

Absorption Costing

Lecture examples

EXAMPLE: OVERHEAD APPORTIONMENT

Millie Ltd has incurred the following overhead costs.

	£'000
Depreciation of factory	100
Factory repairs and maintenance	60
Factory office costs (treat as production overhead)	150
Depreciation of equipment	80
Insurance of equipment	20
Heating	39
Lighting	10
Canteen	90
	<u>549</u>

Information relating to the production and service departments in the factory is as follows.

	<i>Department</i>			
	<i>Production</i>	<i>Production</i>	<i>Service</i>	<i>Service</i>
	<i>1</i>	<i>2</i>	<i>100</i>	<i>101</i>
Floor space (square metres)	1,200	1,600	800	400
Volume (cubic metres)	3,000	6,000	2,400	1,600
Number of employees	30	30	15	15
Book value of equipment	£30,000	£20,000	£10,000	£20,000

Determine how the overhead costs should be apportioned between the four departments.

ANSWER

Costs are apportioned using the following general formula.

$$\frac{\text{Total overhead cost}}{\text{Total value of apportionment base}} \times \text{value of apportionment base of cost centre}$$

$$\text{For example, heating for department 1} = \frac{£39,000}{13,000} \times 3,000 = £9,000$$

<i>Item of cost</i>	<i>Basis of apportionment</i>	<i>Total cost</i>	<i>To Department</i>			
			<i>1</i>	<i>2</i>	<i>100</i>	<i>101</i>
		£	£	£	£	£
Factory depreciation	(floor area)	100	30.0	40	20.0	10.0
Factory repairs	(floor area)	60	18.0	24	12.0	6.0
Factory office costs	(number of employees)	150	50.0	50	25.0	25.0
Equipment depreciation	(book value)	80	30.0	20	10.0	20.0
Equipment insurance	(book value)	20	7.5	5	2.5	5.0
Heating	(volume)	39	9.0	18	7.2	4.8
Lighting	(floor area)	10	3.0	4	2.0	1.0
Canteen	(number of employees)	90	30.0	30	15.0	15.0
Total		<u>549</u>	<u>177.5</u>	<u>191</u>	<u>93.7</u>	<u>86.8</u>

EXAMPLE: APPORTIONING SERVICE COST CENTRE COSTS TO PRODUCTION COST CENTRES

Mac Ltd incurred the following overhead costs.

	<i>Production departments</i>		<i>Stores department</i>	<i>Maintenance department</i>
	<i>X</i>	<i>Y</i>		
	£	£	£	£
Allocated costs	6,000	4,000	1,000	2,000
Apportioned costs	2,000	1,000	1,000	500
	<u>8,000</u>	<u>5,000</u>	<u>2,000</u>	<u>2,500</u>

The maintenance department worked 500 hours for department X and 750 hours for department Y. Production department X raised 12,000 material requisitions. Department Y raised 8,000 material requisitions.

Calculate the total production overhead costs of departments X and Y.

SOLUTION

<i>Service department</i>	<i>Basis of apportionment</i>	<i>Total cost</i>	<i>Dept X</i>	<i>Dept Y</i>
		£	£	£
Stores	Number of requisitions	2,000	1,200	800
Maintenance	Hours	2,500	1,000	1,500
		4,500	2,200	2,300
Previously allocated and apportioned costs		13,000	8,000	5,000
Total overhead		<u>17,500</u>	<u>10,200</u>	<u>7,300</u>

Never forget to include the directly allocated costs when determining overheads to be apportioned.

EXAMPLE: OVERHEAD ABSORPTION

The budgeted production overheads and other budget data of Calculator Ltd are as follows.

<i>Budget</i>	<i>Production dept 1</i>	<i>Production dept 2</i>
Overhead cost	£36,000	£5,000
Direct materials cost	£32,000	
Direct labour cost	£40,000	
Machine hours	10,000	
Direct labour hours	18,000	
Units of production		1,000

Calculate the absorption rate using the various bases of apportionment.

ANSWER

(a) Department 1

- (i) Percentage of direct materials cost $\frac{£36,000}{£32,000} \times 100\% = 112.5\%$
- (ii) Percentage of direct labour cost $\frac{£36,000}{£40,000} \times 100\% = 90\%$
- (iii) Percentage of prime cost $\frac{£36,000}{£72,000} \times 100\% = 50\%$
- (iv) Rate per machine hour $\frac{£36,000}{10,000 \text{ hrs}} = £3.60 \text{ per machine hour}$
- (v) Rate per direct labour hour $\frac{£36,000}{18,000 \text{ hrs}} = £2 \text{ per direct labour hour}$

(b) The department 2 absorption rate will be based on units of output.

$$\frac{£5,000}{1,000 \text{ units}} = £5 \text{ per unit produced}$$