STANDARD COSTING FORMULAE

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- MATERIAL VARIANCES:
  1. Material Cost Variance: \((SQ \times SP) - (AQ \times AP)\)
  2. Material Price Variance: \(AQ \times (SP - AP)\)
  3. Material Usage Variance: \(SP \times (SQ - AQ)\)

Check: \( MCV = MUV + MPV \)

4. Material Mix Variance = \((RSQ - AQ) \times AP\)

Where, \( RSQ \) (Revised Std. Qnty) = \[
\frac{SQ \text{ of one material}}{\text{Total of actual Qnty of all materials}} \times \text{Total of Std. Qnty of all materials}
\]

5. Material Revised Usage Variance: \((SQ \times RSQ) \times SP\)

6. Material Yield Variance: \((AY - SY) \times SOP [\text{Std. O/p Price}]\)

Check: \( MUV = MUV + MPV \)

- LABOUR VARIANCES:
  1. Labour Cost Variance: \((SH \times SR) - (AH \times AR)\)
  2. Labour Rate Variance: \(AH \times (SR - AR)\)
  3. Labour Efficiency (or time) Variance: \(SR (SH - AH)\)

Check: \( LCV = LEV + LRV \)

Labour efficiency variance is further divided into the following variances:

(i) Idle time variance: \(\text{Idle hrs} \times SR\)

(ii) Labour mix variance: \((\text{Revised std. hrs.} - AH) \times SR\)

(iii) Labour revised efficiency variance: \((SH - RSH) \times SR\)

(iv) Labour yield variance: \((AY - SY) \times SLC [\text{Std. labour cost per unit of o/p}]\)

Check: \( LEV = ITV + LMV + LYV \)

- OVERHEAD VARIANCES:
  Standard overhead rate (per hr.) = \(\frac{\text{Budgeted o/h}}{\text{Budgeted hrs.}}\) OR \(\frac{\text{Budgeted o/h}}{\text{Budgeted o/p in units}}\)

Note: Separate o/h rates will be computed for fixed and variable o/hs

The basic calculation should be made before computing variances:

(i) When overhead rate per hour is used:
(a) Std. Hrs. for actual o/p [SHA0]: \(\text{Budgeted Hrs.} \times \text{Act. o/p}\)
(b) Absorbed (or Recovered) o/h: \(SH \times \text{Std. o/h rate per hr}\)
(c) Std. overhead: \(AH \times \text{Std. overhead rate per hr}\)
(d) Budgeted overhead: \(\text{Budgeted Hrs.} \times \text{Std. overhead rate per hr}\)
(e) Actual overhead: \(\text{Act. Hrs} \times \text{Actual overhead rate per hr}\)

(ii) When overhead rate per unit is used:
(a) Std. output for actual hrs [SOAH]: \(\text{Budgeted output (in units)} \times \text{Act. Hrs.}\)
(b) Absorbed overhead: \(\text{Act. o/p} \times \text{Std. o/h rate per unit}\)
(c) Std. overhead: \(\text{Std. o/p} \times \text{Act. overhead rate per unit}\)
(d) Budgeted overhead: \(\text{Budgeted o/p} \times \text{Std. overhead rate per unit}\)
(e) Actual overhead: \(\text{Act. o/p} \times \text{Actual overhead rate per unit}\)

• Overhead cost variance: \(\text{Absorbed overhead} \times [\text{Std. hrs for Actual o/p}] - \text{Act. Overhead}\)
Overhead Cost Variance

Variable Overhead Variances  Fixed Overhead Variances

- Variable Overhead Cost Variances: (Absorbed variable overhead – Actual variable overhead)
  This variance is sub-divided into the following two variances:
  (a) Variable overhead expenditure variance or spending variance or budget variance:
      (Standard variable overhead – Actual variable overhead)
  (b) Variable overhead efficiency variance: (Absorbed variable overhead – Std. variable overhead)
      Check: VOCV = VOEXV + VOEFV

- Fixed Overhead Cost Variances: (Absorbed overhead – Actual overhead)
  This variance is sub-divided into the following two variances:
  (c) Fixed overhead expenditure variance: (Budgeted Fixed overhead – Actual Fixed overhead)
  (d) Fixed overhead volume variance: (Absorbed overhead – Budgeted overhead)
      Check: FOCV = FOEV + FOVV

  Fixed overhead volume variance is further divided into the following variances:
  (a) Efficiency variance: (Absorbed fixed o/h – Std. fixed o/h)
  (b) Capacity variance: (Std. fixed o/h – Budgeted o/h)
  (c) Calendar variance: (Act. No. of working days – Std. No. of working days) x Std. fixed rate per day
      OR (Revised budgeted Hrs. – Budgeted Hrs.) x Std. fixed rate per Hr.
  Where, Revised budgeted Hrs. = Budgeted Hrs. X Actual days
      Budgeted Days

  Note: When calendar variance is computed, there will be modification in the capacity variance and will be calculated:
  Revised capacity variance: (Act. Hrs. – Revised budgeted Hrs.) x Std. fixed rate per hr.
  Check: FOVV = Efficiency Variance + Capacity Variance + Calendar Variance

♦ RATIO ANALYSIS:

<table>
<thead>
<tr>
<th>Ratio Name</th>
<th>Formula</th>
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<tbody>
<tr>
<td>1. Efficiency Ratio:</td>
<td>Output expressed in term of std. hrs.</td>
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<tr>
<td></td>
<td>Act. Hrs. worked for producing that o/p X 100</td>
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<tr>
<td></td>
<td>OR Capacity Ratio x Efficiency Ratio X 100</td>
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<tr>
<td>3. Calendar Ratio:</td>
<td>Actual number of working days in a period</td>
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<td></td>
<td>No. of working days in related budget period X 100</td>
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<td>4. Actual Capacity Usage Ratio:</td>
<td>Actual Hrs. worked</td>
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<tr>
<td></td>
<td>Max. possible Hrs. in a period X 100</td>
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<td>5. Actual Usage of Budgeted Capacity Ratio:</td>
<td>Actual Working Hrs.</td>
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<tr>
<td></td>
<td>Budgeted Hrs. X 100</td>
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<tr>
<td></td>
<td>Max. possible No. of working Hrs. in budgeted period X 100</td>
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