OVERHEAD ANALYSIS

Objectives of Cost Accounting:

- To estimate the cost of each product
- To calculate the cost of any work-in-progress
- To attempt to control costs by comparing actual with estimated
Three elements of Cost

**Direct Materials**
- raw materials, stationery, stores from all departments.

**Direct Labour**
- wages, salaries, commission paid to employees.

**Other expenses**
- admin, selling, distribution and financial expenses.

‘Other Expenses’

These ‘Other Expenses’ can be DIRECT or INDIRECT:

**DIRECT**
- traceable to a particular product or job. They vary in proportion to production.

Direct Materials + Direct Labour + Direct Expenses = PRIME COST
Indirect Expenses

**INDIRECT** - these are expenses which cannot be traceable to a particular job or product.

Normally known as Overheads

They fall into 3 groups –

- **Manufacturing**
- **Selling and Distribution**
- **Administration and Financial**

Examples...

- Storage charges
- Salaries of support staff
- Electricity
- Water
- Rent
- Tools and consumables
- Telephone and connectivity
- Staff welfare
- Rates and local taxes
- Maintenance expenses
- Professional fees
- Staff training
- Foreign travel
- Depreciation
- Staff incentives
- Legal expenses
- Subscriptions
- Insurance
- Interest
- Bank charges
Prime Cost + Manufacturing Overheads = \textbf{PRODUCTION COSTS}

Production Costs + Selling and Distribution + Administration and Financial = \textbf{TOTAL COST}

Overheads are...

- Generally fixed costs
- Difficult to identify with a product or service delivery
- Can be a significant portion of a business’s costs
  - \textit{Example:} a hotel will have high gross margins but also high overheads which need to be ‘covered’ with each sale they make
Managing Overheads

- “what gets measured, gets managed”

- Objective evaluation of costs: often businesses find ways of ‘cutting costs’. meaning cutting overheads

- If not monitored well, this can ‘balloon’ to very large amounts that will eventually affect a company’s competitiveness..

Steps in Managing Overheads

- **Step 1** – Identify Direct/Indirect costs

- **Step 2** – Organize “Cost Collection” by creating “Cost Centers” and record expenses in that manner

- **Step 3** – Identify costs that can be ‘allocated’ and those that need to be ‘apportioned’

- **Step 4** – find suitable bases to relate the overheads collected to the product/service delivery

- **Step 5** – Calculate overhead absorption based on the rates and measure product / service costs accordingly
In order to control costs it is necessary to trace them to the area responsible for the costs.

These areas are known as **COST CENTRES**

A Cost Centre can be a location, person or equipment

The Cost Centre acts as a collecting place for costs eg a manufacturing department, a machine, an operating theatre in a hospital.
Two Types of Cost Centres

**Production / Operation Cost Centres** – these are involved in the manufacturing / service delivery process such as machining and assembly Cost Centres.

**Service Cost Centres** – these are not involved in the actual manufacturing process but provide services to the production Cost Centres such as the maintenance and stores departments.

Class Exercise:

- From the list of cost centers below, identify which cost centers are production cost centers and which are service cost centers:

  - Raw Material Mixing
  - Packing Material Stores
  - Production – Filling
  - Finished Goods Assembly
  - Finished Goods Packing
  - Engineering
  - Quality Assurance
  - Raw Material Stores
  - Finished Good Stores
  - Production Planning
  - Factory HR Dept
  - Machine Room
  - Plant Administration Dept
  - Staff Canteen Dept
  - Infirmary and First aid
  - Waste water and Sludge Dept
Cost Units

A **Cost Unit** is the final product or service being costed

- Examples of Cost Units might be:
  - a television set manufactured
  - a ball-bearing made on a machine
  - a bus journey in terms of operating cost per passenger mile travelled
  - a heart transplant operation

---

**HOW TO TRACE COSTS TO COST CENTRES**

- **Direct Costs**
  - Power, Lighting and Heating (when separately metered),
    Repairs and Maintenance to a machine

- are **ALLOCATED** to a Cost Centre.
Allocation of Costs to Cost Centres

Cost Allocation refers to the allotment of whole items of overhead costs to cost centres; that is, overhead costs can be allocated directly to a Cost Centre.

For example, if the canteen is treated as a separate cost centre, then the wages of the canteen manager are allocated to that cost centre.

Indirect Costs

Depreciation, Rent, Rates, Heating and Lighting (not separately metered), Canteen costs, Supervision etc – are APPORTIONED to Cost Centres on a suitable basis.

Cost Apportionment

overhead costs are shared out among various Cost Centres on some fair and equitable basis since the overhead cannot be directly allocated to any one particular cost centre.

A suitable basis could be:

Floor space for Heating and Lighting Number of Employees for Canteen Costs.
Apportionment of Costs

“Apportion” means to distribute the overheads among two or more cost centers based on an identified criteria which best reflects the way the costs were incurred.

<table>
<thead>
<tr>
<th>Overhead Cost</th>
<th>Basis of Apportionment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent, rates, heating and lighting</td>
<td>floor area, size of department</td>
</tr>
<tr>
<td>Depreciation and insurance of plant and machinery</td>
<td>book value of the fixed assets</td>
</tr>
<tr>
<td>Canteen, factory administration costs</td>
<td>number of employees</td>
</tr>
<tr>
<td>Power</td>
<td>horse power of machines</td>
</tr>
</tbody>
</table>

However, all businesses will incur Service Costs eg Maintenance or Personnel Departments.

These departments exist for the whole business not just one department and therefore these Service Costs must be APPORTIONED among the other Production Departments, again using a suitable basis.
### Basis of Apportionment

<table>
<thead>
<tr>
<th>Service Overhead Cost</th>
<th>Basis of Apportionment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canteen, personnel and security guards' wages</td>
<td>number of employees</td>
</tr>
<tr>
<td>Cleaning</td>
<td>cost of materials used or material requisitions</td>
</tr>
<tr>
<td>Maintenance</td>
<td>maintenance man hours or value of the capital equipment</td>
</tr>
</tbody>
</table>

### ABSORPTION OF COSTS

Now that Overhead Costs have been Apportioned to Cost Centres, they must now be **Absorbed** into the Total Cost.

Overhead Absorption refers to the method of charging a proportion of the final production cost centres' overheads onto a particular job on the basis of for example, the number of labour hours or machine hours taken to complete the job.

This is often also referred to as **Overhead Recovery**.
Bases for Absorbing Overhead Costs:

Rate per Direct Labour Hour
when Labour Hours in the relevant factor

Total Predetermined Overheads / Total Labour Hours

Machine Hour Rate:
either

Area occupied by machine - rates, rent etc
Cost of operating – depreciation, power etc

Total Predetermined Overheads / Total Machine Hours

Class Exercise 01

N Ltd manufactures specialist equipment for hotels at two separate factories, Northern and Southern. Budgeted information for the next accounting period is as follows:

<table>
<thead>
<tr>
<th>Northern factory</th>
<th>Laminating</th>
<th>Assembly</th>
<th>Finishing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overheads</td>
<td>$160,000</td>
<td>$270,000</td>
<td>$150,000</td>
<td>$580,000</td>
</tr>
<tr>
<td>Machine hours</td>
<td>$4,000</td>
<td>$30,000</td>
<td>$5,000</td>
<td>$39,000</td>
</tr>
<tr>
<td>Labour hours</td>
<td>$20,000</td>
<td>$1,500</td>
<td>$1,700</td>
<td>$23,200</td>
</tr>
</tbody>
</table>

The company currently absorbs production overheads on the basis of labour hours in the laminating cost centre, and on the basis of machine hours in the assembly and finishing cost centres.

Cost estimate – Job X14
The budgeted labour and machine hours for the job are:

<table>
<thead>
<tr>
<th>Cost centres</th>
<th>Budgeted labour hours</th>
<th>Budgeted machine hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laminating</td>
<td>90</td>
<td>15</td>
</tr>
<tr>
<td>Assembly</td>
<td>15</td>
<td>35</td>
</tr>
<tr>
<td>Finishing</td>
<td>5</td>
<td>30</td>
</tr>
</tbody>
</table>

Calculate:
a. Production Overhead Absorption Rates using the bases given
b. Production Overhead Cost for Job X14
Alternative Overhead Absorption Rates

- Overheads as a percentage of Direct Wages
- Overheads as a percentage of Direct Materials
- Overheads as a percentage of Prime Costs
- Rate per Unit Produced

Service Cost Centers

- Practically, Service Cost Centers provide services to other Service Cost Centers.
  - Eg. Factory Canteen will allow HR Dept staff to use their services and Vice versa

- In accounting for these ‘reciprocal costs’ there are two methods we can use:
  - Simultaneous Equation
  - Repeated Distribution Method
Class Exercise 02

A company has two service and two producing departments.

The two service departments serve not only to producing departments but also to each other. The departmental estimates for the next year are as follows:

**Producing departments:**

A \hspace{2cm} 50,000  
B \hspace{2cm} 40,000  

**Service departments:**

X \hspace{2cm} 10,000  
Y \hspace{2cm} 8,800  

The service departments costs are to be distributed as under:

Cost of X: 50% to A, 40% to B, and 10% to Y

Cost of Y: 40% to A, 40% to B, and 20% to X

a. Calculate the cost of X and Y Departments using the Continuous Distribution Method
b. Calculate the cost of X and Y Departments using the Simultaneous Equation Method

Class Exercise 03

**Southern factory**

The factory consists of 2 production cost centres and 2 service cost centres. The initial allocation and apportionment of production overheads is shown in the following table:

<table>
<thead>
<tr>
<th>Production cost centres</th>
<th>Service cost centres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etching</td>
<td>Forming</td>
</tr>
<tr>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Production overheads</td>
<td>400,000</td>
</tr>
</tbody>
</table>

The work carried out by X and Y for other cost centres is as follows:

<table>
<thead>
<tr>
<th>Etching</th>
<th>Forming</th>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>X</td>
<td>35</td>
<td>55</td>
<td>-</td>
</tr>
<tr>
<td>Y</td>
<td>60</td>
<td>35</td>
<td>5</td>
</tr>
</tbody>
</table>

The repeated distribution method is used to apportion overheads from the service cost centres to the production cost centres.

a. Calculate the cost of X and Y Departments using the Continuous Distribution Method
b. Calculate the cost of X and Y Departments using the Simultaneous Equation Method
SUITABILITY OF DIFFERENT OVERHEAD ABSORPTION OR RECOVERY RATES

One of the most important facts about Overheads is that they are incurred OVER TIME.

This means that the 2 most accurate methods of recovering overheads will be:

**Direct Labour Hour Rate**  most suitable for labour intensive jobs

**Direct Machine Hour Rate**  most suitable for machine intensive jobs

---

DC Limited is an engineering company which uses job costing to attribute costs to individual products and services provided to its customers. It has commenced the preparation of its fixed production overhead cost budget for 2001 and has identified the following costs:

<table>
<thead>
<tr>
<th></th>
<th>(£000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machining</td>
<td>600</td>
</tr>
<tr>
<td>Assembly</td>
<td>250</td>
</tr>
<tr>
<td>Finishing</td>
<td>150</td>
</tr>
<tr>
<td>Stores</td>
<td>100</td>
</tr>
<tr>
<td>Maintenance</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td><strong>1,180</strong></td>
</tr>
</tbody>
</table>

The stores and maintenance departments are production service departments. An analysis of the services they provide indicates that their costs should be apportioned accordingly:

<table>
<thead>
<tr>
<th></th>
<th>Machining</th>
<th>Assembly</th>
<th>Finishing</th>
<th>Stores</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stores</td>
<td>40%</td>
<td>30%</td>
<td>20%</td>
<td>—</td>
<td>10%</td>
</tr>
<tr>
<td>Maintenance</td>
<td>55%</td>
<td>20%</td>
<td>20%</td>
<td>5%</td>
<td>—</td>
</tr>
</tbody>
</table>

The number of machine and labour hours budgeted for 2001 is:

<table>
<thead>
<tr>
<th></th>
<th>Machining</th>
<th>Assembly</th>
<th>Finishing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine hours</td>
<td>50,000</td>
<td>4,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Labour hours</td>
<td>10,000</td>
<td>30,000</td>
<td>20,000</td>
</tr>
</tbody>
</table>

(a) Calculate appropriate overhead absorption rates for each production department for 2001. (9 marks)
All the other Overhead Absorption bases generally do not allow for the time element but nonetheless are often used:

**Percentage of Direct Wages**

Where there is only slight variation in the rates of pay for different grades of labour this method will produce similar results to the direct labour rate.

**Percentage of Direct Materials**

There is obviously no relationship between the cost of raw materials and overheads. For example, rent and rates and electricity do not change simply because the cost of raw materials have changed.

**Percentage of Prime Cost**

Same reasons as for the percentage of direct wages and percentage of direct material overhead absorption rates.

**Rate per Unit Produced**

Since the Cost units are likely to have different production processes and different lengths of time in the production processes it would not be suitable to apply the same cost unit absorption rate to all the different products produced.
ACTUAL OVERHEADS AND PREDETERMINED/BUDGETED OVERHEADS

A difficulty in using overhead absorption or recovery rates in practice is that you will not know what the actual overheads are until after the accounting period is finished – for example, a month or year.

But since you have to charge overheads onto the job when it is done or indeed even before it is done, particularly if the customer wants an estimate of how much the job will cost, then you will have to use some method of "guessing" what the overheads will be.

The way round this problem is to use PREDETERMINED or BUDGETED Overhead Costs.

This is simply an estimate of what overhead costs will be in the next financial year based on an extension of what they were in the past year after allowing for:

- any anticipated increases or decreases in production, and
- any anticipated price increases.
What this means is that when we come to the end of the accounting period the actual overhead costs incurred will in all probability differ from the overheads absorbed into the cost units.

If the actual overheads for the accounting period are **greater than** the overheads absorbed then we will have **underabsorbed** costs and so we will have to make an additional charge for the difference to the Costing Profit and Loss Account.

On the other hand, if the actual overheads for the accounting period are **less than** the overheads absorbed then we will have **overabsorbed** costs and so we will have to make an adjustment by crediting the gain to the Costing Profit and Loss Account.

**EXAMPLE – OVERHEAD UNDERABSORBED**

<table>
<thead>
<tr>
<th>Cost Centre A</th>
<th>Budgeted Data</th>
<th>Actual Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overheads</td>
<td>Rs. 50,000</td>
<td>Rs. 52,000</td>
</tr>
<tr>
<td>Direct Labour Hours</td>
<td>5,000 hours</td>
<td>5,050 hours</td>
</tr>
</tbody>
</table>

Calculate the **underabsorption** of overheads

**Overhead absorbed** =
actual direct labour hours x budgeted overhead rate

**Overhead over / under absorbed** =
actual overheads incurred – overheads absorbed
Step 1

Calculate the Budgeted Overhead Rate based on Direct Labour Hours.

Budgeted Overheads / Direct Labour Hours
Rs. 50,000 / 5,000 hours = Rs. 10 per Labour Hour

Step 2

Calculate the Overhead Absorbed using the rate from Step 1 and the Actual Hours worked:

Overhead Absorbed = 5,050 hours x Rs.10 per hour = Rs.50,500

Step 3

Compare this Budgeted Cost with the Actual Cost

Overhead Underabsorbed = Rs. 52,000 – Rs. 50,500 = Rs. 1,500

As a result the Profit and Loss Account would be charged with an expense of Overhead Underabsorbed of Rs.1,500.
**EXAMPLE – OVERHEAD OVERABSORBED**

<table>
<thead>
<tr>
<th>Cost Centre A</th>
<th>Budgeted Data</th>
<th>Actual Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overheads</td>
<td>Rs.50,000</td>
<td>Rs.49,400</td>
</tr>
<tr>
<td>Direct Labour Hours</td>
<td>5,000 hours</td>
<td>4,950 hours</td>
</tr>
</tbody>
</table>

Calculate the overabsorption of overheads.

Overhead absorbed =
actual direct labour hours x budgeted overhead rate

Overhead over / under absorbed =
actual overheads incurred – overheads absorbed

**Step 1**

Calculate the Budgeted Overhead Rate based on Direct Labour Hours.

\[
\frac{\text{Budgeted Overheads}}{\text{Direct Labour Hours}} = \text{Rs.10 per Labour Hour}
\]

**Step 2**

Calculate the Overhead Absorbed using the rate from Step 1 and the Actual Hours worked:

\[
\text{Overhead Absorbed} = 4,950 \text{ hours} \times \text{Rs.10 per hour} = \text{Rs.49,500}
\]
Step 3

Compare this Budgeted Cost with the Actual Cost

Overhead Overabsorbed = Rs.49,400 - Rs.49,500 = Rs.100

As a result the Profit and Loss Account would be charged with an expense of Overhead Overabsorbed of Rs.100.

Class Exercise 05

There are two production cost centres (Assembly and Finishing) and three service cost centres in a factory. Production overheads are absorbed, using predetermined rates, on the following bases:

Assembly – direct labour hours
Finishing – machine hours

In period six the actual overheads incurred in the two production cost centres, including the reapportionment of the overheads of the three service cost centres, and the actual activity are:

<table>
<thead>
<tr>
<th></th>
<th>Assembly</th>
<th>Finishing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overheads</td>
<td>$62,130</td>
<td>$26,860</td>
</tr>
<tr>
<td>Activity</td>
<td>8,760 direct labour hours</td>
<td>1,690 machine hours</td>
</tr>
</tbody>
</table>

The budgets for period six are:

<table>
<thead>
<tr>
<th></th>
<th>Assembly</th>
<th>Finishing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overheads</td>
<td>$61,320</td>
<td>$27,280</td>
</tr>
<tr>
<td>Activity</td>
<td>8,400 direct labour hours</td>
<td>1,760 machine hours</td>
</tr>
</tbody>
</table>

Required:

Calculate, for each production cost centre for the period, the:

(a) overhead absorption rate; (3 marks)
(b) overhead absorbed; (4 marks)
(c) overhead over/under absorption. (6 marks)
A manufacturing company has two production cost centres (Departments A and B) and one service cost centre (Department C) in its factory.

A predetermined overhead absorption rate (to two decimal places of £) is established for each of the production cost centres on the basis of budgeted overheads and budgeted machine hours.

The overheads of each production cost centre comprise directly allocated costs and a share of the costs of the service cost centre.

Budgeted production overhead data for a period is as follows:

<table>
<thead>
<tr>
<th></th>
<th>Department A</th>
<th>Department B</th>
<th>Department C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocated costs</td>
<td>£237,860</td>
<td>£374,450</td>
<td>£103,970</td>
</tr>
<tr>
<td>Apportioned costs</td>
<td>£45,150</td>
<td>£58,820</td>
<td>£103,970</td>
</tr>
<tr>
<td>Machine hours</td>
<td>13,780</td>
<td>16,110</td>
<td></td>
</tr>
<tr>
<td>Direct labour hours</td>
<td>16,360</td>
<td>27,390</td>
<td></td>
</tr>
</tbody>
</table>

Actual production overhead costs and activity for the same period are:

<table>
<thead>
<tr>
<th></th>
<th>Department A</th>
<th>Department B</th>
<th>Department C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocated costs</td>
<td>£219,917</td>
<td>£267,181</td>
<td>£103,254</td>
</tr>
<tr>
<td>Machine hours</td>
<td>13,672</td>
<td>16,963</td>
<td></td>
</tr>
<tr>
<td>Direct labour hours</td>
<td>16,402</td>
<td>27,506</td>
<td></td>
</tr>
</tbody>
</table>

70% of the actual costs of Department C are to be apportioned to production cost centres on the basis of actual machine hours worked and the remainder on the basis of actual direct labour hours.

Required:
(a) Establish the production overhead absorption rates for the period. (3 marks)
(b) Determine the under- or over-absorption of production overhead for the period in each production cost centre. (Show workings clearly.) (12 marks)
(c) Explain when, and how, the repeated distribution method may be applied in the overhead apportionment process. (5 marks) (Total 20 marks)

There are two production cost centres (PCC1 and PCC2) and one service cost centre (SOC1) in a factory. Budgeted overhead costs for a period are listed below:

<table>
<thead>
<tr>
<th></th>
<th>PCC1</th>
<th>PCC2</th>
<th>SOC1</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs allocated:</td>
<td>$26,930</td>
<td>$25,770</td>
<td>$20,700</td>
<td>$73,400</td>
</tr>
<tr>
<td>Costs to be apportioned:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factory manager's salary</td>
<td></td>
<td></td>
<td></td>
<td>$43,200</td>
</tr>
<tr>
<td>Building maintenance costs</td>
<td></td>
<td></td>
<td></td>
<td>$30,000</td>
</tr>
<tr>
<td>Machine depreciation</td>
<td></td>
<td></td>
<td></td>
<td>$13,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$332,600</td>
</tr>
</tbody>
</table>

Additional information:
- Number of staff:
  - Direct: 10, 6, 0, 16
  - Indirect: 4, 2, 5, 11
- Floor area (m²): 260, 140, 100, 500
- Machine value ($000): 110, 80, 0, 190

It is estimated that the work done by SOC1 can be attributed 70% to PCC1 and 30% to PCC2.

Each of the production staff works 40 hours per week for 50 weeks during the period.

Required:
(a) Calculate the total of the allocated, apportioned and re-apportioned overheads of each production cost centre. (10 marks)

(b) Calculate a direct labour hour overhead absorption rate for each production cost centre. (6 marks) (16 marks)
A company has three production cost centres (P1, P2 and P3) and two service cost centres (S1 and S2) in its factory. The actual production overhead costs for a period, totaling $487,430, have been allocated and apportioned to cost centres as follows:

<table>
<thead>
<tr>
<th>Production Cost Centers</th>
<th>Service Cost Centers</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>P2</td>
</tr>
<tr>
<td>Rs. 176,860</td>
<td>Rs. 96,250</td>
</tr>
</tbody>
</table>

The overheads of service cost centre S1 are reapportioned on the basis of the number of materials requisition notes (MRNs) raised in the period. The overheads of service cost centre S2 are reapportioned on the basis of the number of employees in the other cost centres. The following additional information is available for the period:

<table>
<thead>
<tr>
<th>Cost Center</th>
<th>Number of Employees</th>
<th>No. of MRNs</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>20</td>
<td>4,970</td>
</tr>
<tr>
<td>P2</td>
<td>25</td>
<td>3,550</td>
</tr>
<tr>
<td>P3</td>
<td>50</td>
<td>5,680</td>
</tr>
<tr>
<td>S1</td>
<td>08</td>
<td></td>
</tr>
<tr>
<td>S2</td>
<td>05</td>
<td></td>
</tr>
</tbody>
</table>

Required:
- Reapportion the service cost centre overheads.
- The predetermined production overhead rates for the period, used to absorb overheads, are:
  - P1: Rs. 24.60 per machine hour
  - P2: Rs. 13.40 per direct labour hour
  - P3: Rs. 10.80 per direct labour hour

Machine hours and direct labour hours in each production cost centre are:

<table>
<thead>
<tr>
<th>Cost centre</th>
<th>Machine hours</th>
<th>Direct labour hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Budget</td>
<td>Actual</td>
</tr>
<tr>
<td>P1</td>
<td>8,100</td>
<td>8,250</td>
</tr>
<tr>
<td>P2</td>
<td>1,960</td>
<td>1,880</td>
</tr>
<tr>
<td>P3</td>
<td>3,610</td>
<td>3,720</td>
</tr>
</tbody>
</table>

Required:
- Calculate for the period for each production cost centre:
  1. The amount of overheads absorbed
  2. The amount of any over or under absorption of overheads