت کوي او ددې کور کرایه ۲۰۰۰ روپۍ وي خو که پوهنتون څه وخت وروسته نور ۵۰۰ شاګردان جذب کړي نو پدې حالت کې ۵ نورو خونې والا کور ته ضرورت دی چې کرایه به یې ۱۰۰۰ روپۍ وي ترڅو شاګردانو لپاره بسنه وکړي.
10. **Semi Variable Cost:** Cost which is partly fixed and then variable is called Semi Variable Cost.
هغه مصرف کوم چې د تولید تر یو خاص حده پورې ثابت وي او د هغې څخه وروسته تغیر پکې راشي او د تغیر څخه وروسته همداسې تغیر بدونکی پاتې شي.
د مثال په ډول، که مونږ جنراتوري برق خپلې کارخانې ته وغزوو او مونږ ته وویل شي چې که ته مصرف کوي او کنه خو د میاشتې به ۱۵۰۰ روپۍ بېل ورکوي خو که ددې نه زیات شو د هغې به اضافې مصرف ورکوې.
11. **Implicit Cost:** Cost which we do not physically pay.
هغه مصرف کوم چې مونږ په فزیکي توګه نه اداء کوو.
د مثال په ډول، کله چې مونږ ته د کارخانې لپاره د یو کور ضرورت وشي او مونږ خپل کور ولرو حالانکه ددغه کور کرایه د میاشتې ۱۰۰۰ روپۍ وي خو مونږ یې د خپلې کارخانې لپاره استعمالوو لیکن مونږ یې کرایه نه اداء کوو.
12. **Explicit Cost:** Cost which we physically pay.
هغه مصرف کوم چې مونږ په فزیکي توګه اداء کوو.
د مثال په ډول، کله چې مونږ ته د کارخانې لپاره د یو کور ضرورت وشي او مونږ یې د میاشتې په ۱۰۰۰ روپۍ په کرایه ونیسو کوم چې وخت په وخت یې اداء کوو.

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Chapter Two

Cost of Goods Sold (C.G.S) Statement

Mohammad Usman Manufacturing Company
Cost of Goods Sold Statement
For The Period Ended _____

	Raw Material (Opening Inventory)		10,000.00
Add:	Net Purchases		
	Purchases	50,000.00	
+	Receiving and Handling Cost	10,000.00	
-	Discount Received	(5,000.00)	
-	Purchases Return	(5,000.00)	50,000.00
	Raw Material Available for Use		60,000.00
Less:	Raw Material (Closing Inventory)		(20,000.00)
	Raw Material Consumed		40,000.00
Add:	Direct Labor		10,000.00
	Prime/Primary Cost		50,000.00
Add:	Factory Overhead Cost (FOH)		20,000.00
	Total Manufacturing Cost		70,000.00
Add:	Work in Process (Opening Inventory)		20,000.00
	Cost of Goods to be Manufactured		90,000.00
Less:	Work in Process (Closing Inventory)		(10,000.00)
	Cost of Goods Manufactured		80,000.00
Add:	Finished Goods (Opening Inventory)		10,000.00
	Cost of Goods Available for Sale		90,000.00
Less:	Finished Goods (Closing Inventory)		(20,000.00)
	Cost of Goods Sold (C.G.S)		70,000.00

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Question 2, Page 31:

Manufacturing costs; cost of goods manufactured; cost of goods sold. The December 31, 19B trail balance of the Balkwell Company showed:

Sales	4,000,500.00	Sales returns and allowances .	25,200.00
Purchases (net)	2,400,000.00	Transportation in	32,000.00
Direct labor	3,204,000.00	Factory overhead	1,885,600.00
Sales salaries	200,000.00	Advertising expenses	155,000.00
		Delivery expenses	65,000.00

Inventories	Dec 31, 19B	Dec 31, 19A
Finished goods	467,400.00	620,000.00
Work in process	136,800.00	129,800.00
Materials	196,000.00	176,000.00

Required

1. Total manufacturing cost
2. Cost of goods manufactured
3. Cost of goods sold

Balkwell Company
Cost of Goods Sold Statement
For the period ended: Dec 31, 19B

	Raw materials (opening inventory)		176,000.00
Add:	Net purchases		
	Purchases	2,400,000.00	
+	Transportation in	32,000.00	2,432,000.00
	Raw material available for use		2,608,000.00
Less:	Raw materials (closing inventory)		(196,000.00)
	Raw materials consumed		2,412,000.00
Add:	Direct labor		3,204,000.00
	Prime cost		5,616,000.00
Add:	Factory overhead cost		1,885,600.00
	Total manufacturing cost		7,501,600.00
Add:	Work in process (opening inventory)		129,800.00
	Cost of goods to be manufactured		7,631,400.00
Less:	Work in process (closing inventory)		(136,800.00)
	Cost of goods manufactured		7,494,600.00
Add:	Finished goods (opening inventory)		620,000.00
	Cost of goods available for sale		8,114,600.00
Less:	Finished goods (closing inventory)		(467,400.00)
	Cost of goods sold		7,647,200.00

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Question 3, Page 31:

Cost of goods sold statement; income statement. The accounting department of the Ruthven Company provided the following data for May: sales, 72,000; marketing expenses, 5%; administrative expenses, 1%; other expenses, 0.5% of all sales; purchases, 36,000; factory overhead, $^2/_3$ of direct labor, direct labor, 15,000.

Beginning inventories	
Finished goods ……..……	7,000
Work in process ……..	8,000
Materials …….	8,000
Ending inventories	
Finished goods …….	10,200
Work in process ……..	15,000
Materials …….	8,500

Required:

1. Cost of goods sold statement
2. Income statement

Ruthven Company
Cost of Goods Sold Statement
For the period ended: May 31,

	Raw materials (opening inventory)		8,000.00
Add:	Net purchases		36,000.00
	Raw material available for use		44,000.00
Less:	Raw materials (closing inventory)		(8,500.00)
	Raw materials consumed		35,500.00
Add:	Direct labor		15,000.00
	Prime cost		50,500.00
Add:	Factory overhead cost		10,000.00
	Total manufacturing cost		60,500.00
Add:	Work in process (opening inventory)		8,000.00
	Cost of goods to be manufactured		68,500.00
Less:	Work in process (closing inventory)		(15,000.00)
	Cost of goods manufactured		53,500.00
Add:	Finished goods (opening inventory)		7,000.00
	Cost of goods available for sale		60,500.00
Less:	Finished goods (closing inventory)		(10,200.00)
	Cost of goods sold		50,300.00

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Ruthven Company
Income Statement
For the period ended: May 31,

	Sales		72,000.00
Less:	Cost of goods sold		(50,300.00)
	Gross income		21,700.00
Less:	Operative expenses		
	Marketing expenses	3,600.00	
	Administrative expenses	720.00	
	Other expenses	360.00	(4,680.00)
	Net income		17,020.00

Question 5, Page 32:

Income statement; profit percentage. The Shellkoff Company submits the following information on December 31, 19--:

Sales for the year	314,000
Inventories at the beginning of the year:	
Finished goods	5,900
Work in process	4,600
Materials	3,800
Purchases of materials for the year	140,000
Direct labor	67,350
Factory overhead: 50% of labor cost	
Inventories at the end of the year:	
Finished goods	9,270
Work in process	6,200
Materials	4,300
Other expenses for the year:	
Marketing expenses	23,115
Administrative expenses	17,650

Required:

1. An income statement for the year ended December 31, 19--
2. The percentage of income to sales, before income tax

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Shellkoff Company
Cost of Goods Sold Statement
For the period ended: Dec 31, 19--

	Raw materials (opening inventory)		3,800.00
Add:	Net purchases		140,000.00
	Raw material available for use		143,800.00
Less:	Raw materials (closing inventory)		(4,300.00)
	Raw materials consumed		139,500.00
Add:	Direct labor		67,350.00
	Prime cost		206,850.00
Add:	Factory overhead cost		33,675.00
	Total manufacturing cost		240,525.00
Add:	Work in process (opening inventory)		4,600.00
	Cost of goods to be manufactured		245,125.00
Less:	Work in process (closing inventory)		(6,200.00)
	Cost of goods manufactured		238,925.00
Add:	Finished goods (opening inventory)		5,900.00
	Cost of goods available for sale		244,825.00
Less:	Finished goods (closing inventory)		(9,270.00)
	Cost of goods sold		235,555.00

Shellkoff Company
Income Statement
For the period ended: Dec 31, 19--

	Sales		314,000.00
Less:	Cost of goods sold		(235,555.00)
	Gross income		78,445.00
Less:	Operative expenses		
	Marketing expenses	23,115.00	
	Administrative expenses	17,650.00	(40,765.00)
	Net income		37,680.00

$$\textbf{Percentage of Income to Sales} = \frac{Net\ Income}{Sales}\ x\ 100$$

$$= \frac{37{,}680.00}{314{,}000.00}\ x\ 100$$

$$= 12\%$$

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Question 6, Page 32:

Cost of goods sold statement. The following data are provided by the controller of the Metaxen Corporation.

Cash	240,000	
Accounts receivable	348,000	
Inventories	Jan 1	Dec 31
Finished goods	44,200	66,000
Work in process	29,800	38,800
Materials	88,000	64,000
Materials purchased	366,000	
Sales discount	8,000	
Factory overhead (excluding depreciation)	468,400	
Marketing and administrative expenses (excluding depreciation)	344,200	
Depreciation (90% manufacturing, 10% marketing and administrative expenses)	116,000	
Sales	1,844,000	
Direct labor	523,600	
Freight on materials purchased	6,600	
Rental income	64,000	
Interest on bonds payable	16,000	

Required:

Cost of goods sold statement

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Metaxen Company
Cost of Goods Sold Statement
For the period ended: Dec 31, 19--

	Raw materials (opening inventory)		88,000.00
Add:	Net purchases		
	Materials purchased	366,000.00	
+	Freight on materials purchased	6,600.00	372,600.00
	Raw material available for use		460,600.00
Less:	Raw materials (closing inventory)		(64,000.00)
	Raw materials consumed		396,600.00
Add:	Direct labor		523,600.00
	Prime cost		920,200.00
Add:	Factory overhead cost		
	Factory overhead	468,400.00	
+	Depreciation (116000*90%)	104,400.00	572,800.00
	Total manufacturing cost		1,493,000.00
Add:	Work in process (opening inventory)		29,800.00
	Cost of goods to be manufactured		1,522,800.00
Less:	Work in process (closing inventory)		(38,800.00)
	Cost of goods manufactured		1,484,000.00
Add:	Finished goods (opening inventory)		44,200.00
	Cost of goods available for sale		1,528,200.00
Less:	Finished goods (closing inventory)		(66,000.00)
	Cost of goods sold		1,462,200.00

Metaxen Company
Income Statement
For the period ended: Dec 31, 19--

	Sales	1,844,000.00	
-	Sales discount	(8,000.00)	
	Net sales		1,836,000.00
Less:	Cost of goods sold		(1,462,200.00)
	Gross income		373,800.00
Less:	Operative expenses		
	Depreciation (116000*10%)	11,600.00	
	Marketing & administrative expenses	344,200.00	
	Interest on bonds payable	16,000.00	(371,800.00)
	Operative income		2,000.00
Add:	Other income		
	Rental income		64,000.00
	Net income		66,000.00

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Question 4, Page 32:

Income Statement. Crowley, Inc., submits the following data for September:

Direct labor cost, 30,000.
Cost of goods sold, 111,000.
Factory overhead is applied at the rate of 150% of direct labor cost.

Inventory accounts showed these beginning and ending balances:

	September 1	September 30
Finished goods	15,000.00	17,500.00
Work in process	9,600.00	13,000.00
Materials	7,000.00	7,400.00

Other data:

Marketing expenses	14,100.00
General and administrative expenses	22,900.00
Sales for the month	182,000.00

Required: An income statement with schedule showing cost of goods manufactured and sold.

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Crowley, Inc.
Cost of Goods Sold Statement
For the period ended: Sep 30, 19--

	Raw materials (opening inventory)		7,000.00
Add:	Net purchases		42,300.00
	Raw material available for use		49,300.00
Less:	Raw materials (closing inventory)		7,400.00
	Raw materials consumed		41,900.00
Add:	Direct labor		30,000.00
	Prime cost		71,900.00
Add:	Factory overhead cost		45,000.00
	Total manufacturing cost		116,900.00
Add:	Work in process (opening inventory)		9,600.00
	Cost of goods to be manufactured		126,500.00
Less:	Work in process (closing inventory)		13,000.00
	Cost of goods manufactured		113,500.00
Add:	Finished goods (opening inventory)		15,000.00
	Cost of goods available for sale		128,500.00
Less:	Finished goods (closing inventory)		17,500.00
	Cost of goods sold		111,000.00

Formula for reverse method:

Cost of goods available for sale - Finished goods (closing inventory) = C.G.S.
Cost of goods available for sale = C.G.S. + Finished goods (closing inventory)
Cost of goods available for sale = 111000 + 17500
Cost of goods available for sale = 128500

Short method for reverse method:

Add:	Unknown figure	که چېرې عمليه د جمعې وه نو د نامعلوم عدد د پيداکولو لپاره معلوم اعداد سره منفي کوو
	Known figure	
	Known figure	
Less	Unknown figure	که چېرې عمليه د منفي وه نو د نامعلوم عدد د پيداکولو لپاره معلوم اعداد سره جمع کوو
	Known figure	
	Known figure	
	Known figure	که چېرې عمليه منفي يا د جمعې وي خو نامعلوم عدد د معلومو اعدادو په منځ کې وي نو معلوم اعداد يو له بل نه يې منفي کوو
Add:	Unknown figure	
	Known figure	
	Known figure	که چېرې عمليه منفي يا د جمعې وي خو نامعلوم عدد د معلومو اعدادو په منځ کې وي نو معلوم اعداد يو له بل نه يې منفي کوو
Less	Unknown figure	
	Known figure	

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Crowley, In.
Income Statement
For the period ended: Sep 30, 19--

	Sales		182,000.00
Less:	Cost of goods sold		(111,000.00)
	Gross income		71,000.00
Less:	Operative expenses		
	Marketing expenses	14,100.00	
	General and administrative expenses	22,900.00	(37,000.00)
	Net income		34,000.00

Question 7, Page 33:

Cost of goods sold statement. The following data relate to the Brockway Corporation:

	Inventories	
	Ending	Beginning
Finished goods	95,000.00	110,000.00
Work in process	80,000.00	70,000.00
Direct materials	95,000.00	90,000.00

Costs incurred during the period:	
Costs of goods available for sale	684,000.00
Total manufacturing cost	584,000.00
Factory overhead	167,000.00
Direct materials used	193,000.00

Required: Cost of goods sold statement.

Brockway Corporation
Cost of Goods Sold Statement
For the period ended: Dec 31, 19--

	Raw materials (opening inventory)		90,000.00
Add:	Net purchases		198,000.00
	Raw material available for use		288,000.00
Less:	Raw materials (closing inventory)		95,000.00
	Raw materials consumed		193,000.00
Add:	Direct labor		224,000.00
	Prime cost		417,000.00
Add:	Factory overhead cost		167,000.00
	Total manufacturing cost		584,000.00
Add:	Work in process (opening inventory)		70,000.00
	Cost of goods to be manufactured		654,000.00
Less:	Work in process (closing inventory)		80,000.00
	Cost of goods manufactured		574,000.00
Add:	Finished goods (opening inventory)		110,000.00
	Cost of goods available for sale		684,000.00
Less:	Finished goods (closing inventory)		95,000.00
	Cost of goods sold		589,000.00

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Question 8, Page 33:

Cost of goods sold statement; unit cost. The records of Reinecke, Inc., show the following information as of March 31, 19B:

Materials used	440,000.00
Direct labor	290,000.00
Indirect labor	46,000.00
Light and power	4,260.00
Depreciation	4,700.00
Repairs to machinery	5,800.00
Miscellaneous factory overhead	29,000.00
Work in process inventory, April 1, 19A	41,200.00
Finished goods inventory, April 1, 19A	34,300.00
Work in process inventory, March 31, 19B	42,500.00
Finished goods inventory, March 31, 19B	31,500.00

During the year, 18,000 units were completed.

Required:

(1) A cost of goods sold statement for the year ended March 31, 19B.
(2) The unit cost of goods manufactured.
(3) The amount of over or underapplied factory overhead if the company applies factory overhead on the basis of 30% of direct labor cost.

Reinecke, Inc.,
Cost of Goods Sold Statement
For the period ended: March 31, 19B

	Raw materials consumed		440,000.00
Add:	Direct labor		290,000.00
	Prime cost		730,000.00
Add:	Factory overhead cost		
	Indirect labor	46,000.00	
	Light and power	4,260.00	
	Depreciation	4,700.00	
	Repairs to machinery	5,800.00	
	Miscellaneous factory overhead	29,000.00	89,760.00
	Total manufacturing cost		819,760.00
Add:	Work in process (opening inventory)		41,200.00
	Cost of goods to be manufactured		860,960.00
Less:	Work in process (closing inventory)		(42,500.00)
	Cost of goods manufactured		818,460.00
Add:	Finished goods (opening inventory)		34,300.00
	Cost of goods available for sale		852,760.00
Less:	Finished goods (closing inventory)		(31,500.00)
	Cost of goods sold		821,260.00

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Requirement 2:

$$\text{Unit Cost} = \frac{\text{Cost of goods manufactured}}{\text{Units manufactured}} = \frac{818{,}460.00}{18{,}000.00} = 45.47$$

Requirement 3:

Under or over applied FoH		
	Applied FoH (290000x30%)	87,000.00
Less:	Actual FoH	(89,760.00)
	Under applied FoH	(2,760.00)

Question 12, Page 34:

Income statement; cost and profit ratios. The records of the Yukon Refrigerator Company show the following information for the three months ended March 31, 19--:

Materials purchased	1,946,700.00
Inventories, January 1, 19--:	
Finished goods (100 refrigerators)	43,000.00
Materials	268,000.00
Direct labor	2,125,800.00
Factory overhead (40% variable)	764,000.00
Marketing expenses (all fixed)	516,000.00
General and administrative expenses (all fixed)	461,000.00
Sales (12,400 refrigerators)	6,634,000.00
Inventories, March 31, 19--:	
No unfinished work on hand.	
Finished goods (200 refrigerators), costed at 395 each.	
Materials	167,000.00

Required:

(1) An income statement for the period.
(2) The number of units manufactured.
(3) The unit cost of refrigerators manufactured.
(4) The gross profit per unit sold.
(5) The income per unit sold.
(6) The ratio of gross profit to sales.
(7) The income to sales percentage.
(8) The break-even point in sales dollars.

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Yukon Refrigerator Company
Cost of Goods Sold Statement
For the period ended: March 31, 19--

	Raw materials (opening inventory)		268,000.00
Add:	Net purchases		1,946,700.00
	Raw material available for use		2,214,700.00
Less:	Raw materials (closing inventory)		(167,000.00)
	Raw materials consumed		2,047,700.00
Add:	Direct labor		2,125,800.00
	Prime cost		4,173,500.00
Add:	Factory overhead cost		764,000.00
	Total manufacturing cost/Cost of goods manufactured		4,937,500.00
Add:	Finished goods (opening inventory)		43,000.00
	Cost of goods available for sale		4,980,500.00
Less:	Finished goods (closing inventory) (200*395)		(79,000.00)
	Cost of goods sold		4,901,500.00

Yukon Refrigerator Company
Income Statement
For the period ended: March 31, 19--

	Sales		6,634,000.00
Less:	Cost of goods sold		(4,901,500.00)
	Gross income		1,732,500.00
Less:	Operative expenses		
	Marketing expenses	516,000.00	
	General and administrative expenses	461,000.00	(977,000.00)
	Net income		755,500.00

Requirement 2:

	Number of units manufactured	
	Units sold	12,400.00
+	Finished goods (closing units)	200.00
		12,600.00
-	Finished goods (opening units)	(100.00)
	Units manufactured	12,500.00

Requirement 3:

$$\text{Unit Cost} = \frac{\text{Cost of goods manufactured}}{\text{Units manufactured}} = \frac{4,937,500.00}{12,500.00} = 395.00 \text{ per unit}$$

Requirement 4:

$$\text{Gross profit per unit sold} = \frac{\text{Gross profit}}{\text{Units sold}} = \frac{1,732,500.00}{12,400.00} = 139.72 \text{ per unit}$$

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Requirement 5:

$$\text{Net income per unit sold} = \frac{\text{Net profit}}{\text{Units sold}} = \frac{755{,}500.00}{12{,}400.00} = 60.93 \text{ per unit}$$

Requirement 6:

$$\text{Ratio of gross profit to sales} = \frac{\text{Gross profit}}{\text{Sales}} \text{ X } 100 = \frac{1{,}732{,}500.00}{6{,}634{,}000.00} \text{ X } 100 = 26.12\ \%$$

Requirement 7:

$$\text{Net income to sales percentage} = \frac{\text{Net income}}{\text{Sales}} \text{ X } 100 = \frac{755{,}500.00}{6{,}634{,}000.00} \text{ X } 100 = 11.39\ \%$$

Requirement 8:

Total fixed costs		**Total variable costs**	
Marketing expenses (all fixed)	516,000.00	Raw materials consumed	2,047,700.00
General & administrative expenses (all fixed)	461,000.00	Direct labor	2,125,800.00
Factory overhead (764000*60%)	458,400.00	Factory overhead (40% variable)	305,600.00
	1,435,400.00		4,479,100.00

$$\text{Break-even point} = \frac{\text{Fixed costs}}{\text{1 - Variable / Sales}} = \frac{1{,}435{,}400.00}{\text{1-4,479,100.00/6,634,000.00}} = 4{,}430{,}246.91$$

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Chapter Three

Cost, Concept, Uses and Classification

Formulas:

1. Prime Cost = Direct Material[1] + Direct Labor
2. Conversion Cost = Direct Labor + Factory Overhead Cost
3. Cost to Produce[2] = Direct Material + Direct Labor + FoH[3] Cost
4. Bid Price[4] = Cost + Profit[5]

Question 4, Page 58:

Bid calculations. The Shepard Company is to submit a bid on the production of 10000 ceramic salad bowls. It is estimated that the cost of materials will be 7500 and direct labor, 10100. Factory overhead is applied at 5 per direct labor hour in the Molding Department and at 120% of the direct labor cost in the Finishing Department. It is estimated that 800 direct labor hours will be required in Molding and that direct labor cost in Finishing will be 4300. The company wishes a bid price consisting of a markup of 40% of its total production costs.

Required:

(1) Estimated cost to produce.
(2) Estimated prime cost.
(3) Estimated conversion cost.
(4) Bid price.

Solution:

Requirement 1:

Estimated cost to produce

Direct material		7,500.00
Direct labor		10,100.00
Factory overhead		
Molding Dept. (800*5)	4,000.00	
Finishing Dept. (4300*120%)	5,160.00	9,160.00
Estimated cost to produce		**26,760.00**

[1] It is also called, Raw material consumed.
[2] It is also called, Total production or Total manufacturing cost.
[3] It is also called, Factory overhead.
[4] It is also called, Sales price.
[5] It is also called, Mark-up.

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Requirement 2:

Estimated prime cost		
Direct material		7,500.00
Direct labor		10,100.00
Estimated prime cost		**17,600.00**

Requirement 3:

Estimated conversion cost		
Direct labor		10,100.00
Factory overhead cost		9,160.00
Estimated conversion cost		**19,260.00**

Requirement 4:

Bid price		
Cost		26,760.00
Profit (26760*40%)		10,704.00
Estimated bid price		**37,464.00**

Question 6, page 59:

Cost computations. On October 1, the Florida Company had the following inventories: materials, 24000; work in process, 12000; and finished goods, 36000. During the month, materials purchases totaled 56000. Direct labor for October was 40000, at a uniform wage of 6.40 per hour. Marketing and administrative expenses for the month amounted to 10% of net sales. Inventories on October 31 were as follows: materials, 20000; work in process, 8000; and finished goods, 40000. Net sales for October totaled 200000. Factory overhead is applied on the basis of 8 per direct labor hour.

Required:

(1) Prime cost.
(2) Conversion cost.
(3) Cost of goods manufactured.
(4) Cost of goods sold.
(5) Income from operations.

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Solution:

Requirement 1:

	Prime cost		
	Raw material opening inventory		24,000.00
Add:	Net purchases		56,000.00
	Raw material available for use		80,000.00
Less:	Raw material closing inventory		(20,000.00)
	Raw material consumed		60,000.00
Add:	Direct labor		40,000.00
	Prime cost		**100,000.00**

Requirement 2:

Conversion cost		
Direct labor		40,000.00
Factory overhead (40000/6.40)	(6250*8)	50,000.00
Conversion cost		**90,000.00**

Requirement 3:

	Cost of goods manufactured		
	Prime cost		100,000.00
Add:	Factory overhead cost		50,000.00
	Total manufacturing cost		150,000.00
Add:	Work in process opening inventory		12,000.00
	Cost of goods to be manufactured		162,000.00
Less:	Work in process closing inventory		(8,000.00)
	Cost of goods manufactured		**154,000.00**

Requirement 4:

	Cost of goods sold		
	Cost of goods manufactured		154,000.00
Add:	Finished goods opening inventory		36,000.00
	Cost of goods available for sale		190,000.00
Less:	Finished goods closing inventory		(40,000.00)
	Cost of goods sold		**150,000.00**

Requirement 5:

	Income statement		
	Sales		200,000.00
Less:	Cost of goods sold		(150,000.00)
	Gross profit		50,000.00
Less:	Operative expenses		
	Marketing & administrative expenses		(20,000.00)
	Net profit		**30,000.00**

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Question 5, Page 58:

Cost computation. Messersmith, Inc., submits the following data on October 31, 19--: materials put into process, 42300; direct labor is paid at the rate of 7.80 and 8.40 per hour in Department A and B respectively; Department A worked 6125 hours and Department B reported 9875 hours. Factory overhead is applied on the basis of direct labor hours at the rate of 5 per hour in Department A and 4.20 per hour in Department B.

	Inventories	
	Oct. 1	*Oct. 31*
Finished goods …….	11300	9400
Work in process ……...	17300	19425
Materials ……..	15000	19200

Required: Without preparing a formal income statement, determine:

(1) Prime cost.
(2) Total manufacturing costs.
(3) Cost of goods manufactured.
(4) Cost of goods sold.
(5) Conversion cost.

Solution:

Requirement 1:

Prime cost		
Direct material		42,300.00
Direct labor		130,725.00
Prime cost		**173,025.00**

Requirement 2:

	Total manufacturing cost		
	Prime cost		173,025.00
Add:	Factory overhead cost		72,100.00
	Total manufacturing cost		**245,125.00**

Requirement 3:

	Cost of goods manufactured		
	Total manufacturing cost		245,125.00
Add:	Work in process opening inventory		17,300.00
	Cost of goods to be manufactued		262,425.00
Less:	Work in process closing inventory		(19,425.00)
	Cost of goods manufactured		**243,000.00**

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Requirement 4:

	Cost of goods sold		
	Cost of goods manufactured		243,000.00
Add:	Finished goods opening inventory		11,300.00
	Cost of goods available for sale		254,300.00
Less:	Finished goods closing inventory		(9,400.00)
	Cost of goods sold		**244,900.00**

Requirement 5:

	Conversion cost		
	Direct labor		130,725.00
	Factory overhead cost		72,100.00
	Conversion cost		**202,825.00**

Question 9, Page 59:

Fire loss calculation. Robidaux Products, Inc., a small manufacturing company, produces a highly flammable cleaning fluid. On May 31, 19F, the company had a fire which completely destroyed the processing building and the work in process inventory; some of the equipment was saved.

After the fire, a physical inventory was taken. The materials were valued at 30000, the finished goods at 60000, and supplies at 5000.

The inventories of January 1, 19F, consisted of:

Finished goods	70,000.00
Work in process	50,000.00
Materials	15,000.00
Supplies	2,000.00
Total	137,000.00

A review of the accounts showed that the sales and gross profit for the last five years were:

	Sales	Gross Profit
19A	300,000.00	86,200.00
19B	320,000.00	102,400.00
19C	330,000.00	108,900.00
19D	250,000.00	62,500.00
19E	280,000.00	84,000.00
Total	1,480,000.00	444,000.00

The sales for the first five months of 19F were 150000; materials purchases were 50000; freight on purchases was 5000; direct labor for the five months was 40000. For the past five years, factory overhead was 50% of direct labor cost.

Required: The value of the work in process inventory lost by five.

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Solution:

Robidaux
Cost of Goods Sold Statement
For the period ended: May 31, 19F

	Raw materials (opening inventory)		15,000.00
Add:	Net purchases		
+	Purchases	50,000.00	
+	Freight on purchases	5,000.00	55,000.00
	Raw material available for use		70,000.00
Less:	Raw materials (closing inventory)		(30,000.00)
	Raw materials consumed		40,000.00
Add:	Direct labor		40,000.00
	Prime cost		80,000.00
Add:	Factory overhead cost		20,000.00
	Total manufacturing cost		100,000.00
Add:	Work in process (opening inventory)		50,000.00
	Cost of goods to be manufactured		150,000.00
Less:	Work in process (closing inventory)		(55,000.00)
	Cost of goods manufactured		95,000.00
Add:	Finished goods (opening inventory)		70,000.00
	Cost of goods available for sale		165,000.00
Less:	Finished goods (closing inventory)		(60,000.00)
	Cost of goods sold		105,000.00

یادونه: په پورتني مثال کې لکه څرنګه چې د Work in process تعمیر مکمل سوځېدلی نو لدې امله مونږ بعضې ارقام په پورتني CGS Statement کې د CGS د رقم په شمول نلرو. هر کله چې مونږ سره CGS رقم معلوم نه وي نو د Reverse طریقه هم کار نکوي. نوددې په خاطر مونږ د تېرو پنځو کلونو په ټول خرڅلاؤ کې د تېرو پنځو کلونو د ټولو خامو ګټو فیصدي معلوموو. د لاندې فرمول پوسیله کولای شو چې لومړی د تیرو پنځو کلونو د خامې ګټې فیصدي معلوم او بیا د موجوده کال د ټول خرڅلاؤ څخه د موجوده کال خامه ګټه تفریق کوو چې پدې وسیله مونږ د CGS رقم پیدا کوو چې بیا کولای شو د CGS Statement باقي نور ارقام پیدا کړو.

$$\text{Last 5 Years Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \text{ X } 100 = \frac{444000}{1480000} \text{ X } 100 = 30\%$$

Sales - (Gross Profit X Last 5 Years Gross Profit Ratio) = CGS
150000 - (150000 X 30%) = 105000

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Question 7, Page 59:

Gross profit determination. The Davidson Corporation manufactures a kitchen appliances to sell for 280. Last year the company sold 2000 of these appliances, realizing a gross profit of 25% of the cost of goods sold. Of this total cost of goods sold, materials accounted for 40% of the total and factory overhead for 15%.

During the coming year, it is expected that materials and labor costs will each increase 25% per unit and the factory overhead will increase 12.5% per unit. To meet these rising costs, a new sales price must be set.

Required: The number of units that must be sold to realize the same total gross profit in the coming year as realized last year if the new selling price is set at: (1) 300; (2) 325; (3) 350.

Solution:

Step 1:

Cost	**Sales**
100	125
x	280

$$x = \frac{280 \times 100}{125} = 224$$

Step 2:

Last year cost of goods sold

Materials =>	(224 x 40%) = 89.6
Labor =>	(224 x 45%) = 100.8
FoH =>	(224 x 15%) = 33.6
Total cost	**224**

Step 3:

Current year cost of goods sold

Materials =>	89.6 + (89.6 x 25%) = 112
Labor =>	100.8 + (100.8 x 25%) = 126
FoH =>	33.6 + (33.6 x 12.5%) = 37.8
Total cost	**275.8**

Step 4:

Sales		280
Less: C.G.S		-224
Gross profit		56

Total gross profit = 2000 x 56 = 112000

Step 5:

Sales - Cost = Gross profit

1). 300 - 275.8 = 24.2 => 112000/24.2 = 4628

2). 325 - 275.8 = 49.2 => 112000/49.2 = 2276

3). 350 - 275.8 = 74.2 => 112000/74.2 = 1509

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Chapter Four

Process Costing OR Cost of Production Report

دا فصل په ټوله کې د تولید اندازه او په هغې باندې د مصارفو ډیر دقیق راپورونه مونږ ته راکوي. پدې معنا د تولید پروسېس کول په مختلفو څانګو باندې ویشل کیږي او هره څانګه د یو تولید په پروسېس باندې خپل خپل کارونه ترسره کوي چې په هغې کې بیا په هره څانګه کې خپل خپل مصارف ترسره کیږي. د مثال په ډول مونږ سل عدد چوکۍ تولیدوو. اوس مونږ ددې تولید په درې څانګو کې تقسیموو لکه په اوله څانګه کې دده قطع کاري ترسره کیږي، په دوهمه څانګه کې بسته کیږي او په دریمه څانګه کې پالش کیږي، نو پدې وخت کې هره څانګه د خپل کار د ترسره کولو لپاره مصارف کوي. په لاندینۍ شپږو جدولونو کې د تولید د اندازې او مصارفو دقیق راپورونه جوړولای شو.

Department A
Quantity Schedule

Units started (produced)		10,000.00
Units completed & transferred to Dept. B	7,000.00	
Units still in process	2,000.00	
Units lost (Normal/Abnormal loss)	1,000.00	
Total	**10,000.00**	**10,000.00**

Department B
Quantity Schedule

Units received from Dept. A		7,000.00
Units completed & transferred to Dept. C	5,000.00	
Units still in process	1,500.00	
Units lost (Normal/Abnormal loss)	500.00	
Total	**7,000.00**	**7,000.00**

Department A
Cost Schedule

Cost added in Dept. A	Total cost	Per unit cost
Material		
Labor		
FoH		
Total	-	-

Department B
Cost Schedule

Cost received from Dept. A	Total cost	Per unit cost
Cost added in Dept. B		
Material		
Labor		
FoH		
Total	-	-

Department A
Cost accounted for as follows

Cost of units completed (7000x3)		21,000.00
Cost of work in process (closing inv.) Dept. A		
Material		
Labor		
FoH		
Total	-	**21,000.00**

Department B
Cost accounted for as follows

Cost of units completed (5000x3)		15,000.00
Cost of work in process (closing inv.) Dept. B		
Material		
Labor		
FoH		
Cost of work in process (closing inv.) Dept. A		
Material		
Labor		
FoH		
Total	-	**15,000.00**

Question 2, Page 136:

Costing of units transferred; lost units. Read, Inc., instituted a new process in October, during which it started 10000 units in Department A. Of the units started, 1000 units, a normal number, were lost during the process; 7000 were transferred to Department B; and 2000 remained in work in process inventory at the end of the month, 100% complete as to materials and 50% complete as to conversion cost. Materials and conversion costs of 27000 and 40000, respectively, were charged to the department in October.

Required: Total cost transferred to Department B.

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Department A
Quantity Schedule

Units started		10,000.00
Units completed & transferred to Dept. B	7,000.00	
Units still in process	2,000.00	
Units lost (Normal loss)	1,000.00	
	10,000.00	**10,000.00**

Department A
Cost Schedule

Cost added in Dept. A	Total cost	Per unit cost
Material	27,000.00	3.00
Conversion	40,000.00	5.00
Cost accounted for	**67,000.00**	**8.00**

Equivalent production method:

$$\text{Per unit material cost} = \frac{\text{Material cost}}{\text{Units completed + in process \%}} = \frac{27000}{7000 + (2000*100\%)} = 3.00$$

$$\text{Per unit conversion cost} = \frac{\text{Conversion cost}}{\text{Units completed + in process \%}} = \frac{40000}{7000 + (2000*50\%)} = 5.00$$

Department A
Cost accounted for as follows

	Total cost of units completed (7000x8)	56,000.00
	Total cost of work in process (ending inv.) Dept. A	
(2000*100%)	Material (2000*3)	6,000.00
(2000*50%)	Conversion (1000*5)	5,000.00
	Cost accounted for	**67,000.00**

Problem 6-1, Page 138:

Cost of production report; normal spoilage (loss). Malamud Company uses process costing. All materials are added at the beginning of the process. The product is inspected when it is 80% converted, and spoilage is identified only at that point. Normal spoilage is expected to be 5% of good output (completed & in process materials).

During March, 10500 units were put into process. Current costs were 52500 for materials; 39770 for labor; and 31525 for factory overhead. The 3000 units still in process at the end of March were estimated to be 90% completed. All spoilage was normal. A total of 7000 units were transferred to finished goods.

Required: A cost of production report for March.

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Department A
Quantity Schedule

Units started		10,500.00
Units completed & transferred to Dept. B	7,000.00	
Units still in process	3,000.00	
Units lost (Normal loss) (100*5%)	500.00	
	10,500.00	**10,500.00**

Department A
Cost Schedule

Cost added in Dept. A	Total cost	Per unit cost
Material	52,500.00	5.25
Labor	39,770.00	4.10
FoH	31,525.00	3.25
Cost accounted for	**123,795.00**	**12.60**

Equivalent production method:

$$\text{Per unit material cost} = \frac{\text{Material cost}}{\text{Units completed + in process \%}} = \frac{52500}{7000 + (3000*100\%)} = 5.25$$

$$\text{Per unit labor cost} = \frac{\text{Labor cost}}{\text{Units completed + in process \%}} = \frac{39770}{7000 + (3000*90\%)} = 4.10$$

$$\text{Per unit FoH cost} = \frac{\text{FoH cost}}{\text{Units completed + in process \%}} = \frac{31525}{7000 + (3000*90\%)} = 3.25$$

Department A
Cost accounted for as follows

	Total cost of units completed (7000x12.6)	88,200.00
	Total cost of work in process (ending inv.) Dept. A	
(3000*100%)	Material (3000*5.25)	15,750.00
(3000*90%)	Labor (2700*4.1)	11,070.00
(3000*90%)	FoH (2700*3.25)	8,775.00
	Cost accounted for	**123,795.00**

Question 1, Page 136:

Cost of production report. A company's Department 2 costs for June were:

Cost from Department 1 ……	16,320.00
Cost added in Deparment 2:	
Materials ……	43,415.00
Labor ……	56,100.00
Factory overhead ……	58,575.00

The quantity schedule shows 12000 units were received during the month from Department 1; 7000 units were transferred to finished goods; and 5000 units in process at the end of June were 50% completed as to materials cost and 25% completed as to conversion cost.

Required: Cost of production report.

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Department 2
Quantity Schedule

Units received from Dept. 1		12,000.00
Units completed & transferred to finished goods	7,000.00	
Units still in process	5,000.00	
	12,000.00	**12,000.00**

Department 2
Cost Schedule

	Total cost	Per unit cost
Cost received from Dept. 1 (16320/12000)	16,320.00	1.36
Cost added in Dept. 2		
Material	43,415.00	4.57
Labor	56,100.00	6.80
FoH	58,575.00	7.10
Cost accounted for	**174,410.00**	**19.83**

Equivalent production method:

$$\text{Per unit material cost} = \frac{\text{Material cost}}{\text{Units completed + in process \%}} = \frac{43415}{7000 + (5000*50\%)} = 4.57$$

$$\text{Per unit labor cost} = \frac{\text{Labor cost}}{\text{Units completed + in process \%}} = \frac{56100}{7000 + (5000*25\%)} = 6.80$$

$$\text{Per unit FoH cost} = \frac{\text{FoH cost}}{\text{Units completed + in process \%}} = \frac{58575}{7000 + (5000*25\%)} = 7.10$$

Department 2
Cost accounted for as follows

	Total cost of units completed (7000x19.83)	138,810.00
	Total cost of work in process (ending inv.) Dept. 1	
	(5000*1.36)	6,800.00
	Total cost of work in process (ending inv.) Dept. 2	
(5000*50%)	Material (2500*4.57)	11,425.00
(5000*25%)	Labor (1250*6.8)	8,500.00
(5000*25%)	FoH (1250*7.1)	8,875.00
	Cost accounted for	**174,410.00**

Question 4, Page 137:

Cost of production report. Brooks, Inc., uses process costing. The costs for Department 2 for April were:

Cost from preceding department	20,000.00	
Cost added by deparment:		
Materials	21,816.00	
Labor	7,776.00	
Factory overhead	4,104.00	33,696.00

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The following information was obtained from the department's quantity schedule:

Units received	5,000.00
Units transferred out	4,000.00
Units still in process	1,000.00

The degree of completion of the work in process as to costs originating in Department 2 was: 50% of the units were 40% complete; 20% were 30% complete; and the balance were 20% complete.

Required: The cost of production report for Department 2 for April.

Department 2
Quantity Schedule

Units received from Dept. 1		5,000.00
Units completed & transferred to Dept. 3	4,000.00	
Units still in process	1,000.00	
	5,000.00	**5,000.00**

Department 2
Cost Schedule

	Total cost	Per unit cost
Cost received from Dept. 1 (20000/5000)	20,000.00	4.00
Cost added in Dept. 2		
Material	21,816.00	5.05
Labor	7,776.00	1.80
FoH	4,104.00	0.95
Cost accounted for	**53,696.00**	**11.80**

Equivalent production method:

$$\text{Per unit material cost} = \frac{\text{Material cost}}{\text{Units completed + in process \%}} = \frac{21816}{4000+(500*40\%)+(200*30\%)+(300*20\%)} = 5.05$$

(1000*50%=500), (1000*20%=200), (1000*30%=300)

$$\text{Per unit labor cost} = \frac{\text{Labor cost}}{\text{Units completed + in process \%}} = \frac{7776}{4000+(500*40\%)+(200*30\%)+(300*20\%)} = 1.80$$

(1000*50%=500), (1000*20%=200), (1000*30%=300)

$$\text{Per unit FoH cost} = \frac{\text{FoH cost}}{\text{Units completed + in process \%}} = \frac{4104}{4000+(500*40\%)+(200*30\%)+(300*20\%)} = 0.95$$

(1000*50%=500), (1000*20%=200), (1000*30%=300)

Department 2
Cost accounted for as follows

	Total cost of units completed (4000x11.80)	47,200.00
	Total cost of work in process (ending inv.) Dept. 1	
	(1000*4.00)	4,000.00
	Total cost of work in process (ending inv.) Dept. 2	
(500*40%) +	Material (320*5.05)	1,616.00
(200*30%) +	Labor (320*1.80)	576.00
(300*20%)	FoH (320*0.95)	304.00
	Cost accounted for	**53,696.00**

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Question 5, Page 137:

Equivalent production. During April, 20000 units were transferred in from Department A at a cost of 39000. Materials cost of 6500 and conversion cost of 9000 were added in Department B. on April 30, Department B had 5000 units of work in process 60% complete as to conversion costs. Materials are added in the beginning of the process in Department B.

Required:

(1) Equivalent production computations.

(2) The cost per equivalent unit for conversion costs.

Department B
Cost Schedule

	Total cost	Per unit cost
Cost received from Dept. A (20000x1.950)	39,000.00	1.950
Cost added in Dept. B		
Material	6,500.00	0.325
Conversion	9,000.00	0.500
Cost accounted for	**54,500.00**	**2.775**

Equivalent production method:

$$\text{Per unit material cost} = \frac{\text{Material cost}}{\text{Units completed + in process \%}} = \frac{6500}{15000 + (5000*100\%)} = 0.325$$

$$\text{Per unit conversion cost} = \frac{\text{Conversion cost}}{\text{Units completed + in process \%}} = \frac{9000}{15000 + (5000*60\%)} = 0.500$$

Department B
Cost accounted for as follows

	Total cost of units completed (15000x2.775)	41,625.00
	Total cost of work in process (ending inv.) Dept. B	
(5000*100%)	Material (5000*0.325)	1,625.00
(5000*60%)	Conversion (3000*0.50)	1,500.00
	Total cost of work in process (ending inv.) Dept. A (5000*1.95)	9,750.00
	Cost accounted for	**54,500.00**

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Question 3, Page 136:

Cost of production report; normal loss. For December, the Production Control Department of Carola Chemical, Inc., reported the following production data for Department 2:

Transferred in from Department 1	55,000.00	litters
Transferred out to Department 3	39,500.00	litters
In process at the end of December (with 1/2 labor and factory overhead)	10,500.00	litters

All materials were put into process in Department 1.
The Cost Department collected these figures for Department 2:

Unit cost for units transferred in from Department 1	1.80
Labor cost in Department 2	27,520.00
Applied factory overhead	15,480.00

Required: A cost of production report for Department 2 for December.

Department 2
Quantity Schedule

Liters received from Dept. 1		55,000.00
Liters completed & transferred to Dept. 3	39,500.00	
Liters still in process	10,500.00	
Liters lost (Normal loss)	5,000.00	
	55,000.00	**55,000.00**

Department 2
Cost Schedule

	Total cost	Per liter cost
Cost received from Dept. 1 (55000*1.80)	99,000.00	1.80
Cost added in Dept. 2		
Labor	27,520.00	0.64
FoH	15,480.00	0.36
Per unit cost increased (99000/50000)-(99000/55000)		0.18
Cost accounted for	**142,000.00**	**2.98**

Equivalent production method:

$$\text{Per unit labor cost} = \frac{\text{Labor cost}}{\text{Units completed + in process \%}} = \frac{27520}{39500 + (10500*1/3)} = 0.64$$

$$\text{Per unit FoH cost} = \frac{\text{FoH cost}}{\text{Units completed + in process \%}} = \frac{15480}{39500 + (10500*1/3)} = 0.36$$

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Department 2
Cost accounted for as follows

	Total cost of units completed (39500x2.98)	117,710.00
	Total cost of work in process (ending inv.) Dept. 1 (10500*1.98)	20,790.00
	Total cost of work in process (ending inv.) Dept. 2	
(10500*1/3)	Labor (3500*0.64)	2,240.00
(10500*1/3)	FoH (3500*0.36)	1,260.00
	Cost accounted for	**142,000.00**

Question 6, Page 137:

Cost of units transferred out; abnormal loss. During February, the Assembly Department received 60000 units from the Cutting Department at a unit cost of 3.54. Costs added in the Assembly Department were: materials, 41650; labor 101700; and factory overhead, 56500. There was no beginning inventory. Of the 60000 units received, 50000 were transferred out; 9000 units were in process at the end of the month (all materials, 2/3 converted); 1000 lost units were ½ complete as to materials and conversion costs. The entire loss is considered abnormal and is to be charged to factor overhead.

Required: Cost of production report.

Assembly Department
Quantity Schedule

Units received from Cutting Department		60,000.00
Units completed & transferred out	50,000.00	
Units still in process	9,000.00	
Units lost (Abnormal loss)	1,000.00	
	60,000.00	**60,000.00**

Assembly Department
Cost Schedule

	Total cost	Per liter cost
Cost received from Cutting Department (60000/3.54)	212,400.00	3.54
Cost added in Assembly Department		
Material	41,650.00	0.70
Labor	101,700.00	1.80
FoH	56,500.00	1.00
Cost accounted for	**412,250.00**	**7.04**

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Equivalent production method:

$$\text{Per unit material cost} = \frac{\text{Material cost}}{\text{Units completed + in process \% + Abnormal loss \%}} = \frac{41650}{50000+(9000*100\%)+(1000*1/2)} = 0.70$$

$$\text{Per unit labor cost} = \frac{\text{Labor cost}}{\text{Units completed + in process \% + Abnormal loss \%}} = \frac{101700}{50000+(9000*2/3)+(1000*1/2)} = 1.80$$

$$\text{Per unit FoH cost} = \frac{\text{FoH cost}}{\text{Units completed + in process \% + Abnormal loss \%}} = \frac{56500}{50000+(9000*2/3)+(1000*1/2)} = 1.00$$

Assembly Department
Cost accounted for as follows

	Total cost of units completed (50000x7.04)	352,000.00
	Total cost of work in process (ending inv.) Assembly Department	
(9000*100%)	Material (9000*0.70)	6,300.00
(9000*2/3)	Labor (6000*1.80)	10,800.00
(9000*2/3)	FoH (6000*1)	6,000.00
	Total cost of work in process (ending inv.) Cutting Department (9000*3.54)	31,860.00
	Abnormal loss added to FoH cost Assembly Department	
(1000*1/2)	Material (500*0.7)	350.00
(1000*1/2)	Labor (500*1.80)	900.00
(1000*1/2)	FoH (500*1)	500.00
	Abnormal loss added to FoH cost Cutting Department (1000*3.54)	3,540.00
	Cost accounted for	**412,250.00**

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Chapter Five

Controlling and Costing Materials

پدې فصل کې مونږ دا معلوموو چې په خامو موادو باندې څومره مصارف راغلي او د هغې کنټرول کوو. کله چې خام مواد کارخانې ته راوړل کیږي نو هغه مواد په Store Room کې زخیره کیږي چې په Store Room کې ددې د راتګ او وتلو ریکارډ د ثبتولو مسؤلیت د Store Keeper په غاړه وي. ددې ریکارډ د ساتلو او ثبتولو لپاره مونږ لاندې فارمټ او جدول استعمالوو.

ABC Company
Material Ledger Card (Bin Card)
For The Month of Jan 2017

Date	Description	Purchases			Issues			Balance		
		Quantity	Rate	Amount	Quantity	Rate	Amount	Quantity	Rate	Amount
				-			-			-
				-			-			-
				-			-			-
				-			-			-
				-			-			-
Total		-		-	-		-	-		-

Four methods for data entry in Material Ledger Card:

1. **FIFO (First In, First Out) Method:** پدې طریقه کې مونږ کوم خام مواد چې په لومړي ځل Store Room ته راوړل شوي وي هغه لومړی Production Department ته لیږو او ددې په اساس په تولید باندې راغلي مصارف معلوموو.
2. **LIFO (Last In, First Out) Method:** پدې طریقه کې مونږ کوم خام مواد چې په اخیر ځل Store Room ته راوړل شوي وي هغه لومړی Production Department ته لیږو او ددې په اساس په تولید باندې راغلي مصارف معلوموو.
3. **Average Method:** پدې طریقه کې مونږ د دواړو اول او اخیر Store Room ته راوړل شویو خامو موادو د قیمتونو اوسط اخلو او بیا ددې په اساس په تولید باندې راغلي مصارف معلوموو.
4. **Most Recent Purchase Price:** پدې طریقه کې چې مونږ کوم خام مواد د اخیر ځل لپاره په کوم قیمت اخیستې وي د همدې قیمت په اساس په تولید باندې راغلي مصارف معلوموو.

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Question 1, Page 340:

Materials costing methods. The Meltzer Company made the following materials purchases and issues during January:

Inventory:	January 01.	500 units @ 1.20
Receipts:	January 06.	200 units @ 1.25
	January 10.	400 units @ 1.30
	January 25.	500 units @ 1.40
Issues:	January 15.	560 units
	January 27.	500 units

Required:

The cost of materials consumed and the cost of assigned to the inventory at the end of the month. Using a perpetual inventory system and:

(1) Average costing, rounding unit costs to the nearest cent.

(2) Fifo costing.

(3) Lifo costing.

1. Fifo costing method:

Meltzer Company
Material Ledger Card
For The Month of Jan 2017

Date	Description	Purchases			Issues			Balance		
		Quantity	Rate	Amount	Quantity	Rate	Amount	Quantity	Rate	Amount
1-Jan	Balance			-			-	500.00	1.20	600.00
6-Jan	Purchases	200.00	1.25	250.00			-	500.00	1.20	600.00
				-			-	200.00	1.25	250.00
10-Jan	Purchases	400.00	1.30	520.00			-	500.00	1.20	600.00
				-			-	200.00	1.25	250.00
				-			-	400.00	1.30	520.00
15-Jan	Issues			-	500.00	1.20	600.00	140.00	1.25	175.00
				-	60.00	1.25	75.00	400.00	1.30	520.00
25-Jan	Purchases	500.00	1.40	700.00			-	140.00	1.25	175.00
				-			-	400.00	1.30	520.00
				-			-	500.00	1.40	700.00
27-Jan	Issues			-	140.00	1.25	175.00	40.00	1.30	52.00
				-	360.00	1.30	468.00	500.00	1.40	700.00
Total		**1,100.00**		**1,470.00**	**1,060.00**		**1,318.00**	**540.00**		**752.00**

Materials consumed: **1,318.00**

Inventory cost: **752.00**

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2. Lifo costing method:

Meltzer Company
Material Ledger Card
For The Month of Jan 2017

Date	Description	Purchases			Issues			Balance		
		Quantity	Rate	Amount	Quantity	Rate	Amount	Quantity	Rate	Amount
1-Jan	Balance			-			-	500.00	1.20	600.00
6-Jan	Purchases	200.00	1.25	250.00			-	500.00	1.20	600.00
				-			-	200.00	1.25	250.00
10-Jan	Purchases	400.00	1.30	520.00			-	500.00	1.20	600.00
				-			-	200.00	1.25	250.00
				-			-	400.00	1.30	520.00
15-Jan	Issues			-	400.00	1.30	520.00	500.00	1.20	600.00
				-	160.00	1.25	200.00	40.00	1.25	50.00
25-Jan	Purchases	500.00	1.40	700.00			-	500.00	1.20	600.00
				-			-	40.00	1.25	50.00
				-			-	500.00	1.40	700.00
27-Jan	Issues			-	500.00	1.40	700.00	500.00	1.20	600.00
				-			-	40.00	1.25	50.00
Total		**1,100.00**		**1,470.00**	**1,060.00**		**1,420.00**	**540.00**		**650.00**

Materials consumed: **1,420.00**
Inventory cost: **650.00**

Question 2, Page 340:

Materials costing methods. The following information is to be used in costing inventory on October 31:

October 1. Beginning balance: 800 units @ 6
October 5. Purchased 200 units @ 7
October 9. Purchased 200 units @ 8
October 16. Issued 400 units
October 24. Purchased 300 units @ 9
October 27. Issued 500 units

Required: The cost of materials used and the cost assigned to the October 31 inventory by each of these perpetual inventory costing methods:

(1) First-in, first-out.
(2) Last-in, first-out.
(3) Average, using a materials ledger card and rounding unit costs to the nearest cent.
(4) Most recent purchase price.

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1. First-in, first-out costing method:

Mohammad Usman Company
Material Ledger Card
For The Month of October 2017

Date	Description	Purchases			Issues			Balance		
		Quantity	Rate	Amount	Quantity	Rate	Amount	Quantity	Rate	Amount
1-Oct	Beginning balance			-			-	800.00	6.00	4,800.00
5-Oct	Purchases	200.00	7.00	1,400.00			-	800.00	6.00	4,800.00
				-			-	200.00	7.00	1,400.00
9-Oct	Purchases	200.00	8.00	1,600.00			-	800.00	6.00	4,800.00
				-			-	200.00	7.00	1,400.00
				-			-	200.00	8.00	1,600.00
16-Oct	Issues			-	400.00	6.00	2,400.00	400.00	6.00	2,400.00
				-			-	200.00	7.00	1,400.00
				-			-	200.00	8.00	1,600.00
24-Oct	Purchases	300.00	9.00	2,700.00			-	400.00	6.00	2,400.00
				-			-	200.00	7.00	1,400.00
				-			-	200.00	8.00	1,600.00
				-			-	300.00	9.00	2,700.00
27-Oct	Issues			-	400.00	6.00	2,400.00	100.00	7.00	700.00
				-	100.00	7.00	700.00	200.00	8.00	1,600.00
				-			-	300.00	9.00	2,700.00
				-			-			-
Total		**700.00**		**5,700.00**	**900.00**		**5,500.00**	**600.00**		**5,000.00**

Materials used: **5,500.00**
Inventory cost: **5,000.00**

2. Last-in, first-out costing method:

Mohammad Usman Company
Material Ledger Card
For The Month of October 2017

Date	Description	Purchases			Issues			Balance		
		Quantity	Rate	Amount	Quantity	Rate	Amount	Quantity	Rate	Amount
1-Oct	Beginning balance			-			-	800.00	6.00	4,800.00
5-Oct	Purchases	200.00	7.00	1,400.00			-	800.00	6.00	4,800.00
				-			-	200.00	7.00	1,400.00
9-Oct	Purchases	200.00	8.00	1,600.00			-	800.00	6.00	4,800.00
				-			-	200.00	7.00	1,400.00
				-			-	200.00	8.00	1,600.00
16-Oct	Issues			-	200.00	8.00	1,600.00	800.00	6.00	4,800.00
				-	200.00	7.00	1,400.00			-
24-Oct	Purchases	300.00	9.00	2,700.00			-	800.00	6.00	4,800.00
				-			-	300.00	9.00	2,700.00
27-Oct	Issues			-	300.00	9.00	2,700.00	600.00	6.00	3,600.00
				-	200.00	6.00	1,200.00			-
				-			-			-
Total		**700.00**		**5,700.00**	**900.00**		**6,900.00**	**600.00**		**3,600.00**

Materials used: **6,900.00**
Inventory cost: **3,600.00**

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3. Average, using a materials ledger card and rounding unit costs to the nearest cent:

Mohammad Usman Company
Material Ledger Card
For The Month of October 2017

Date	Description	Purchases			Issues			Balance		
		Quantity	Rate	Amount	Quantity	Rate	Amount	Quantity	Rate	Amount
1-Oct	Beginning inventory			-			-	800.00	6.00	4,800.00
5-Oct	Purchases	200.00	7.00	1,400.00			-	1,000.00	6.20	6,200.00
9-Oct	Purchases	200.00	8.00	1,600.00			-	1,200.00	6.50	7,800.00
16-Oct	Issues			-	400.00	6.50	2,600.00	800.00	6.50	5,200.00
24-Oct	Purchases	300.00	9.00	2,700.00			-	1,100.00	7.18	7,900.00
27-Oct	Issues			-	500.00	7.18	3,590.91	600.00	7.18	4,309.09
Total		**700.00**		**5,700.00**	**900.00**		**6,190.91**	**600.00**		**4,309.09**

Materials used: **6,190.91**
Inventory cost: **4,309.09**

Note: Computation formulas for average method:

1. When purchases occur, the formulas are:
   Average Quantity = Balance Quantity + Purchases Quantity
   Average Amount = Balance Amount + Purchases Amount
   Average Rate = Balance Amount / Balance Quantity

2. When Issues occur, the formulas are:
   Average Quantity = Balance Quantity – Issues Quantity
   Average Rate = Issues Amount / Issues Quantity
   *Average Amount = Balance Quantity * Balance Rate*

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4. Most recent purchase price:

Mohammad Usman Company
Material Ledger Card
For The Month of October 2017

Date	Description	Purchases			Issues			Balance		
		Quantity	Rate	Amount	Quantity	Rate	Amount	Quantity	Rate	Amount
1-Oct	Beginning inventory			-			-	800.00	6.00	4,800.00
5-Oct	Purchases	200.00	7.00	1,400.00			-	1,000.00	7.00	7,000.00
9-Oct	Purchases	200.00	8.00	1,600.00			-	1,200.00	8.00	9,600.00
16-Oct	Issues			-	400.00	8.00	3,200.00	800.00	8.00	6,400.00
24-Oct	Purchases	300.00	9.00	2,700.00			-	1,100.00	9.00	9,900.00
27-Oct	Issues			-	500.00	9.00	4,500.00	600.00	9.00	5,400.00
Total		**700.00**		**5,700.00**	**900.00**		**7,700.00**	**600.00**		**5,400.00**

Materials used: **7,700.00**
Inventory cost: **5,400.00**

Note: Computation formulas for most recent purchase price method:

1. When purchases occur, the formulas are:
   Balance Quantity = Previous Balance Quantity + Purchases Quantity
   Balance Rate = Purchases Rate
   *Balance Amount = Balance Quantity * Balance Rate*

2. When Issues occur, the formulas are:
   Balance Quantity = Previous Balance Quantity – Issues Quantity
   Balance Rate = Issues Rate
   *Balance Amount = Balance Quantity * Balance Rate*

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Chapter Six

Joint Cost Allocation

Joint Product: کله چې د یو قسمه خامو موادو نه مختلف قسمه تولیدات تولیدیږي، نو دغه خامو موادو ته Joint Product ویل کیږي.

Joint Cost: کله چې مختلف تولیدات د یو قسمه خامو موادو نه تولیدیږي، نو څرنګه چې ددې مختلفو تولیداتو د تولید کېدو لپاره لومړنی کوم پروسس چې ترسره کیږي او په هغې باندې چې څومره مصارف ترسره کیږي دغې مصارفو ته Joint Costوایي.

By Product: کله چې مختلف تولیدات د یو قسمه خامو موادو نه تولیدیږي، خو کله چې یو بل غیر متوقع تولید د اصلي تولیداتو د تولید کېدو د پروسس په پایله چې لاسته راځي هغې ته By Productویل کیږي.

By Cost: کله چې مختلف تولیدات د یو قسمه خامو موادو نه تولیدیږي، خو کله چې یو بل غیر متوقع تولید د اصلي تولیداتو د تولید کېدو د پروسس په پایله چې لاسته راځي او په هغې باندې چې کوم مصارف ترسره کیږي هغې ته By Costویل کیږي.

د مثال په ډول: کله چې یو تولیدونکی د شیدو څخه مختلف تولیدات جوړوي؛ لومړی یې د ټولو تولیداتو د تولید کولو په موخه په اوله مرحله کې ګرموي او بیا ترې د هر تولید ځانګو ته خپل خپل برخه خام مواد یعنې شیدې لیږي. کله چې خام مواد په اوله مرحله کې د نورو تولیداتو د تولید کولو په موخه ګرمیږي پدې باندې مختلف مصارف ترسره کیږي، کله د مذدور مصرف، د برق مصرف، او داسې نور چې دغه مصارفو ته Joint Costوایي. خو کله چې مثلاً کچ تولیدیږي نو د کچ د لاسته راوړلو په پایله کې په غیر متوقع ډول سره شوملې هم حاصلیږي او پدې باندې چې بیا کوم مصارف ترسره کیږي هغې ته By Costوایي.

Market Value Method
Joint Cost _____

Products	Units Produced	Per Unit Sale Price	Total Market Value	Joint Cost Allocation

$$Joint\ Cost\ Allocation = \frac{Joint\ Cost}{Total\ Market\ Value}\ X\ Each\ Market\ Value$$

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Weighted Average Method
Joint Cost _____

Products	Units Produced	Per Unit Weight	Total Weight	Joint Cost Allocation

$$Joint\ Cost\ Allocation = \frac{Joint\ Cost}{Total\ Weight}\ X\ Each\ Weight$$

Question 5, Page 197:

Joint cost allocation – market value and weighted average methods. The Buildon Company products three joint products: Buildon, Buildeze, and Buildrite. Total joint production cost for November was 21600.

The units produced and unit sales prices at the split-off point were:

PRODUCT	UNITS	UNIT SALES PRICE
Buildon	6,000.00	2.20
Buildeze	8,000.00	1.25
Buildrite	10,000.00	1.28

In determining costs by the weighted average method, each unit is weighted as follows:

PRODUCT	PER UNIT WEIGHTING
Buildon	6
Buildeze	4
Buildrite	4

Required: Allocation of the production cost, using:

(1) The market value method.

(2) The weighted average method.

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Market Value Method

Joint Cost 21,600.00

Products	Units Produced	Per Unit Sale Price	Total Market Value	Joint Cost Allocation
Buildon	6,000.00	2.20	13,200.00	7,920.00
Buildeze	8,000.00	1.25	10,000.00	6,000.00
Buildrite	10,000.00	1.28	12,800.00	7,680.00
Total			**36,000.00**	**21,600.00**

Weighted Average Method

Joint Cost 21,600.00

Products	Units Produced	Per Unit Weight	Total Weight	Joint Cost Allocation
Buildon	6,000.00	6.00	36,000.00	7,200.00
Buildeze	8,000.00	4.00	32,000.00	6,400.00
Buildrite	10,000.00	4.00	40,000.00	8,000.00
Total			**108,000.00**	**21,600.00**

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Question 6, Page 197:

Cost allocation – weighted average method. A department's equivalent production schedules show 10000 units of Article X and 8000 units of Article Y. Both articles are made from the same raw materials, but a unit of Article X and Article Y require estimated quantities of materials in the ratio of 3:2, respectively. Both articles pass through the same conversion process, but Article X and Article Y require estimated production times per unit in the ratio of 5:4, respectively.

Required: A computation of the unit materials and conversion costs for each product if the total costs are: materials, 92000; conversion cost, 41000.

Weighted Average Method
Material (Joint Cost) 92,000.00

Products	Units Produced	Per Unit Weight	Total Weight	Joint Cost Allocation
X	10,000.00	3.00	30,000.00	60,000.00
Y	8,000.00	2.00	16,000.00	32,000.00
Total			**46,000.00**	**92,000.00**

Weighted Average Method
Conversion (Joint Cost) 41,000.00

Products	Units Produced	Per Unit Time Consumed	Total Time Consumed	Joint Cost Allocation
X	10,000.00	5.00	50,000.00	25,000.00
Y	8,000.00	4.00	32,000.00	16,000.00
Total			**82,000.00**	**41,000.00**

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Question 9, Page 198:

Joint cost allocation using market value method; sell or process further. The Domecq Company produces three products, A, B, and C, as the result of initial joint processing plus separable processing after the split-off point. Records for July show the following:

	A	B	C	Total
Materials used ……	-	-	-	150,000.00
Joint processing cost ……	-	-	-	170,000.00
Separable processing costs ……	50,000.00	80,000.00	70,000.00	
Units produced ……	6,000.00	12,000.00	6,250.00	
Units sold ……	4,000.00	9,000.00	4,250.00	
Unit sales price ……	50.00	37.50	40.00	

Required:

(1) The cost assigned to ending inventory for each product and in total, assuming no beginning inventory and using the market value method for joint cost allocation. In completing this requirement, disregard the information given in requirement (2).

(2) The difference in operating profit if Domecq accepts an offer from a prospective customer who would be willing to buy all the output of Product B at the split-off point for 30 per unit.

Market Value Method

Joint Cost 320,000.00

Products	Units Produced	Per Unit Sale Price	Total Market Value	Separable Cost	Market Value Split-off Point	Joint Cost Allocation	Total Cost	Ending Inventory Cost
A	6,000.00	50.00	300,000.00	50,000.00	250,000.00	100,000.00	150,000.00	50,000.00
B	12,000.00	37.50	450,000.00	80,000.00	370,000.00	148,000.00	228,000.00	57,000.00
C	6,250.00	40.00	250,000.00	70,000.00	180,000.00	72,000.00	142,000.00	45,440.00
Total					**800,000.00**	**320,000.00**		

Formulas Used in Above Table:

$$\textbf{Joint Cost Allocation} = \frac{\textbf{Joint Cost}}{\textbf{Total Market Value Split} - \textbf{off Point}} \textbf{ X Each Market Value Split} - \textbf{off Point}$$

$$\textbf{Ending Inventory} = \textbf{ Units Produced} - \textbf{Units Sold}$$

$$\textbf{Per Unit Ending Inventory Cost} = \frac{\textbf{Each Total Cost}}{\textbf{Units Produced}} \textbf{ X Ending Inventory}$$

«««« END »»»»

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