a). SOURISH CHATTERJEE TUTORIAL -6
X ₁ = propertion of time devoted to i Pod cover Production
= iPhone
Y = itad.
of whole day i Phones, are produced then No. = 5000
- ri Pod - 11 _ = 6000
for cony Proposion 24, 2, 2,
i Phone wir a day i Pod _11 _ = [5000x1] i Pad _11 _ 3000 x3]
i Pad — 11 3000 x3] 30,000xy
Item that are produced in each. Week = 25,000 x2
Stem that are produced in each. Week = 25,000 x2 15000 x3
<u>~</u>
net Profit on each item { USD i Pod cover 6 USD i Phone -11- 10 USD i Pad -11-
6 USD Phone -11-
Total net Profet in a Week = 120000x + 150000x2
T 150 000 Mg
Objective is to Movemise this frofit
max 120000 x + 150000 x2 + 150000 x3. USD
S.t Controuts.
me constraint

ט

Constraint Set:

O Total storage capacity & 6000.

1 iPod cover takes = 45/1000 feet3.

1 iPod cover takes = 40/1000 feet3

1 i Pad cover takes = $\frac{210}{1000}$ feet 3.

We multiply each of the spaces with respective

1200×1 + 11257/2 + 3150 7/3 < 6000

2) ruinimum Production According to Agreemet.

i Pod Covers > 5,000

iPad covers. > 4,000

30000 ≥ 5000.

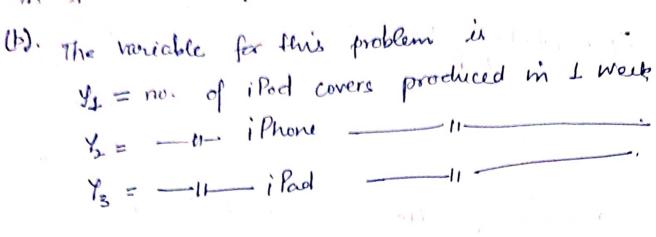
15000 23 > 4000

3 Constraits Put by demand,

30000 4 6 10,000 25000 X2 < 15,000 15000 13 < 8000

1 Posthuty Comboants

$$\begin{pmatrix} \chi_1 \\ \chi_2 \\ \chi_3 \end{pmatrix} \geqslant \begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}$$



net Profit = 441 + 64 + 10 /3 Objective is to maximise the profit homes.

Production Constraint.

In one week we can broduce max iPhone over = 30,000 i Pod cover = 25000 _ iPad cover= 15,000. 1 iPhone, is produced = 1 30,000

1.iPad ===

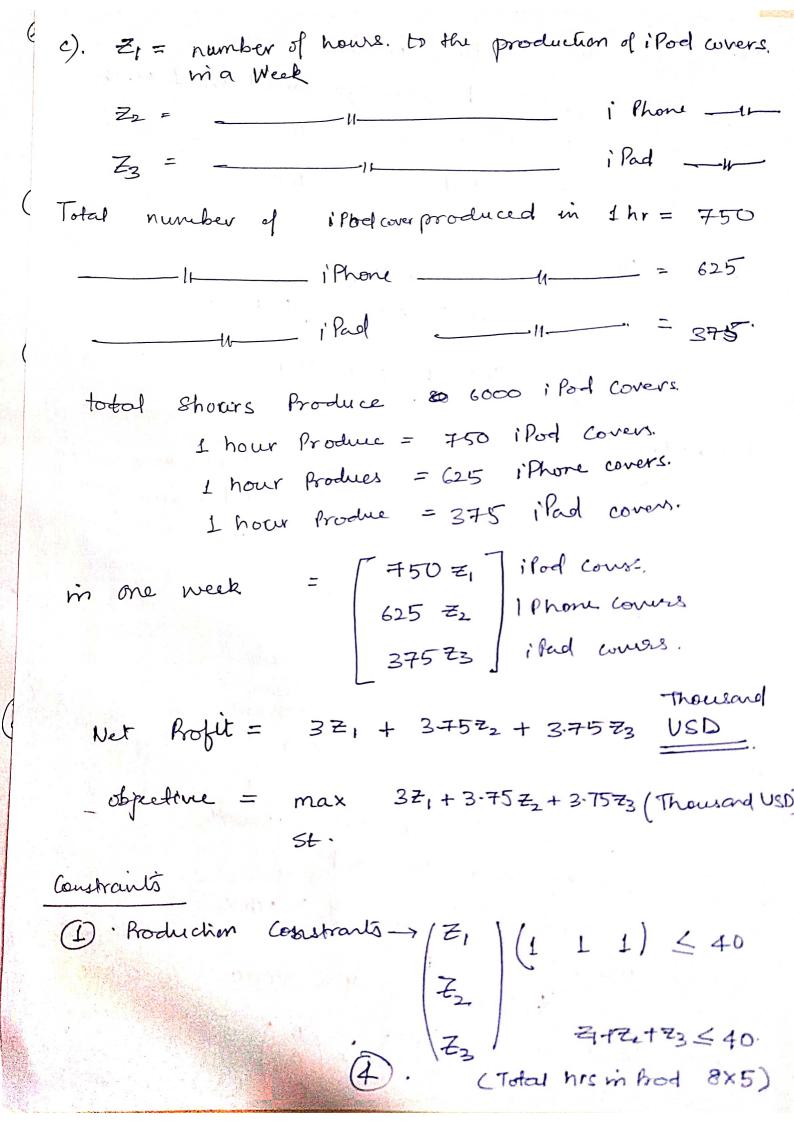
1 Production Contraint per week =>

$$\frac{1}{3000091} + \frac{1}{2500092} + \frac{1}{1500093} \leq 1.$$

(2) min Prod Agreement constrent.

3 Max Demand Constront.

 $\left(\frac{y_1}{y_2}\right) \geqslant \begin{pmatrix} 0\\0\\0 \end{pmatrix}$



1 Storage combrants

$$\frac{750 \times 40}{1000}$$
 $= 1 + 625 \times 45 \times 210 \times 210$

(3) Min Production Agreement Constrant.

(4) Max demand Constraints:

$$750 \ Z_1 \le 10000$$
 $625 \ Z_2 \le 15000$
 $375 \ Z_3 \le 8000$

$$\bigcirc$$
 +ve constraints $\begin{pmatrix} Z_1 \\ Z_2 \\ Z_1 \end{pmatrix} \geq \begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}$

(d) Relation ship between 24 x2 x3 and X, Z2 Z3.

2 - proportion of time in a day for an item.

Total there can be 40 hours of a week