CA Papers

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Standard Costing Formulas Cheat Sheet

All variance analysis formulas for CA Inter Cost Accounting in one place. Bookmark this page for quick revision before your next CA Inter exam.

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Key Abbreviations

- **SQ** = Standard Quantity (for actual output)
- **AQ** = Actual Quantity
- **SP** = Standard Price
- **AP** = Actual Price
- **SH** = Standard Hours (for actual output)
- **AH** = Actual Hours
- **SR** = Standard Rate
- **AR** = Actual Rate
- **RSQ** = Revised Standard Quantity
- **RSH** = Revised Standard Hours
- **VOH** = Variable Overhead
- **FOH** = Fixed Overhead

Material Variances

Variance	Formula
Material Cost Variance (MCV)	`(SQ × SP) − (AQ × AP)` Standard Cost - Actual Cost

Material Price Variance (MPV)	`AQ × (SP − AP)` Actual Qty × (Std Price - Actual Price)
Material Usage Variance (MUV)	`SP × (SQ − AQ)` Std Price × (Std Qty - Actual Qty)
Material Mix Variance (MMV)	`SP × (RSQ − AQ)` Std Price × (Revised Std Qty - Actual Qty)
Material Yield Variance (MYV)	`SP × (SQ − RSQ)` Std Price × (Std Qty - Revised Std Qty)

Relationship: MCV = MPV + MUV = MPV + MMV + MYV

Worked Example: Material Variances

Standard

10 kg @ ₹50/kg per unit
Output: 100 units
SQ = 1,000 kg, SP = ₹50

Actual

1,050 kg purchased & used
@ ₹48/kg
AQ = 1,050 kg, AP = ₹48

MPV = AQ × (SP − AP) = 1,050 × (50 − 48) **= ₹2,100 (F)**

MUV = SP × (SQ − AQ) = 50 × (1,000 − 1,050) **= ₹2,500 (A)**

MCV = MPV + MUV = 2,100 (F) + 2,500 (A) **= ₹400 (A)**

Verify: MCV = (SQ × SP) - (AQ × AP) = (1,000 × 50) - (1,050 × 48) = 50,000 - 50,400 = ₹400 (A) ✓

Variance	Formula
Labour Cost Variance (LCV)	`(SH × SR) − (AH × AR)` Standard Cost - Actual Cost
Labour Rate Variance (LRV)	`AH × (SR − AR)` Actual Hours × (Std Rate - Actual Rate)
Labour Efficiency Variance (LEV)	`SR × (SH − AH)` Std Rate × (Std Hours - Actual Hours)
Labour Mix Variance (LMV)	`SR × (RSH − AH)` Std Rate × (Revised Std Hours - Actual Hours)
Labour Yield Variance (LYV)	`SR × (SH − RSH)` Std Rate × (Std Hours - Revised Std Hours)
Idle Time Variance	`Idle Hours × SR` Abnormal idle time × Standard rate

Relationship: LCV = LRV + LEV = LRV + LMV + LYV

Worked Example: Labour Variances

Standard

2 hours @ ₹100/hour per unit
Output: 100 units
SH = 200 hrs, SR = ₹100

Actual

220 hours worked
@ ₹95/hour
AH = 220 hrs, AR = ₹95

LRV = AH × (SR − AR) = 220 × (100 − 95) **= ₹1,100 (F)**

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LCV = LRV + LEV = 1,100 (F) + 2,000 (A)          = ₹900 (A)
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Verify: LCV = (SH × SR) - (AH × AR) = (200 × 100) - (220 × 95) = 20,000 - 20,900 = ₹900 (A) ✓

Overhead Variances

Variance	Formula
Variable OH Cost Variance	`(SH × SR) − Actual VOH` Absorbed VOH - Actual VOH
Variable OH Efficiency Variance	`SR × (SH − AH)` Std Rate × (Std Hours - Actual Hours)
Variable OH Expenditure Variance	`(AH × SR) − Actual VOH` Budgeted VOH for AH - Actual VOH
Fixed OH Cost Variance	`Absorbed FOH − Actual FOH` (SH × SR) - Actual FOH
Fixed OH Volume Variance	`Absorbed FOH − Budgeted FOH` SR × (SH - Budgeted Hours)
Fixed OH Expenditure Variance	`Budgeted FOH − Actual FOH` Budget - Actual spending
Fixed OH Efficiency Variance	`SR × (SH − AH)` Std Rate × (Std Hours - Actual Hours)
Fixed OH Capacity Variance	`SR × (AH − Budgeted Hours)` Std Rate × (Actual - Budget Hours)
Calendar Variance	`SR × (Revised Budget Hrs − Budget Hrs)` Due to different working days

FOH: Cost Variance = Volume Variance + Expenditure Variance

Worked Example: Fixed Overhead Variances

Budget

Budgeted FOH = ₹50,000
Budgeted Hours = 1,000 hrs
FOH Rate (SR) = ₹50/hr

Actual

Output: 90 units (Std: 10 hrs/unit)
Actual Hours = 920 hrs
Actual FOH = ₹52,000
SH = 900 hrs, AH = 920 hrs

Absorbed FOH = SH × SR = 900 × 50 = **₹45,000**

FOH Expenditure = Budget − Actual = 50,000 − 52,000 **= ₹2,000 (A)**

FOH Volume = Absorbed − Budget = 45,000 − 50,000 **= ₹5,000 (A)**

FOH Cost = Expenditure + Volume **= ₹7,000 (A)**

Breaking down Volume Variance:

FOH Efficiency = SR × (SH − AH) = 50 × (900 − 920) = **₹1,000 (A)**
FOH Capacity = SR × (AH − Budget Hrs) = 50 × (920 − 1,000) = **₹4,000 (A)**

Volume = Efficiency + Capacity = 1,000 + 4,000 = ₹5,000 (A) ✓

Verify: FOH Cost = Absorbed - Actual = 45,000 - 52,000 = ₹7,000 (A) ✓

Sales Variances

Variance	Formula
Sales Value Variance	`Budgeted Sales − Actual Sales` (BQ × BP) - (AQ × AP)

Sales Price Variance	`AQ × (AP − BP)` Actual Qty × (Actual Price - Budget Price)
Sales Volume Variance	`BP × (AQ − BQ)` Budget Price × (Actual Qty - Budget Qty)
Sales Mix Variance	`Std Profit × (AQ − Revised BQ)` Due to product mix change
Sales Quantity Variance	`Std Profit × (Revised BQ − BQ)` Due to total quantity change

Worked Example: Sales Variances

Budget

Budgeted Sales: 1,000 units
Budgeted Price: ₹200/unit
BQ = 1,000, BP = ₹200

Actual

Actual Sales: 1,100 units
Actual Price: ₹190/unit
AQ = 1,100, AP = ₹190

Sales Price Var = AQ × (AP − BP) = 1,100 × (190 − 200) **= ₹11,000 (A)**

Sales Volume Var = BP × (AQ − BQ) = 200 × (1,100 − 1,000) **= ₹20,000 (F)**

Sales Value Var = Price + Volume **= ₹9,000 (F)**

Verify: Budget Sales = 1,000 × 200 = ₹2,00,000 | Actual Sales = 1,100 × 190 = ₹2,09,000 | Variance = ₹9,000 (F) ✓

Important Tips for Exam

★ Favourable (F) variance: Actual < Standard (profit increases)

- ★ Labour: LCV = LRV + LEV = LRV + LMV + LYV
- ★ Always check if variance is asked at INPUT level or OUTPUT level
- ★ For overhead recovery rate: Budget OH ÷ Budget Hours
- ★ Reconciliation: Actual Profit = Budget Profit ± Variances

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