

Unit or Output CostingUnit Costing

Unit costing is one of the methods used to determine the cost of product. It is used to calculate the total cost & cost per unit of the output.

Calculations

$$a) \text{ Cost per unit} = \frac{\text{Total cost}}{\text{Sales Units}}$$

$$b) \text{ Sales per unit} = \text{Opening stock} + \text{Production units} - \text{Closing stock units.}$$

$$c) \text{ Total cost} = \text{Prime Cost} + \text{Overhead.}$$

$$= (\text{Direct wage} + \text{Direct wage} + \text{Direct expense}) \\ + \text{Overhead (Factory overhead} + \text{office \& Admin. overhead} \\ + \text{selling \& Distribution overhead.)}$$

$$d) \text{ Stock or Inventory} \Rightarrow \text{Amount of unsold or unused goods.}$$

$$e) \text{ Types of stock} \Rightarrow \begin{array}{l} \text{Opening stock (Exp.) [To be added]} \\ \text{Closing stock (Assets) [To be deducted]} \end{array}$$

$$f) \text{ Forms of stock} \Rightarrow \begin{array}{l} \text{stock of raw materials} \\ \text{stock of work in progress.} \\ \text{stock of finished goods.} \end{array}$$

Home Work Problems

HW-1

Partial Cost Sheet

Output : units.

Particulars	Details	Total
Opening stock of raw materials	25,000	
Add: Purchase of raw materials	105,000 50,000	
Freight and duties on purchase	5,000	
Less: Closing stock of raw materials	20,000	
Cost of Raw Materials		115,000

HW-2

Partial Cost Sheet

Output : units

Particulars	Details	Amount
Opening stock of raw materials	15,000	
Add: Purchase of raw materials	80,000	
Freight on materials purchased	4,000	
Less: Closing stock of raw materials	28,000	
a) Cost of Raw Materials		71,000
Add: Direct wages	35,000	
Direct expenses	5,000	
	40,000	40,000
b) Prime Cost		111,000

HW-3

Partial Cost Sheet
Output : - - - - units

Particulars	Details	Amount
Opening stock of raw materials	10,000	
Add: Purchase of raw materials	85,000	
Carriage on purchases	5,000	
Cost of Raw Materials		100,000
Add: Manufacturing wages	50,000	
Direct expenses	20,000	
	70,000	70,000
a) Prime cost		170,000
Add: Factory power	5,000	
Indirect wages	3,000	
Depreciation on machinery	5,000	
	13,000	13,000
b) Factory Cost		183,000

HW-4

Partial Cost Sheet
Output : - - - - units

Particulars	Details	Amount
Excise duty	3500	
Direct materials	95,000	
Direct expenses	10500	
Direct wages	65,000	
a) Prime cost		174,000
Add: Factory (work) overhead		
Work managers salary	7000	
Depreciation on factory building	3500	
Factory rent and rates	8000	

Factory lighting	2,400	
Power	5,000	
Fuel	14,500	
Factory insurance	1,500	
Indirect materials	1,900	
cleaning charges	14,000	
Foreman salaries	2000	
Coal and coke	800	
Estimating expenses	1500	
Storekeeper's salaries	1600	
Depreciation on plant & machinery	18,1750	
Factory stationery	200	
Repair & maintenance on factory plant	1700	
Supervision	2400	
Belting, monomials and repairs	400	
	67,650	
Add: Opening stock of work in progress	10,000	
closing stock of work in progress	(12,000)	
	(2,000)	65,650
b) Work cost		230,650

HW-5

Partial Cost Sheet
Output: ---- units

Particulars	Amount	Amount
Direct materials purchased	50,000	
Direct labour	40,000	
a) Prime cost		90,000
Add: Factory overheads		
Supervisor's salary	12,000	
Property tax on factory building	5000	

Depreciation on plant and machinery	10,000	
Factory telephone	4,500	
Motive power	5,000	
Royalty	7,000	
Laboratory expenses	7,500	
Gas and water	3,500	
	54,500	
Less: Sale of scrap	10,000	44,500
b) Factory cost		134,500
Add: Office and Administrative overheads		
Director's fee	5,000	
Printing and stationery	4,000	
Depreciation on furniture	2,000	
Postage and telegram	3,500	
Audit fees	1,500	
Bank charges	500	
Insurance premium	4,000	
Office salaries	15,000	
Electricity charges	2,500	
Establishment charges	4,000	
Legal charges	1,200	
Repair of office	6,000	
General expenses	4,000	52,200
Cost of Production		186,700

HW-6

Partial Cost Sheet

Output: - - - units

Particulars	Details	Amount
Opening stock of Raw materials	20,000	
Add: Raw materials purchased	200,000	
Carriage on purchases	25,000	
	245,000	
Less: Closing stock of raw materials	10,000	
Cost of materials consumed		235,000
Add: Productive wages	100,000	100,000
a) Prime Cost		335,000
Add: Factory (work) overheads		
Motive power	4500	
Factory supervision	22,000	
Factory electricity	6000	32,500
b) Work cost		367,500
Add: Office and Administrative overheads		
Audit fees	4000	
Office director's fees	36,000	
Depreciation on furniture	3000	
Printing and stationery	6000	
Office rent	13,000	
Administrative expenses	27,000	
c) Cost of production		466,500
Add: Opening stock of finished goods		25,000
Closing stock of finished goods		(15,000)
d) Cost of goods sold		466,500

HW-7

Cost Sheet

Output : ----- units.

Particulars	Details	Amount
Opening Stock of raw materials	50,000	
Add: Cost of materials purchased	500,000	
	550,000	
Less: Closing stock of raw materials	40,000	
a) Cost of materials consumed		510,000
Add: Direct wages		200,000
b) Prime Cost		710,000
Add: Factory overheads		
Factory rent and insurance	40,000	
Factory cleaning	3,000	
Motive power	12,000	
	55,000	
Add: Opening stock of work in progress	30,000	
Closing stock of work in progress	(35,000)	
	(5,000)	50,000
c) Factory Cost		760,000
Add: General and Administrative overheads		
Depreciation on office furniture	5,000	
Office salaries	30,000	
General expenses	15,000	50,000
d) Cost of production		810,000
Add: Opening stock of finished goods		22,000
Closing stock of finished goods		(26,500)
e) Cost of goods sold		805,500
Add: Selling and distribution overheads		
Salesman salaries	10,000	
Carriage outward	6,000	
Rent of warehouse	5,000	

Depreciation of delivery van	4,000	25,000
f) Cost of sales		830,000
Add: Profit		69,000
Sales		900,000

HW-8

Cost Sheet

Output : ----- units

Particulars	Details	Amount
Opening stock of raw materials	10,000	
Add: materials purchased	250,000	
Carriage on purchase	4,000	
Less Closing stock of raw materials (12,000)		
a) Cost of materials consumed		252,000
Add: Labour	48,000	
Chargeable expenses	8,000	56,000
b) Prime cost		308,000
Add: Factory overhead		
Factory rent	4,000	
Indirect materials	1,000	
Indirect wages	10,000	
Other work expenses	7,000	22,000
c) Factory Cost Overhead		330,000
≡ Add: Opening Stock of work in Progress	7,000	
Closing stock of work in progress	(5,000)	
Cost	32,000	
c) Factory Cost		340,000
Add: Office and Administration expenses		
General expenses	4,000	
Office lighting	8,200	
Communication charges	3,700	

Establishment expenses	12,100	
Printing and stationery	6,000	34,000
d) Cost of production		374,000
Add: Opening stock of finished goods	27,000	
Less: closing stock of finished goods	21,000	
		(4,000)
e) Cost of goods sold		370,000
Add: selling and distribution overheads		
Free sample distribution	3,000	
Advertising	3,000	
Rent of warehouse	2,000	
Travellers' salary	5,000	
Up-keep of delivery van	4,000	17,000
f) Cost of sales		387,000
g) Add: Profit		63,000
Sales		450,000

h) % of factory O.H. on direct wages = $\frac{\text{Factory OH}}{\text{Direct wages}} \times 100$

$$= \frac{30,000}{48,000} \times 100$$

$$= 62.5\%$$

i) % of office overhead on factory cost = $\frac{\text{Office OH}}{\text{Factory cost}} \times 100$

$$= \frac{34,000}{340,000} \times 100$$

$$= 10\%$$

j) % of selling and distribution O.H. on factory cost = $\frac{\text{Selling and distribution O.H.}}{\text{Factory cost}} \times 100$

= $\frac{17,000}{340,000} \times 100$
= 5%

k) % of profit on sales = $\frac{\text{Profit}}{\text{Sales}} \times 100\%$
= $\frac{63,000}{450,000} \times 100$
= 14%

HW-9

Cost Sheet

Output : 8,000 units

Particulars	Detail	Total
Opening stock of raw materials	25,000	
Add: Purchase of raw materials	180,000	
Carriage on purchase	12,000	
	217,000	
Less: Closing stock of raw material	15,000	202,000
a) Cost of materials consumed		202,000
Add: Direct materials		60,000
b) Prime cost		262,000
Add: Factory overheads		12,000
Add: Opening stock of work in progress		30,000
Less: Closing stock of work in progress		22,000
c) Factory cost		282,000
Add: Office and Administrative overheads		10,000
d) Cost of production		292,000

Add: Opening stock of finished goods	20,000
less: Closing stock of finished goods	15,000
e) Cost of goods sold	297,000
Add: Selling and distribution overheads ^(5% on work cost)	14,100
f) Cost of sales	311,100
g) Add: Profit (25% on total cost)	77,775
h) Sales	388,875

HW-10

Cost Sheet Output: 8,000 units

Particulars	Details	Total
Opening stock of raw materials	25,000	
Add: Purchase of raw materials	200,000	
carriage and duties	10,000	
	235,000	
less: Closing stock of raw materials	15,000	
a) Cost of materials consumed		220,000
Add: Direct wages		80,000
b) Prime cost		300,000
Add: Factory overheads (40% of direct wage)	32,000	
Add: Opening stock of work in progress	30,000	
less: closing stock of work in progress	22,000	40,000
c) Factory cost		340,000
Add: Office and administrative overhead ^(50% of factory cost)	34,000	
d) Cost of production		374,000
Add: Opening stock of finished goods		93,500
less: closing stock of finished goods		46,750
e) Cost of goods sold		420,750
Add: selling and distribution overheads		38,250
Cost of sales / Total cost		459,000
Add: Profit (25% on total cost)		114,750
f) Sales		573,750

Working Note

$$\text{Cost of production per unit} = \frac{\text{Cost of production}}{\text{Production units}}$$

$$= \frac{874,000}{8,000}$$

$$= \text{Rs } 46.75$$

$$\begin{aligned} \text{Sales units} &= \text{Opening stock} + \text{Production units} - \text{closing stock} \\ &= 2000 + 8000 - 1000 \\ &= 9000 \end{aligned}$$

HW-11

Cost Sheet
Output: 8000 units

Particulars	Detail	Amount
Cost of raw materials		40,000
Add: Direct wages		20,000
Prime cost		60,000
Add: ^{20% of prime cost} Factory (work) overhead		12,000
Factory cost		72,000
Add: Office & Administrative overheads		7,200
Cost of production		79,200
Add: Opening stock of finished goods		4,950
Less: closing stock of finished goods		24,750
Cost of goods sold		59,400
Add: Selling & distribution overheads		12,000
Cost of sales		71,400

Working Note

$$\begin{aligned}\text{Cost of production per unit} &= \frac{\text{Cost of production}}{\text{Output units}} \\ &= \frac{79,200}{8,000} \\ &= \text{Rs } 9.9\end{aligned}$$

$$\text{Sales unit} = \text{Opening stock} + \text{Production units} - \text{Closing Stock}$$

$$\text{Or, } 6000 = 500 + 8000 - \text{closing stock}$$

$$\therefore \text{Closing stock} = \cancel{8500} \text{ units } 2500 \text{ units.}$$

$$\text{Cost per unit} = \frac{\text{Cost of sales}}{\text{Sales unit}} = \frac{71,400}{6,000} = \text{Rs } 11.9$$

HW-12

Cost Sheet

Output: - - - - units

Particulars	Detail	Total
Opening stock of raw materials	10,000	
Purchase of raw materials	80,000	
Freight on purchases	15,000	
less: Closing stock of raw materials	5,000	
a) Cost of materials consumed		100,000
Add: Direct wages		120,000
b) Prime cost		220,000
Add: Factory overheads		60,000
b) Factory cost		280,000
Add: Office & administrative overhead		32,000

c) Cost of production	912,000
Add: Opening stock of finished goods	24,000
less: Closing stock of finished goods	28,800
d) Cost of goods sold	907,200
Add: Selling & distribution overheads	28,400
e) Cost of sales / Total cost	345,600
f) Add: Profit	28,400
g) Sales	384,000

Working Note

$$\text{Sales unit} = \text{Opening stock} + \text{Production unit} - \text{Closing stock}$$

$$\text{or, } 12,800 = 1,000 + \text{Production units} - 1,200$$

$$\therefore \text{Production units} = 13,000$$

$$\text{Cost of production per unit} = \frac{\text{Cost of production}}{\text{production units}}$$

$$= \frac{312,000}{13,000}$$

$$= \text{Rs } 24.$$

$$\text{Total Cost} + \text{Profit} = \text{Sales}$$

$$\text{or, } 345,600 + 10\% \text{ of Sales} = \text{Sales}$$

$$\text{or, } 345,600 + \frac{10 \text{ Sales}}{100} = \text{Sales}$$

$$\text{or, } 345,600 + 10 \text{ Sales} = 100 \text{ Sales}$$

$$\text{or, } \text{Sales} = \frac{345,600}{90}$$

$$\therefore \text{Sales} = 384,000$$

HW-13

Cost Sheet

Output : 4,000 units

Particulars	Detail	Amount
Purchase of raw materials	600,000	
Carriage on freight	25,000	
Cost of materials consumed		625,000
Add: Productive wages		200,000
Prime cost		825,000
Add: Factory overheads		
Indirect expenses		80,000
Factory cost		905,000
Add: Office and Administrative Overhead		
Establishment expenses		39,000
Cost of production		944,000
Add: opening stock of finished goods (2000 x 236)		472,000
less: Closing stock of finished goods (1000 x 236)		236,000
Cost of goods sold		11,80,000
Add: selling & distribution overhead (8% x 5000)		40,000
Cost of Sales		12,20,000
Add: Profit (20% on cost)		244,000
Sales		1464,000

Working Notes

$$\text{Sales unit} = \frac{\text{Opening stock} + \text{Production units} - \text{Closing stock}}{\text{}} \quad \text{or, } 5000 = \frac{\text{Opening stock} + 4000 - 1000}{\text{}}$$

$$\therefore \text{Opening stock} = 2000 \text{ units}$$

$$\text{Cost of production per unit} = \frac{\text{Cost of production}}{\text{Production units}}$$

$$= \frac{944,000}{4,000}$$

$$= \text{Rs } 236$$

HW-14

Cost Sheet Output: 4,000 units

Particulars	Details	Total
Opening stock of raw materials	20,000	
Add: Purchase of raw materials	280,000	
Less: Closing stock of raw materials	20,000	
Cost of materials consumed		290,000
Add: Direct wages		130,000
a) Prime cost		400,000
Add: Factory overheads		
Depreciation on plant & machinery	5,000	
Indirect materials	15,000	
Add: Opening stock of work in progress	30,000	
Less: Closing stock of work in progress	20,000	
b) Factory cost		30,000
Add: Office & administrative overheads		430,000
Salaries	10,000	
General expenses	12,000	
Audit fees	3,000	
Depreciation of office building	5,000	
c) Cost of production		20,000
Add: opening stock of finished goods		230,000
Less: closing stock of finished goods		0
Cost of goods sold		690,000
Add: Selling and distribution overheads		
Selling expenses	20,000	
Free sample distribution	6,000	
Depreciation on delivery van	4,000	
d) Cost of sales		30,000
e) Add: Profit		720,000
Sales (6000 x 150)		180,000
		900,000

Working Note

$$\begin{aligned}\text{Cost of production per unit} &= \frac{\text{Cost of production}}{\text{production units}} \\ &= \frac{460,000}{41,000} \\ &= \text{Rs. 115}\end{aligned}$$

$$\text{Sales unit} = \text{Opening stock} + \text{Production units} - \text{Closing stock.}$$

$$\begin{aligned}\text{or, } 6000 &= \text{Opening stock} + 4000 - \text{Closing stock.} \\ \text{or, } \text{Opening stock} - \text{Closing stock} &= 2000.\end{aligned}$$

$$\begin{aligned}\therefore \text{Opening stock} &= 2000 \text{ units} \\ \text{Closing stock} &= 0 \text{ units}\end{aligned}$$

HW-15

Cost Sheet

Output : 800 units

Particulars	Details	Total
Opening stock of raw materials	50,000	
Add: Purchase of raw materials	250,000	
Less: Closing stock of raw materials	40,000	
Cost of materials consumed		260,000
Add: Direct wages		150,000
a) Prime cost		
Add: Factory overheads		
Indirect supplies and wages	30,000	
Factory rent, rates and taxes	8,000	
Depreciation on plant and machinery	7,500	
Coal and coke	6,000	
	51,500	
Add: Opening stock of work in progress	20,000	
Less: Closing stock of work in progress	10,000	
		61,500

		471,500
b) Factory cost		40,500
Add: Office and Administrative overheads		512,000
c) Cost of production		0
Add: Opening stock of finished goods		64,000
less: Closing stock of finished goods		448,000
Cost of goods sold		
Add: Selling and distribution overhead		
Traveller's salary	4000	
Depreciation on delivery van	3000	
Other selling and distribution expense	18,000	25,000
		473,000
d) Cost of sales		118,250
e) Add: Profit (20% on sales)		591,250
Sales		

Working Notes

$$\begin{aligned}
 \text{Cost of production per unit} &= \frac{\text{Cost of production}}{\text{Production units}} \\
 &= \frac{512,000}{800} \\
 &= \text{Rs } 640
 \end{aligned}$$

$$\begin{aligned}
 \text{Sales unit} &= \text{Opening stock} + \text{Production units} - \text{Closing stock} \\
 \text{or, } 700 &= \overset{\text{OP}}{\text{O.S.}} + 800 - \text{C.I.} \\
 \text{or, } \text{OP} - \text{C.I.} &= -100 \\
 \therefore \text{Opening Stock} &= 0 \text{ units} \\
 \therefore \text{Closing Stock} &= 100 \text{ units}
 \end{aligned}$$

Also,

$$\begin{aligned}
 \text{f) Selling price per unit} &= \frac{\text{Total sales}}{\text{Sales unit}} \\
 &= \frac{591,250}{700}
 \end{aligned}$$

$$= \text{Rs } 844.64$$

		471,000
		40,500
b) Factory cost		
Add: Office and Administrative overheads		512,000
c) Cost of production		0
Add: Opening stock of finished goods		64,000
Less: Closing stock of finished goods		448,000
Cost of goods sold		
Add: Selling and distribution overhead		
Travellers' salary	4000	
Depreciation on delivery van	3000	
Other selling and distribution expenses	18,000	25,000
d) Cost of sales		473,000
e) Add: Profit (20% on sales)		118,250
Sales		591,250

Working Notes

$$\begin{aligned} \text{Cost of production per unit} &= \frac{\text{Cost of production}}{\text{Production units}} \\ &= \frac{512,000}{800} \\ &= \text{Rs } 640 \end{aligned}$$

$$\begin{aligned} \text{Sales unit} &= \text{Opening stock} + \text{Production units} - \text{Closing stock} \\ \text{or; } 700 &= \text{O.S.} + 800 - \text{C.I} \\ \text{or; } \text{OP} - \text{CI} &= -100 \\ \therefore \text{Opening stock} &= 0 \text{ units} \\ \therefore \text{Closing stock} &= 100 \text{ units} \end{aligned}$$

Also,

$$\begin{aligned} \text{f) selling price per unit} &= \frac{\text{Total sales}}{\text{Sales unit}} \\ &= \frac{591,250}{700} \\ &= \text{Rs } 844.64 \end{aligned}$$

Tender Sheet

HW-16

Cost Sheet

Output: ---- units

Particulars	Details	Amount
Direct materials		200,000
Direct wages		80,000
Prime Cost		280,000
Add: Factory overheads		60,000
Factory Cost		340,000
Add: Office and Administration Overhead		27,200
Total Cost		367,200

Tender Sheet

Output: ---- units

Particulars	Details	Amount
Cost of materials		20,000
Direct wages		8,000
Prime Cost		28,000
Add: Factory overhead (75% on direct wages)		6,000
Factory Cost (8% on factory cost)		34,000
Add: Office and Administration Overhead		2,720
Total Cost		36,720
Add: Profit (20% on cost)		7,344
Tender Price		44,064

Working Note

$$\begin{aligned} \% \text{ of factory overhead on direct wages} &= \frac{\text{Factory O.H.}}{\text{Direct wage}} \times 100\% \\ &= \frac{60,000}{80,000} \times 100\% \\ &= 75\% \end{aligned}$$

$$\% \text{ of office overhead on work cost} = \frac{\text{Office O.H.}}{\text{work cost}} \times 100\% = 8\%$$

HW-17

Cost Sheet

Output: 600 units

Particulars	Amount
Direct materials	240,000
Direct wages	100,000
Prime cost	340,000
Add: Factory overheads	75,000
Factory (work) cost	415,000
Add: office and Administration overheads	41,500
Cost of Production / C.O.G.S.	456,500
Add: Selling and distribution overheads	20,750
Total cost	477,250
Add: Profit	95,450
Sales	572,700

Tender Sheet

Output: 500 units

Particulars	Amount
Cost of materials	200,000
Direct wages	282,000
Prime cost	65,000
Add: Factory overheads (75% on Direct wages)	265,000
Factory (work) cost	48,750
Add: office and administration overhead (10% on work cost)	313,750
Cost of Production / C.O.G.S.	31,375
Add: Selling and distribution overhead (5% on work cost)	345,125
Total cost	15,687.5
Add: Profit (20% on Total cost)	360812.5
Tender Price	72162.5
	432,975

Working Notes

$$\begin{aligned}\% \text{ of factory overhead on direct wages} &= \frac{\text{Factory O.H.}}{\text{Direct wages}} \times 100 \\ &= \frac{75,000}{100,000} \times 100 \\ &= 75\%.\end{aligned}$$

$$\begin{aligned}\% \text{ of office overhead on work cost} &= \frac{\text{Office O.H.}}{\text{Work Cost}} \times 100\% \\ &= \frac{44,500}{415,000} \times 100\% \\ &= 10\%.\end{aligned}$$

$$\begin{aligned}\% \text{ of selling overhead on work cost} &= \frac{\text{Selling O.H.}}{\text{Work Cost}} \times 100\% \\ &= \frac{20,750}{415,000} \times 100\% \\ &= 5\%.\end{aligned}$$

$$\begin{aligned}\% \text{ of Profit on cost} &= \frac{\text{Profit}}{\text{Cost}} \times 100\% \\ &= \frac{95,450}{477,250} \times 100\% \\ &= 20\%.\end{aligned}$$

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HW-18

Cost Sheet

Output: 2,000 units

Particulars	Amount
Cost of materials	282,000
Direct labour	110,000
Prime Cost	392,000
Add: Factory overheads	98,000
Factory (work) cost	490,000
Add: Office and administrative overheads	49,000
Cost of Production / C.O.G.S	539,000
Add: Selling and distribution overheads	20,000
Total Cost	559,000

Tender Sheet

Output: 1,000 units

Particulars	Amount
Cost of materials	260,000
Direct labour	20,000
Prime Cost	80,000
Add: Factory overheads (25% on prime cost)	20,000
Factory (work) cost	100,000
Add: Office and administrative overheads	49,000
Cost of Production / C.O.G.S	149,000
Add: Selling and distribution overhead	10,000
Total Cost	159,000
Add: Profit (25% on quoted price)	53,000
Tender / Quoted Price	212,000

Working Notes

$$\begin{aligned}\text{Rate of factory overhead on prime cost} &= \frac{\text{Factory O.H.} \times 100\%}{\text{Prime Cost}} \\ &= \frac{98,000 \times 100}{392,000} \\ &= 25\%\end{aligned}$$

$$\begin{aligned}\text{Selling overhead per unit} &= \frac{\text{Total selling overhead}}{\text{Units produced}} \\ &= \frac{20,000}{2,000} \\ &= \text{Rs } 10.\end{aligned}$$

HW-19

Cost Sheet

Output: 500 units

Particulars	Amount
Cost of raw materials	25,000
Direct wages	15,000
Prime Cost	40,000
Add: Factory overheads	9,000
Factory (work) cost	49,000
Add: Office and administrative overheads	9,800
Cost of Production / C.O.G.S.	58,800
Add: Selling and distribution overheads	2,000
Total Cost	60,800
Add: Profit	12,160
Sales Revenue	72,960

Tender Sheet

Output: 250 units

Particulars	Amount
Cost of raw materials	13,750
Direct wages	6,750
Prime Cost	20,500
Add: Factory overheads	2,080
Factory (work) cost	4,500
Add: Office and administrative overheads	2,480
Cost of Production / C.O.G.S.	25,000
Add: Selling and distribution overheads	4,900
Total Cost	29,900
Add: Profit (20% on total cost)	5,980
Tender Price	35,880

Working Note

$$\text{Cost of raw material} = 28050$$

$$\text{Cost of raw materials per unit} = \frac{28050}{500}$$

$$= 56$$

$$\text{Cost after increase per unit} = ₹ 56 + 10\% \text{ of } ₹ 56$$

$$= ₹ 61.6$$

$$\text{Rate of factory overhead} = \frac{9000}{15000} \times 100\%$$

$$= 60\%$$

$$\text{Rate of office overhead} = \frac{9800}{49000} \times 100$$

$$= 20\%$$

$$\text{Selling O.H per unit} = \frac{2000}{500} \times 250$$

$$500$$

$$\text{Direct wages} = \text{Rs } 15000$$

$$\begin{aligned} \text{Direct wages per unit} &= \frac{\text{Direct wages}}{\text{Output unit}} \\ &= \frac{15000}{500} = \text{Rs } 30 \end{aligned}$$

$$\begin{aligned} \text{Rate of direct wages after decrease} &= \text{Rs } 30 - 10\% \text{ of Rs } 30 \\ &= \text{Rs } 27. \end{aligned}$$

$$\text{Rate of profit} = \frac{12160}{60800} \times 100\% = 20\%$$

HW-20

Tender sheet

Output: 200 units

Particulars	Amount
Direct material	8000
Direct wages	4000
Prime cost	12,000
Add: Factory overhead	2000
Factory (work) cost	14000
Add: office and administrative overheads	2800
Cost of Production / C.O.G.S	16,800
Add: Selling & distributive overhead	1400
Total Cost	18,200
Add: Profit	4,550
Tender price	22750

$$\begin{aligned} \text{Estimated cost per unit} &= \frac{\text{Total cost}}{\text{Output units}} \\ &= \frac{18,200}{200} \\ &= \text{Rs } 91 \end{aligned}$$

Working Notes

$$\text{Material Cost} = 40 \times 200 = \text{Rs } 8,000$$

$$\text{Wages} = 20 \times 200 = \text{Rs } 4,000$$

$$\text{Rate of F.O.H.} = \frac{10,000}{28,000} \times 100 = 40\%$$

$$\text{Increased by } 25\% = (40 + 25\% \text{ of } 40)\% \\ = 50\%$$

$$\text{Rate of Office O.H.} = \frac{13,000}{65,000} \times 100 = 20\%$$

$$\text{Rate of Selling O.H.} = \frac{6,500}{65,000} \times 100 = 10\%$$

$$\text{P.V.} = \frac{21,125}{84,500} \times 100 = 25\%$$

HW-21

Tender Sheet

Output: 1500 units

Particulars	Amount
Direct material	517,500
Direct wages	285,000
Direct expenses	150,000
Prime Cost	952,500
Add: Factory overheads	120,000
Factory (work) cost	1,072,500
Add: office and administrative overheads	108,000
Cost of Production/ C.O.G.S.	1,180,500
Add: Selling and distributive overhead	105,1840
Total Cost	12,86,340
Add: Profit	32,1585
Tender Price	16,07,925

Working Note

$$\text{Direct material} = \frac{300,000}{1000} \times 1500 + \frac{15}{100} \times \frac{300,000}{1000} \times 1500$$

$$= \text{Rs } 517800$$

$$\text{Direct wages} = \left(\frac{200,000}{1000} - 10 \right) \times 1500$$

$$= \text{Rs } 285000$$

Direct expenses

$$\frac{100,000}{1000} \times \frac{1500}{1500}$$

$$x = \text{Rs } 150,000$$

$$\text{Selling overhead per unit} = \frac{70180}{1000} = \text{Rs } 70.56$$

$$\text{Selling Overhead} = \text{Rs } 70.56 \times 1500 = \text{Rs } 105840$$

$$P = \frac{25}{100} \times 286340 = \text{Rs } 321585$$