

P-2 - 13-10-20.

Let us assume, No. of units of product m & N be x & y respectively.

Product	Machine Time	Artist Time	Profit
M	1.5 Hrs	2 hrs	₹ 5
N	2.5 Hrs.	1.5 hrs	₹ 4
Total	<u>80 Hrs.</u>	<u>70 hrs.</u>	

1] Objective function :

Maximize Profit = Maximize $Z = 5x + 4y$.

2] Subjected to :-

$1.5x + 2.5y \leq 80 \rightarrow$ Machine hrs.

$2x + 1.5y \leq 70 \rightarrow$ Artist hrs.

3] Non-negativity Constraint:
 $x \geq 0, y \geq 0$ or $x, y \geq 0$.

2] Let us assume, No. of units of product A & B be x & y respectively.

~~1] objec~~

Product	Machine Time	Artist Time	Profit
A	2 hrs	8 hrs	8 ₹
B	6 hrs	4 hrs.	15 ₹
	200 hrs	300 hrs.	

1] objective function :-

Maximize Sale = Maximize $Z = 8x + 15y$

2] Subject to :-

$2x + 6y \leq 200 \rightarrow$ Machine hrs.

$3x + 4y \leq 300 \rightarrow$ Artist hrs.

3] Non-negativity constraint.

$x \geq 0, y \geq 0$ or $x, y \geq 0$.

4] Given :-

Product	Machine hrs.	Pabrication hrs	Assembly hrs	Profit
A	1 hrs	5 hrs	3 hrs	₹80
B	2 hrs	4 hrs	1 hrs	₹100
Total.	720 hrs	1800 hrs	990 hrs	

Let us assume, No. of units to be produced be x & y respectively,

1] Objective function,

Maximize Profit = Maximize $Z = 80x + 100y$

2] Subject to :-

$$1x + 2y \leq 720 \rightarrow \text{Machine hrs.}$$

$$5x + 4y \leq 1800 \rightarrow \text{Fabrication hrs.}$$

$$3x + 1y \leq 990 \rightarrow \text{Assembly hrs.}$$

3] Non-Negatively Constraints,
 $x, y \geq 0.$

3] Given :-

Product	Materials kgs.	man hrs	machine hrs.	Profit
M	3 kgs	4	2	₹ 35
N	2 kgs	3	2	₹ 25
Total	350 kgs	600 hrs	550 hrs.	

Let us assume, No. of units to be produced x & y respectively.

1] Objective function.

$$\text{Maximize Sale} = \text{Maximize } Z = 35x + 25y.$$

2] Subject to :-

$$3x + 2y \leq 350 \rightarrow \text{Materials kgs.}$$

$$4x + 3y \leq 600 \rightarrow \text{Man hrs.}$$

$$2x + 2y \leq 550 \rightarrow \text{Machine hrs.}$$

3] Non-negatively Constraints.

$$x, y \geq 0.$$