

①

Cost Sheet

Particular	₹
Raw Material Consumed	
Op. Stk of RM	xx
(+) Purchase	xx
(-) Scrap	(xx)
(+) Carriage Inward	xx
(-) Closing Stk	(xx)
(-) Purchase Return	(xx)
	<u>xxx</u>
Direct labour	xx
Direct Expense	xx
Prime Cost	<u>xxx</u>
Fac Overhead	xx
Gross Works Cost	<u>xxx</u>
(+) Op WIP	xx
(-) CL WIP	(xx)
Factory Cost	<u>xxx</u>
Quality Control Cost	xx
R & D Cost	xx
Admin OH (RTP)	xx
less Scrap / By Product	(xx)
Add Packing Expenses	xx
Cost of Production	<u>xxx</u>
(+) OP Stk of FG	xx
(-) CL Stk of F.G	(xx)
Cost of Goods sold	<u>xxx</u>
(+) Admin OH (General)	xx
(+) S & D OH	xx
Cost of Sales	<u>xxx</u>
(+) Profit	xx
Sales	<u>xxx</u>

Material Costing

A = No of unit of RM to be purchased in 1 year

Q = No of unit of RM to be purchased at 1 time

CPU = Cost Per unit of RM

Ca = Total Ordering Cost p.a

$$Tca = \frac{A}{Q} \times Ca \quad (TCA \downarrow Q \uparrow)$$

$$Ci = \text{Carrying cost per unit p.a} \\ = CPU \times I$$

$$Tci = \frac{Q}{2} \times Ci \quad (TCI \downarrow Q \downarrow)$$

$$T = Tca + Tci$$

$$= \frac{A}{Q} \times Ca + \frac{Q}{2} \times Ci$$

$$EOQ = \sqrt{\frac{2ACa}{Ci}}$$

$$T(\text{at EOQ}) = \sqrt{2ACa \times Ci}$$

$$\text{Re-order level (ROL)} = \left(\frac{\text{max}}{\text{con}} \times \frac{\text{max}}{\text{LT}} \right) + (\text{Buffer stock})$$

$$\text{Maximum Stk} = \text{ROL} - \left(\frac{\text{min}}{\text{con}} \times \frac{\text{min}}{\text{LT}} \right) + \text{ROQ}$$

ROQ = Re-Order Quantity

$$\text{Minimum Stk} = \text{ROL} - \left(\frac{\text{Avg}}{\text{con}} \times \frac{\text{Avg}}{\text{LT}} \right)$$

$$\text{Avg Stk} = \frac{\text{Min} + \text{Max}}{2}$$

$$\text{Danger level} = \text{Avg con} \times \text{LTM}$$

$$\text{Max con} = \text{Normal ROL} + \text{Safety Stk} + \text{Buffer} \\ = \text{Avg con} \times \text{Avg L.T} + \text{S.S}$$

$$\text{Rate for SLI} = \frac{\text{Total Purchase Cost}}{\text{Qty Available for con}} \\ \left\{ \begin{array}{l} \text{Qty Purchased} - \text{Normal Losses} \end{array} \right\}$$

$$EBQ = \sqrt{\frac{2ACa}{Ca}} \text{ for Finished Goods}$$

Employee Costing

Bonus - Halsey = 50% of T.S x R.P.H

Rowan = $\frac{T.S}{T.A} \times B.W$

Days Wage = R.P.H x T.T

Piece rate = R.P.U x Unit Produced.

Time taken = $\frac{\text{Unit Produced}}{\text{Standard Unit}}$

Seperation Method = $\frac{\text{No of worker Sep}}{\text{Avg no of worker}} \times 100$

Replacement Method = $\frac{\text{No of worker Rep}}{\text{Avg no of worker}} \times 100$

Flux Method =

(a) = $\frac{\text{No of worker Sep + Rep}}{\text{Avg no of worker}} \times 100$

(b) = $\frac{\text{No of worker Sep + (Rep + Hired)}}{\text{Avg no of worker}} \times 100$

★ (Accession / Recruitment / Joining)

Equivalent Annual Employee T/O Rate.

= $\frac{\text{Employee T/O rate for period}}{\text{No of days in Period}} \times 365$

★ Job Card / labour hr rate

= $\frac{C \text{ to } L}{\text{Expected labour hours}}$

(Excluding normal Idle time.)

Allocation of labour cost = Hrs Worked x labour per hour

★ Percentage Method.

Allocation of labour cost = labour cost x respective %

Treatment of Overtime Premium

Regular

Due to worker Shortage



Charged at inflated Wage rate

Irregular

Due to Normal increase in demand



Normal



OT Prem is treated as Fac O.H

Due to factor Beyond control



Abnormal



OT Prem is treated as loss & charged to Costing P&L

Customer



Should be charged to Customer

Service Costing

Particular	₹
1] Fixed Cost (Pm/Pa)	xx
2] Variable Cost (Per Km)	xx
Total	xxx
÷ No of unit of Service	xx
Cost P.U of Service	xx
+ Profit per unit of Service	xx
Fees / Fax Charge for service	xx

• Built operate Transfer approach

• Two Mistakes

Calculate Cost for respective Period
Calculate Cost for Entire Company

• Objective

Calculate CPU of service.

Calculate Fees / Fax charge P.U of service.

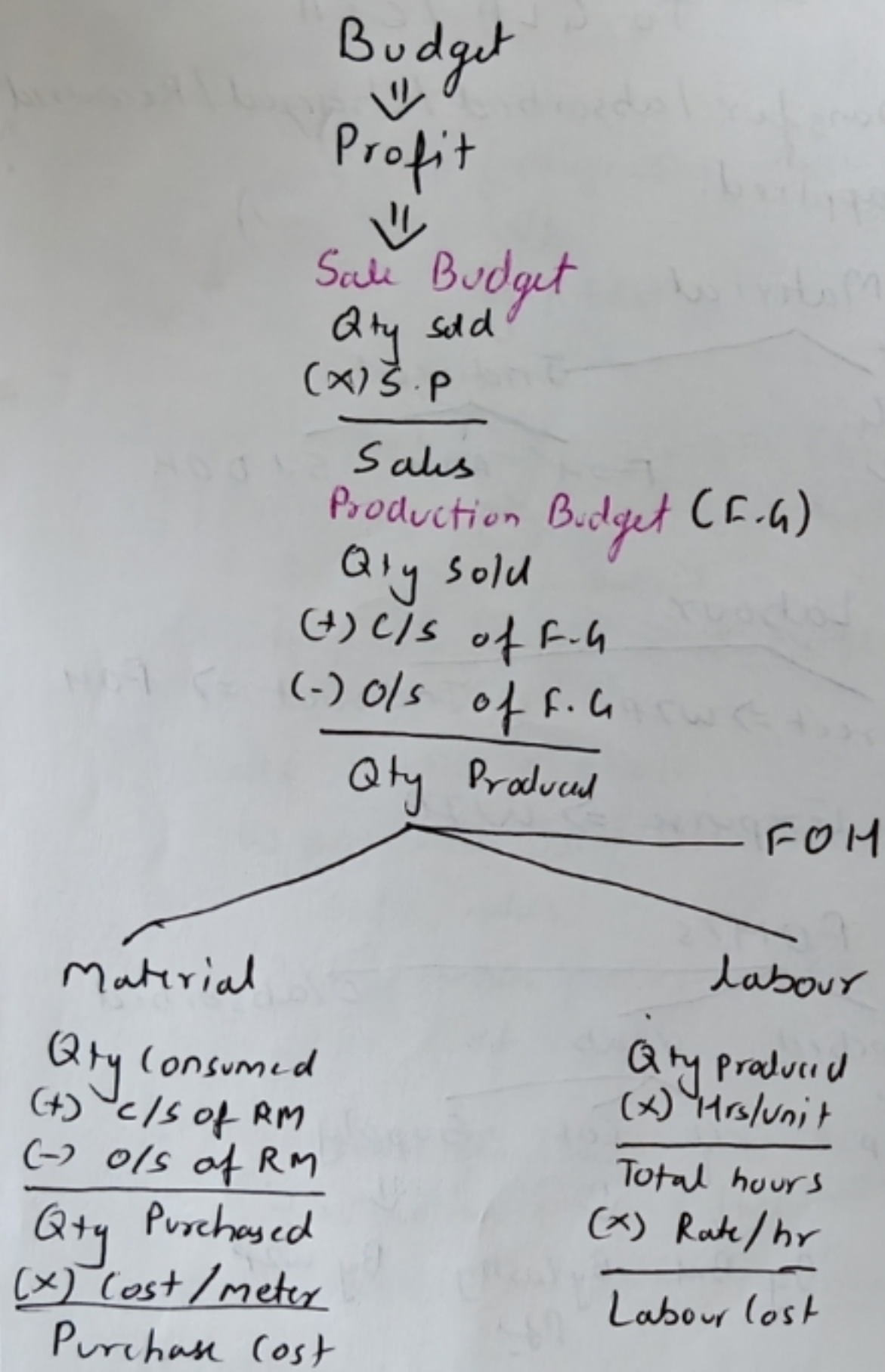
(Draw Diagram if needed)

Budget & Budgetary Control

• Never use Actual data to verify nature of expense.

• $VCPV = \frac{\Delta / \text{diff in Total Cost}}{\Delta / \text{diff in Unit}}$

• $TC = V.C + F.C$



• Efficiency Ratio = $\frac{\text{Std time}}{\text{Actual time}} \times 100$

Activity Based Costing

Step 1: Identify type of Activity

Step 2: Identify / Compute cost of each activity

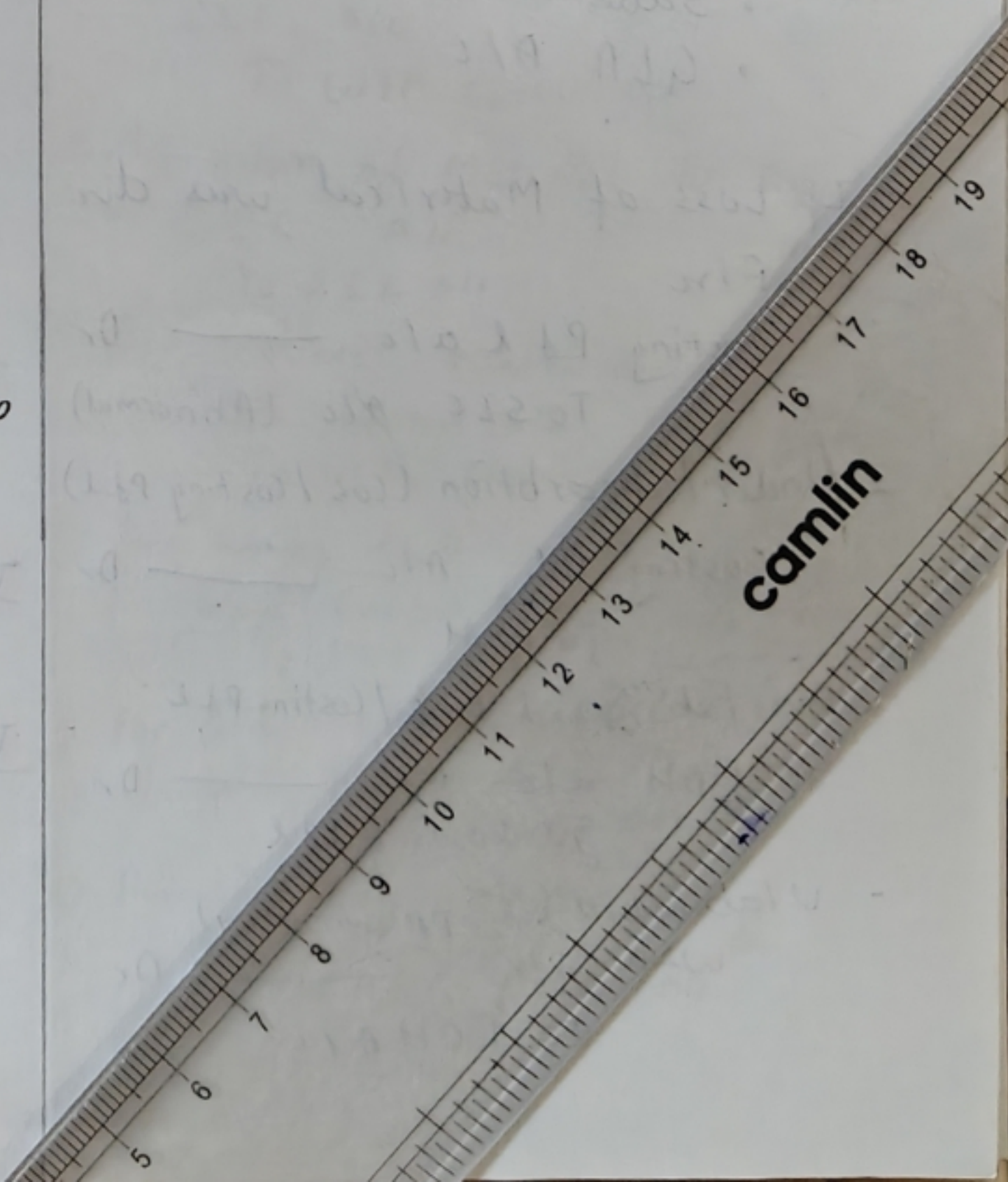
Step 3: Identify Cost driver rate

Cost driver rate = $\frac{\text{Total cost of activity}}{\text{No of unit of activity}}$

Format

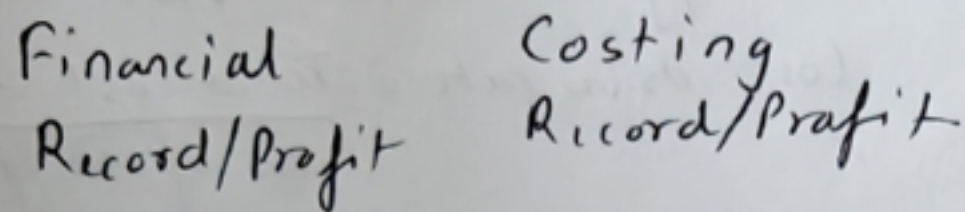
Activities - Cost driver - Amt - Activity rate - Department

Solve - Q. 9



5) Cost Sheet
Cost Accounting System.

★ Refer Reconciliation A/c from Notebook - Refer Q8. (ii)



★ Use Journals from Unit & Batch Costing

★ Accounts

- SLC A/c
- WIP A/c
- F/G A/c
- Wage Control A/c
- FOH A/c
- AOM's & S&D (General)
- COGS
- COS
- Costing P&L
- Sales A/c
- GLA A/c

- If Loss of Material was due to Fire

Costing P&L a/c ——— Dr
To SLC A/c (Abnormal)

- Under absorption (Cos / Costing P&L)

Costing P&L A/c ——— Dr
To FOH

- Over absorbed Cost / Costing P&L

FOH a/c A/c ——— Dr
To Costing P&L

- U/absorbed (Supplementary)

WIP a/c ——— Dr
To FOH A/c

- O/absorbed (Supplementary)

FOH A/c ——— Dr
To WIP A/c

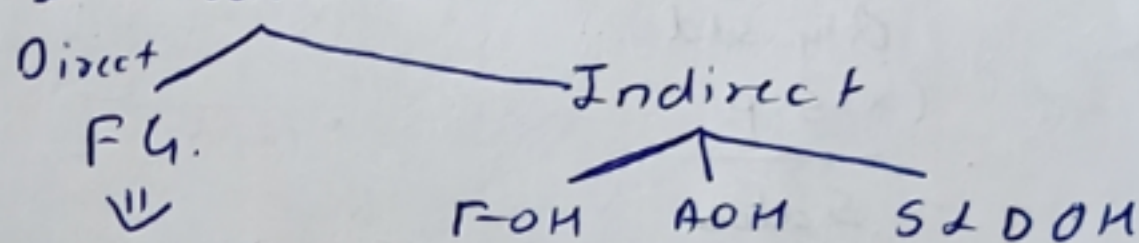
Non Integral Account

① Incurrence of Expense.

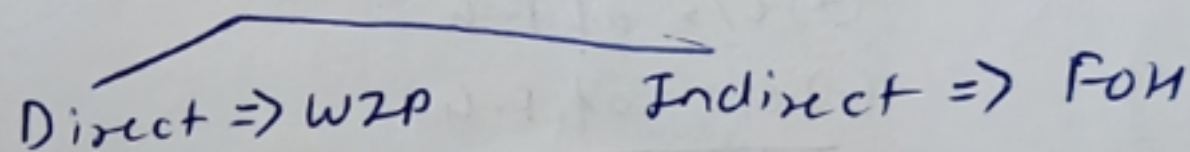
Expense A/c ——— Dr
To GLA / CLA

② Transfer absorbed / charged / Recovered / applied.

I. Material

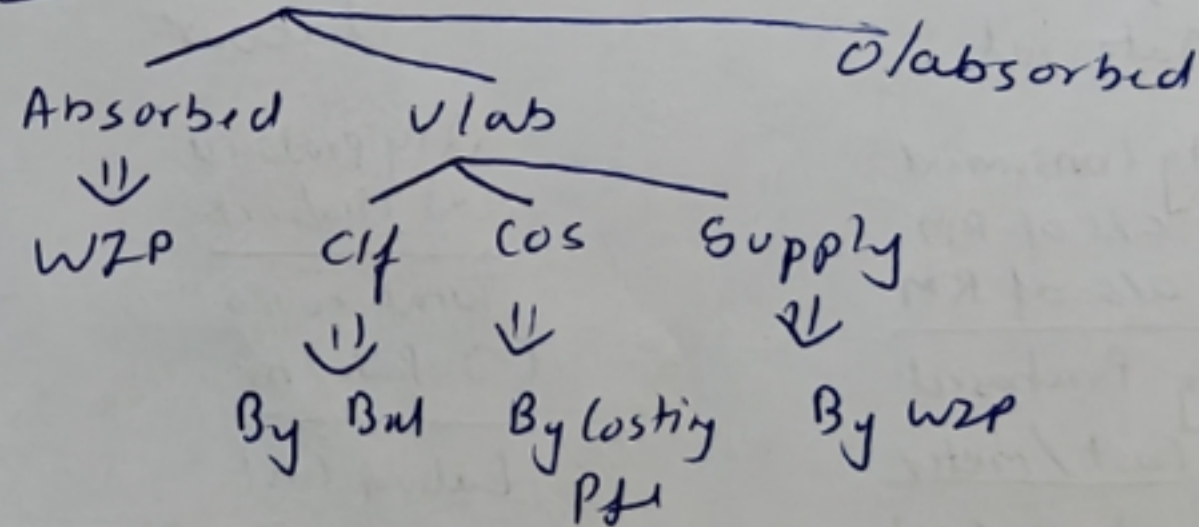


II. Labour

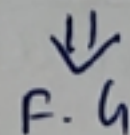


III. Expense => WIP

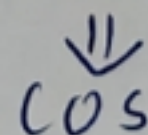
IV FOH's



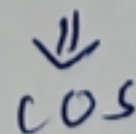
V AOM (RTP)



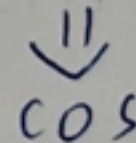
VI AOM (General)



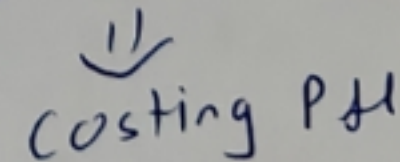
VII S&D



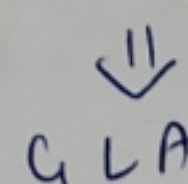
VIII COGS



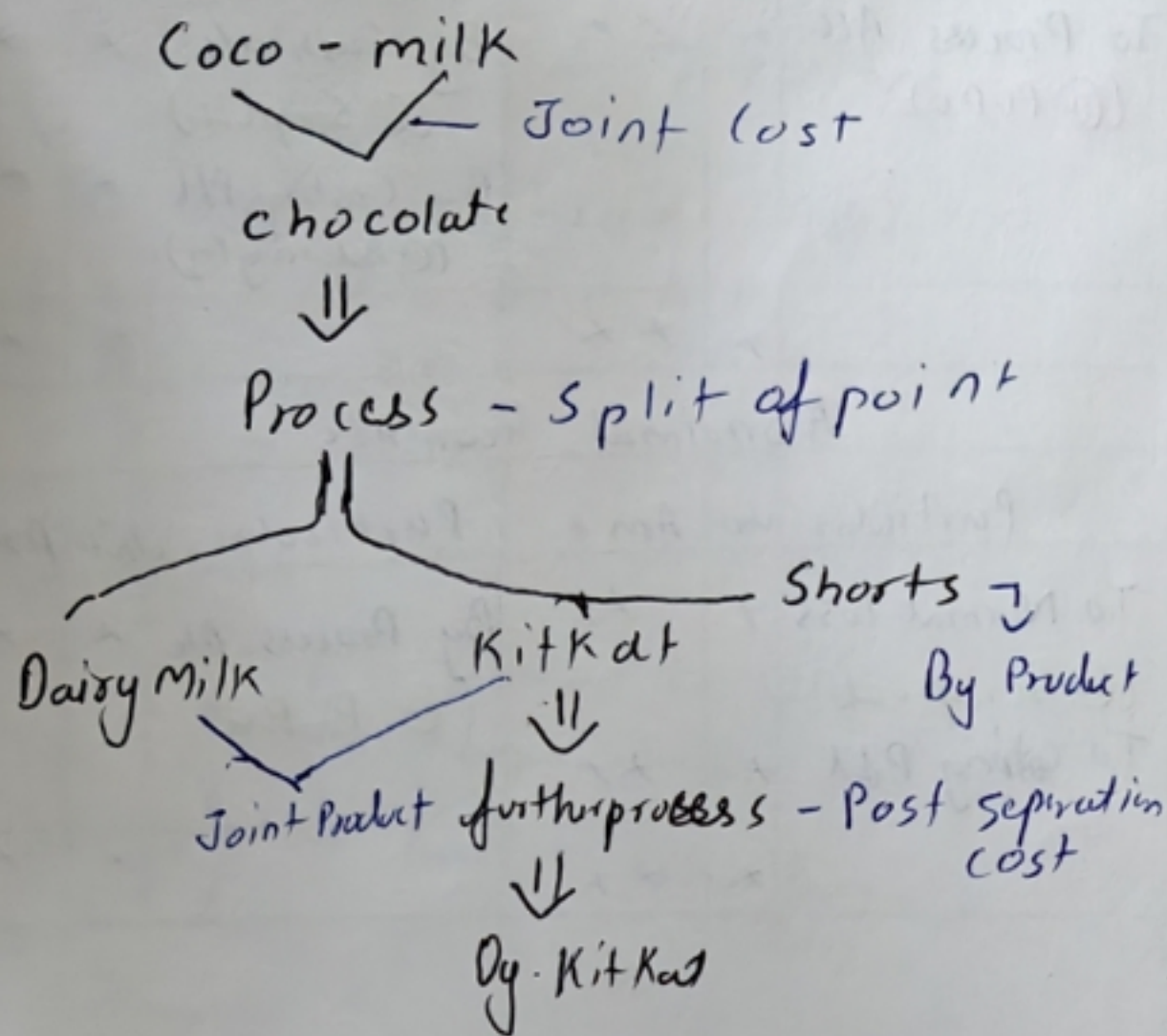
IX COS



X Costing P&L



③ Joint & By Product



Apportionment of Joint Cost

- ① Output or physical unit Method
 - ↳ In ratio of output
 - ↳ applicable when product are similar & same selling price
- ② Sales value method
 - ↳ apportion Joint cost in ratio of sales value
 - ↳ Only when product are sold at split of point
- ③ Net Realisable Sales value NRSV
 - ↳ apportion in ratio of NRV
 - NRV = Final sales - Post sep cost
- ④ Average cost
 - ↳ Avg Joint cost = $\frac{\text{Total Joint cost}}{\text{Total unit}}$
- ⑤ Contribution Margin Method
 - ↳ Apportion of Joint cost in ratio of Contribution
 - Contribution = Sales - V.C

Depth of Processing

- I. Additional Revenue if we process further
- | | |
|-----------------------------------|------------|
| Sales value after processing | xxx |
| (-) Sales value at split of point | (xx) |
| | <u>xxx</u> |
- II. Addition cost if further processed
- | | |
|--|------------|
| | xx |
| | <u>xx</u> |
| | <u>xxx</u> |
- I-II Additional Gain/Loss - Sell at split of point

Continue - C.A.S - Joint & By Product Cost Accounting System

- ① For purchase of Material

Store ledger Control A/c	Dr.
To Cost ledger Control	
- ② For the value of direct material issued to job

WIP Control A/c	Dr.
To SLC A/c	
- ③ For return of direct material from jobs

SLC A/c	Dr.
To WIP Control A/c	
- ④ For return of Material to Supplier

CLC A/c	Dr.
To SLC A/c	
- ⑤ For indirect Material

FOH Control A/c	Dr.
To SLC A/c	
- ⑥ For wages Paid

Wage Control A/c	Dr.
To CLC A/c	
- ⑦ For direct wages incurred on jobs

WIP Control A/c	Dr.
To Wage Control A/c	
- ⑧ For indirect Wages

FOH Control A/c	Dr.
To Wage Control A/c	

⑨ For any indirect expense paid
 FOH Control A/c Dr
 To CLC A/c

⑩ For charging Overhead to jobs
 WIP Control A/c Dr
 To FOH Control A/c

⑪ For total cost of Job Completed
 Cost of Sales A/c Dr
 To WIP Control A/c

⑫ The Balance of COS A/c is trf to Costing P&L a/c, for such transaction
 Costing P&L a/c Dr
 To COS a/c

⑬ For Sales value of Job Completed
 CLC A/c Dr
 To Costing P&L A/c

Continue ⇒ of Cost Accounting System.

Abnormal Loss A/c

Particular	Unit	Amt	Particular	Unit	Amt
To Process A/c (@ PCPU)		xx	By Cash a/c (@ Scrap Value)	x	xx
			By Costing P&L (@ Balancing fig)	x	xx
		xx			xx

Abnormal Gain A/c

Particular	Unit	Amt	Particular	Unit	Amt
To Normal loss (@ Scrap Value)	x	xx	By Process A/c (@ PCPU)	x	xx
To Costing P&L		xx			
		xx			xx

Process Costing

Process

Particular	Unit	Amt	Particular	Unit	Amt
To Unit Introduced	x	xx	By Normal Loss (@ Scrap Value)	x	xx
To Process Material		xx	By Abnormal loss (@ PCPU)	x	xx
To Wages		xx	By Unit Trf to Next Process	x	xx
To Production OH		xx			
To Other Exp		xx			
To Abnormal Gain (@ PCPU)	x	xx			
	x	xx		x	xx

Normal loss

Particular	Unit	Amt	Particular	Unit	Amt
To Process A/c (@ Scrap Value)	x	xx	By Cash account (@ Scrap Value)	x	xx
			By Abnormal gain (@ Scrap Value)	x	xx
	x	xx		x	xx

① Job Costing

• Use WAM for Inventory

• Absorbed Overhead (AO)

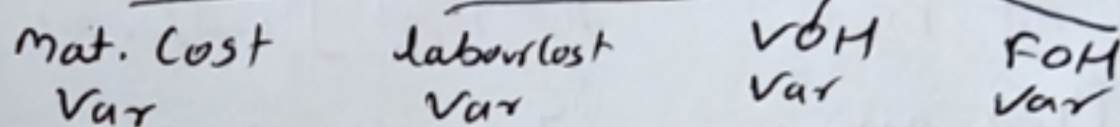
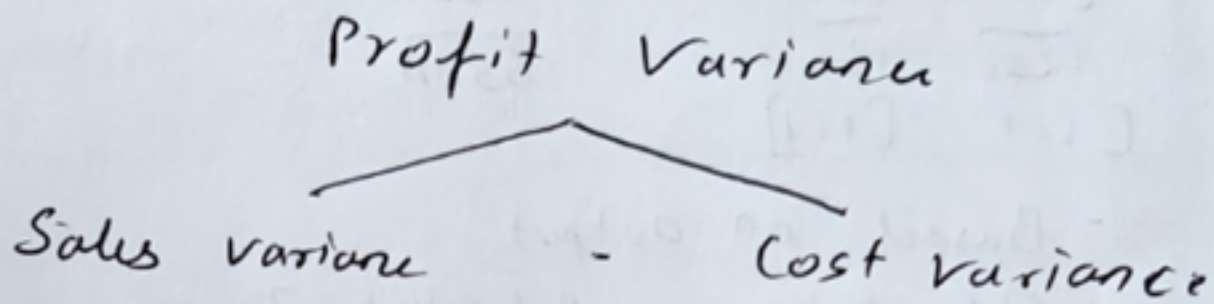
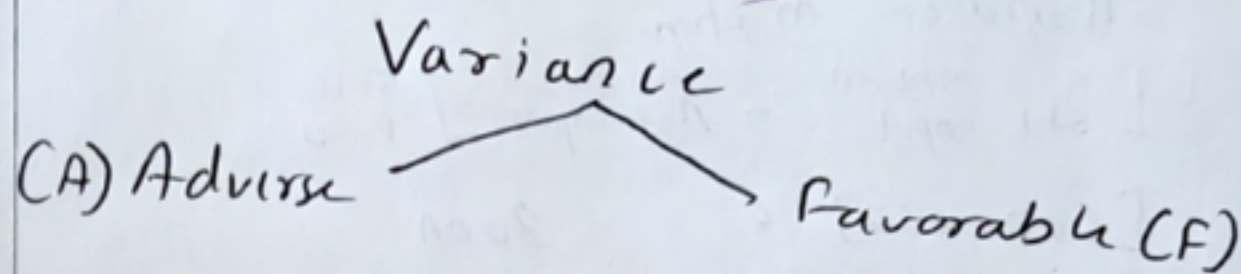
$$= A.L.A \times A.R$$

$$A.R = \frac{A.O}{A.L.A}$$

↳ Methods

- Output Method - N.A
- Machine hour - N.A
- Labour hour - AR formula.
- Labour Cost .

Standard Costing



• Material Cost Variance

Std Qty = 10			Rev Std = 1000			Actual = 1000		
Kg	@	Amt	Kg	@	Amt	Kg	@	Amt
A	6	36	600	6	3600	800	8	6400
B	6	30	600	5	3000	500	4	2000
		<hr/>			<hr/>			<hr/>
		12 Kg			1200			1300
		(2 Kg)			(200)			(300)
		<hr/>			<hr/>			<hr/>
		10	66	1000	6600	1000		8400

Material Cost Variance

$$[\text{std total mat cost} - \text{Act total mat cost}]$$

$$6600 - 8400 = 1800A$$

Mat Price Variance		Mat Usage Variance	
[std Price - Actual price]	Act unit	[std - Act]	std Price
		unit	unit
A [6 - 8]	800	= 1200A	
B [5 - 4]	500	= 500F	
		<hr/>	
		1100A	700A

Material mix Variance

$$[\text{std mix in} - \text{Act mix in}] \text{std}$$

$$[\text{actual Input} - \text{Act Input}] \text{Price}$$

A [650 - 800]	6	= 900A
B [650 - 500]	5	= 750F
		<hr/>
		150A

[1:1]

Material Yield

- Based on mixture
- Based on output
- Based on Input

Material Yield Variance

- Based on mixture

$$\left[\frac{\text{std mix in}}{\text{std input}} - \frac{\text{std mix in}}{\text{Act input}} \right] \text{Std Price}$$

$$\left[\frac{600 - 650}{1200} \right] 6 = 300A$$

$$\left[\frac{600 - 650}{1300} \right] 5 = 250A$$

$$\left[\frac{600 - 650}{1100} \right] = 550A$$

- Based on output

$$\left[\frac{\text{Std output in}}{\text{Act input}} - \frac{\text{Act output in}}{\text{Act input}} \right] \text{Std Avg Cost/output}$$

$$\left[\frac{1083.333 - 1000 \text{ kg}}{1200} \right] 6.6 \left(\frac{6600}{1000} \right) = 550A$$

- Based on Input

$$\left[\frac{\text{std Input for act output}}{\text{Act output}} - \frac{\text{Act Input for Act output}}{\text{Act output}} \right] \text{Std Avg Cost/Input}$$

$$\left[\frac{1200 - 1300}{\left(\frac{6600}{1200} \right)} \right] 5.5 = 550A$$

VOH Cost Var

$$[\text{Std total VOH} - \text{Actual total VOH}]$$

VOH Expenditure Var

$$\left[\frac{\text{Std VOH}}{\text{Rate}} - \frac{\text{Act VOH}}{\text{Rate}} \right] \text{Act hrs}$$

VOH Eff Var

$$\left[\frac{\text{Std}}{\text{hrs}} - \frac{\text{Act}}{\text{hrs}} \right] \text{Std VOH Rate}$$

Labour Cost Variance

$$[\text{Std total Lab cost} - \text{Act total Lab cost}]$$

Labour Rate Var

$$\left[\frac{\text{Std Rate}}{\text{Rate}} - \frac{\text{Act Rate}}{\text{Rate}} \right] \text{Actual hrs}$$

lab Idle time var

$$\text{Idle hrs} \times \text{Std Rate/hr}$$

lab Eff Var

$$\left(\frac{\text{Std Act hrs}}{\text{hrs} - \text{Worked}} \right) \text{Std Rate}$$

lab mix var

$$\left[\frac{\text{Std mix in Act}}{\text{hrs worked}} - \frac{\text{Act mix in Act}}{\text{hrs worked}} \right] \text{Std Rate}$$

lab Yield Var / lab Subeff Var

$$\left[\frac{\text{Std total hrs}}{\text{hrs worked}} - \frac{\text{Act total hrs}}{\text{hrs worked}} \right] \text{Std Avg Rate/hr}$$

• Hrs Paid = Hrs Worked + Idle time

∴ Hrs Worked = Hrs Paid - Idle time

∴ Hrs Paid = Hrs Worked + Idle time

• Fixed OH Cost Var

	Std	Act	A.R
Days	25	27	1 unit = £20
hrs	5000	5500	1 unit = 2hr
Unit	2500	2550	1 day = £2000
O.H	50000	50000	1 day = 200hr
Idle hr	-	200hrs	1 hrs = £10

Fixed Overhead Cost Var

$$[\text{Absorbed OH} - \text{Act OH}]$$

$$(\text{Act unit} \times \text{AR})$$

$$51000 - 53000 = 2200A$$

$$(2550 \text{ unit} \times 20)$$

FOH Exp Var
(Std FOH - Act FOH)

$$(50000 - 53000) = 3000A$$

FOH Volume Var
(Std unit - Act unit) AR/unit

$$(7500 - 2550) \times 20 = 1000F$$

FOH Capacity Volume Var
(Std hrs - Act hrs) AR/hr

$$(5000 - 5500) \times 10 = 5000F$$

FOH Idle time Var

$$\text{Idle time hr} \times \text{A.R}$$

$$(200 \times 10) = 2000A$$

FOH Eff Var

• Either as per time.

Std hrs for Act	5100
(-) Act hrs worked	5300
	<u>200</u>
	10
	<u>2000A</u>

FOH Calendar Var

$$(\text{Std days} - \text{Act days}) \text{A.R}$$

$$(25 - 27) \times 2000 = 4000F$$

FOH Net Capacity Var

$$\text{Std hrs in Act days} \quad 5400$$

$$(-) \text{Actual hrs} \quad \underline{5500}$$

$$(x) \text{A.R} \quad \underline{100}$$

$$1000F$$

• Either as per unit

Std unit in Act hrs worked	2650
(-) Actual unit	2550
	<u>100</u>
	20
	<u>2000A</u>

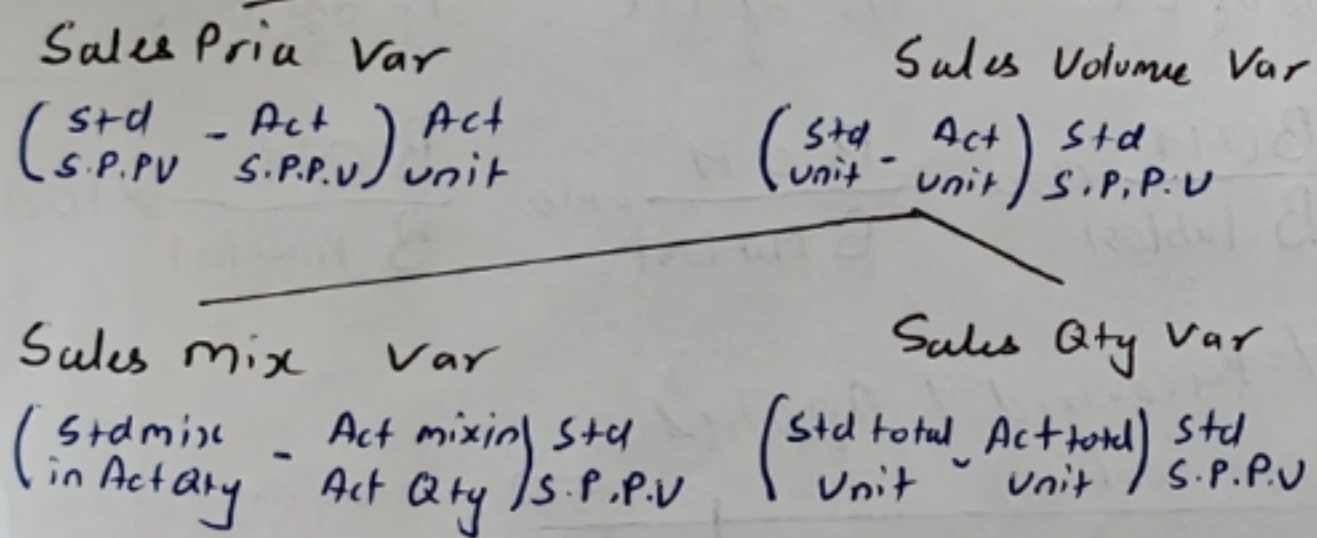
$$(x) \text{A.R}$$

⑨ Std Costing Continue

- FOM Volume Ratio = $\frac{2550}{2500} \times 100 = 102\%$
 - FOM Cap Ratio = $\frac{5500}{5000} \times 100 = 110\%$
 - FOM Cal Ratio = $\frac{27}{25} \times 100 = 108\%$
 - FOM Net Cap Ratio = $\frac{5500}{5400} \times 100 = 101.85\%$
 - FOM Eff Ratio = $\frac{5100}{5300} \times 100 = 96.23\%$
- As per unit output = $\frac{2550}{2650} \times 100 = 96.23\%$

• Sales Variance

(Std total sales - Act total sales)



- Reconciliation
- Verification.

Marginal Costing

* Cost Sheet

I. Sales			xx
II. Variable cost	}	①	xx
Prime cost			xx
(+) Var FOM			xx
V. Factory cost			xx
(+) Var Admin (RTP)			xx
V. COP			xx
(+) OP/STK of FG			xx
(-) CI/STK of FG			(xx)
V. COS			xx
(+) Var Admin OM			xx
(+) Var & D OM			xx
V. COS			(xx) xx
Contribution (I-II)			xx
(-) Fixed cost			
		Fac OM	(xx)
		Admin OM	(xx)
		Std OM	(xx)
		Profit	xx

Marginal Costing.

$$\textcircled{1} \text{ P.V.R} = \frac{\text{Contri}}{\text{Sales}} \times 100$$

$$\text{P.V.R} = \frac{\Delta \text{ in Profit} / \text{Contri}}{\Delta \text{ in Sales}} \times 100$$

$\textcircled{2}$ Break Even Sales (BEP Sales) (No profit/No Loss)

$$\text{in units} = \frac{\text{F.C}}{\text{Contri p.u}}$$

$$\text{in ₹} = \frac{\text{F.C}}{\text{P.V.R}}$$

$$\text{Break Even Sales \%} = \frac{\text{BEP Sales}}{\text{Total Sales}}$$

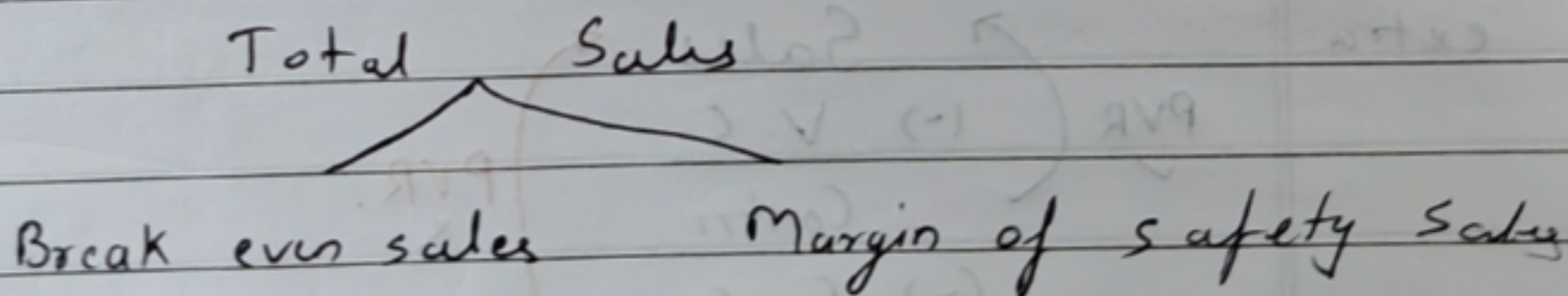
$\textcircled{3}$ Margin of Safety Sales (Over BE Sales)

$$\text{in units} = \frac{\text{Profit}}{\text{Contri pu}}$$

$$\text{in ₹} = \frac{\text{Profit}}{\text{P.V.R}}$$

$$\text{MOS Sales \%} = \frac{\text{MOS Sales}}{\text{Total Sales}}$$

$\textcircled{4}$



$$\therefore \text{Total Sales} = \text{BEP Sales} \oplus \text{MOS Sales}$$

⑤

$$PVR = \frac{\text{Contri} \times 100}{\text{Sales}}$$

$$\text{Sales} = \frac{\text{Contri}}{PVR} \quad \text{Contri} = \text{Sales} \times PVR$$

$$BEPS = \frac{F.C}{PVR}$$

$$F.C = BEPS \times PVR$$

$$MOSS = \frac{\text{Profit}}{PVR}$$

$$\text{Profit} = MOSS \times PVR$$

⑥

Cost Indifferena point or
Cost Break Even Point

$$\text{Indifferna Point} = \frac{\Delta \text{ in } F.C}{\Delta \text{ in } VC \text{ pu}}$$

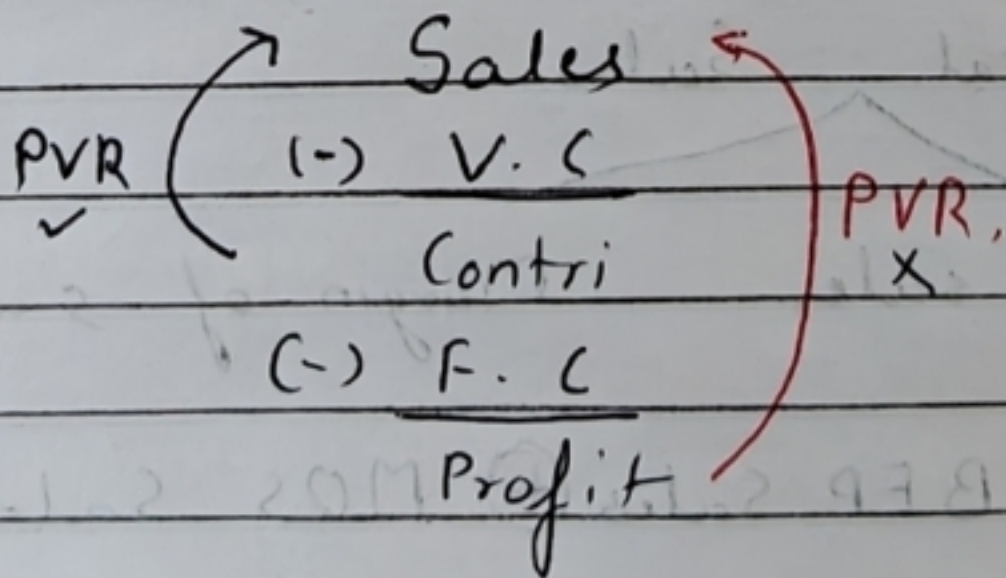
⑦

Limiting factor

Requirement > Factor. Available.

Rank as per available / hr. (Contri per)

extra



Overhead

Overhead.

Absorption Rate

Allocation

mhr rate

Apportionment & Reapportionment

Computation of AR

$$= \frac{\text{Budget OH}}{\text{Budget Level of Activity}}$$

Computation of under/over absorption \Rightarrow Treatment
 (Actual OH - Absorbed OH = under/over absorption)

Output
₹/unit

mhr
₹/mhr

labhr
₹/labhr

lab cost
% of L.C

Mat cost
% of M.C

Prime Cost
% of P.C

$$\frac{BOH}{B \text{ output}}$$

$$\frac{BOH}{B \text{ mhr}}$$

$$\frac{BOH}{B \text{ labhr}}$$

$$\frac{BOH}{B \text{ labcost}} \times 100$$

$$\frac{BOH}{B \text{ Matcost}} \times 100$$

$$\frac{BOH}{B \text{ Primecost}} \times 100$$

FOH Absorbed / charged / Recovered / Applied.

(Actual level of Act \times AR)

\Rightarrow under/over absorption

1-4

3-3

Treatment of OH under/over absorbed.

- ① Carry forward Method.
- ② Adjust in Current Year
 - Adjust in COS / Costing Pdd (bear the loss)
 - Supplementary Rate Method (Share the loss)
 - Partly COS / Partly Supplementary.

- Adjust in COS / Costing Pdd
 - \hookrightarrow Add/less after COS
- Supplementary Rate
 - \hookrightarrow Address after Prime Cost
- Partly
 - \hookrightarrow Analyze reason
 - \hookrightarrow Use COS \Rightarrow Normal factor
 - \hookrightarrow Use Supp \Rightarrow beyond comparing Control

Absorption Rate System

Blanket Rate
(Single rate)

Departmental Rate
(Diff for Diff-Dept)

Continue Over head.

• ABSORPTION COSTING

How to Selling Price

Material	₹10	
Labour	₹10	
VOM	₹10	
FOM	₹10	₹100000 @ 10,000
P. pu	₹10	

SP. Pu

$$\text{Absorption Rate} = \frac{\text{Budgeted O.M}}{\text{Budgeted level of Activity}} \times 100$$

Fixed OH Absorbed / Charged / Recover / applied: $\text{Actual level of activity} \times \text{Absorption Rate}$

Methods

① Output Method

$$A.R = \frac{\text{Budgeted O.M}}{\text{Budgeted Output}}$$

② Machine hour Method

$$A.R = \frac{\text{Budgeted OH}}{\text{Budgeted Mac hour}}$$

③ Labour cost Method

$$A.R = \frac{\text{Budgeted Overhead}}{\text{Budgeted labour hour}}$$

④ Labour cost method percentage

$$A.R = \frac{\text{Budgeted O.M}}{\text{Budgeted Cost}} \times 100$$

⑤ Material cost Method

$$A.R = \frac{\text{Budgeted OH}}{\text{Budgeted Material Cost}} \times 100$$

⑥ Prime Cost Method

$$A.R = \frac{\text{Budgeted OH}}{\text{Budgeted Prime Cost}} \times 100$$

• Job Costing

↳ Blanket Rate system

- entire Organisation
- For each department in Org.

↳ Departmental Rate System

- different dept diff features
- A.R depends on suitability.

Under/Over absorption

Actual OH	xxx
Absorbed OH	(xx)
under/over absorbed	xxx

Treatment for O.M under/over absorbed

① Carry forward Method

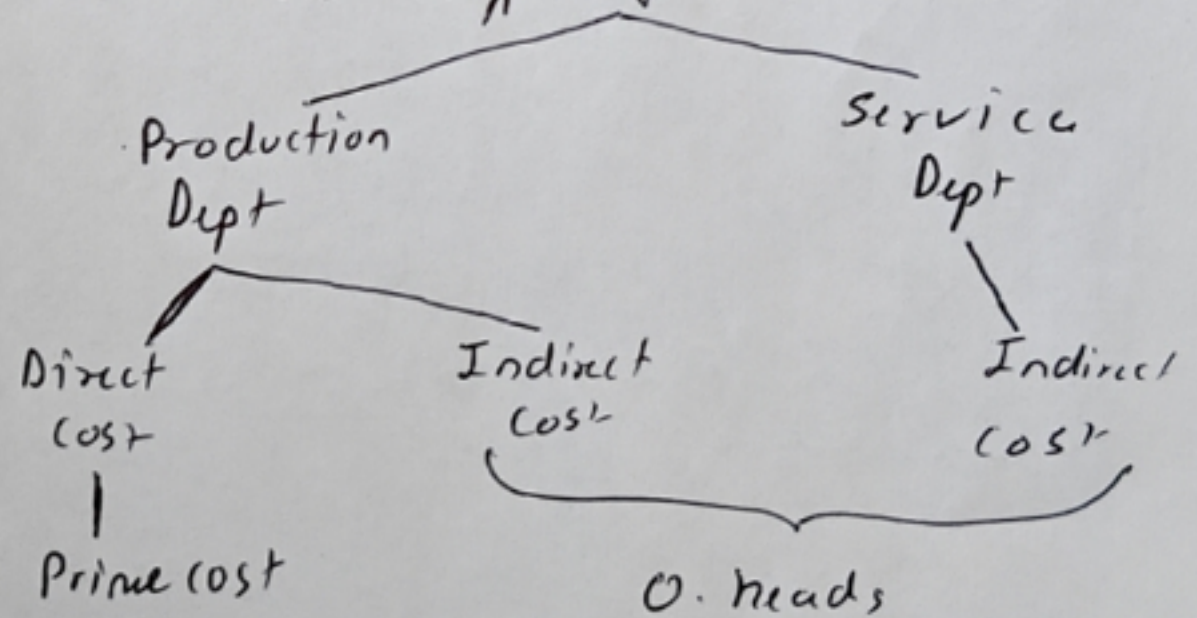
② Adjust in current year

- Adjust in COS / Costing P&L [bear the loss]
- Supplementary Rate Method [share the loss]
- Partly COS & partly supplementary

• Overheads

↳ means Indirect Cost

↳ Two types of Department



↳ Primary Distribution of Overhead

⇓ Allocation of overhead

⇓ Apportionment of Overhead

- ↳ Most suitable basis
- ↳ Next best alternative
- ↳ Last resort

Machine oriented

Labour oriented

⇓
Machine hr

Labour hr

Labour Cost

L> Secondary Distribution of O-head

Reapportionment of Service department
OH to production dept of Service
dept are

Independent



Direct Method

Partially dependent



Step ladder

Fully
Dependent

Reciprocal
Method

Cyclic
Method.

Simultaneous
Equation

L> Important Note

- Maintenance time is always unproductive
- Set up time may/may not be production

Unproductive

[Subtract Setup hrs
from total hours]

Production



Diff Cost

No

Yes

Single hr

Two tier

camlin