Achievable

CMA PART 1 DUMP SHEET

Variance analysis

Variance basics & standard costing

- **Total variance** = actual results − master (static) budget; break into price, volume, and mix for the root cause
- **Favorable** = improves profit; **unfavorable** = reduces profit
  The materials, labor, overhead, and sales formulas on this sheet are written so that a positive result is favorable
- **Standard costing:** predetermined unit-level standards for materials, labor, and overhead (standards = per-unit benchmarks; budgets = aggregated period benchmarks)
- **Management by exception:** managers act only on material deviations; routine matters are delegated

Materials variances

- **Price:** $(SP - AP) \times AQ$
  AQ = actual quantity purchased; purchasing responsibility
- **Usage:** $(SQ - AQ) \times SP$
- **Cost (total):** $(SQ \times SP) - (AQ \times AP)$
  = price + usage, if quantity purchased = quantity used
- **Mix:** $\sum(SM - AM) \times AMU \times SP$, over the materials
  AMU = total actual quantity used
- **Yield:** $\sum(SMU - AMU) \times SM \times SP$, over the materials
  SMU = standard usage for actual output; usage = mix + yield

Variable overhead (VOH)

- **Standard VOH rate** $= \dfrac{\text{budgeted VOH}}{\text{budgeted hours}}$
  The driver is usually labor hours
- **Spending:** $(SR - AR) \times AH$
- **Efficiency:** $(SH - AH) \times SR$
- **Cost (total):** $(SH \times SR) - (AH \times AR)$
  = spending + efficiency

Flexible budgets

- **Flexible budget:** recalculates revenues and activity-dependent costs at actual activity using budgeted prices and rates; fixed costs remain unchanged; uses the standard input *allowed* for actual output (e.g., standard hours), not actual usage
- **Flexible-budget variance** = actual − flexible budget; isolates performance from the sales-volume effect; splits into input price (rate) + input quantity (efficiency); for FOH it is all spending

Labor variances

- **Rate:** $(SR - AR) \times AH$
  HR/personnel responsibility
- **Efficiency:** $(SH - AH) \times SR$
  SH = standard hours for actual output
- **Cost (total):** $(SH \times SR) - (AH \times AR)$
  = rate + efficiency
- **Mix and yield:** as for materials (AHU = total actual hours). Efficiency = mix + yield

Fixed overhead (FOH)

- **SFR** $= \dfrac{\text{budgeted FOH}}{\text{budgeted hours}}$
  Absorbed FOH = SFR × standard hours (or units) for actual output
- **Cost (total):** absorbed FOH − actual FOH
  = spending + production volume
- **Spending (budget):** budgeted FOH − actual FOH
- **Production volume:** absorbed FOH − budgeted FOH
  Splits into capacity + efficiency when FOH is applied on hours rather than units
- **Capacity:** $(SFR \times AH) - (SFR \times BH)$
  Favorable if AH > BH
- **Efficiency:** $(SFR \times SH) - (SFR \times AH)$
  Favorable if SH > AH

Sales variances

- **Total:** actual sales − master budget sales = price + volume
- **Price:** $(AP - BP) \times$ actual units
  Actual − flexible budget; favorable if the actual price > budget
- **Volume:** (actual − budgeted units) × BP
  Flexible − master budget; splits into mix + quantity
- **Mix:** $(AM - SM) \times$ total actual units $\times BP$
- **Quantity:** (total actual − total budgeted units) × SM × BP
- Substitute contribution margin for price → **sales-margin variances**