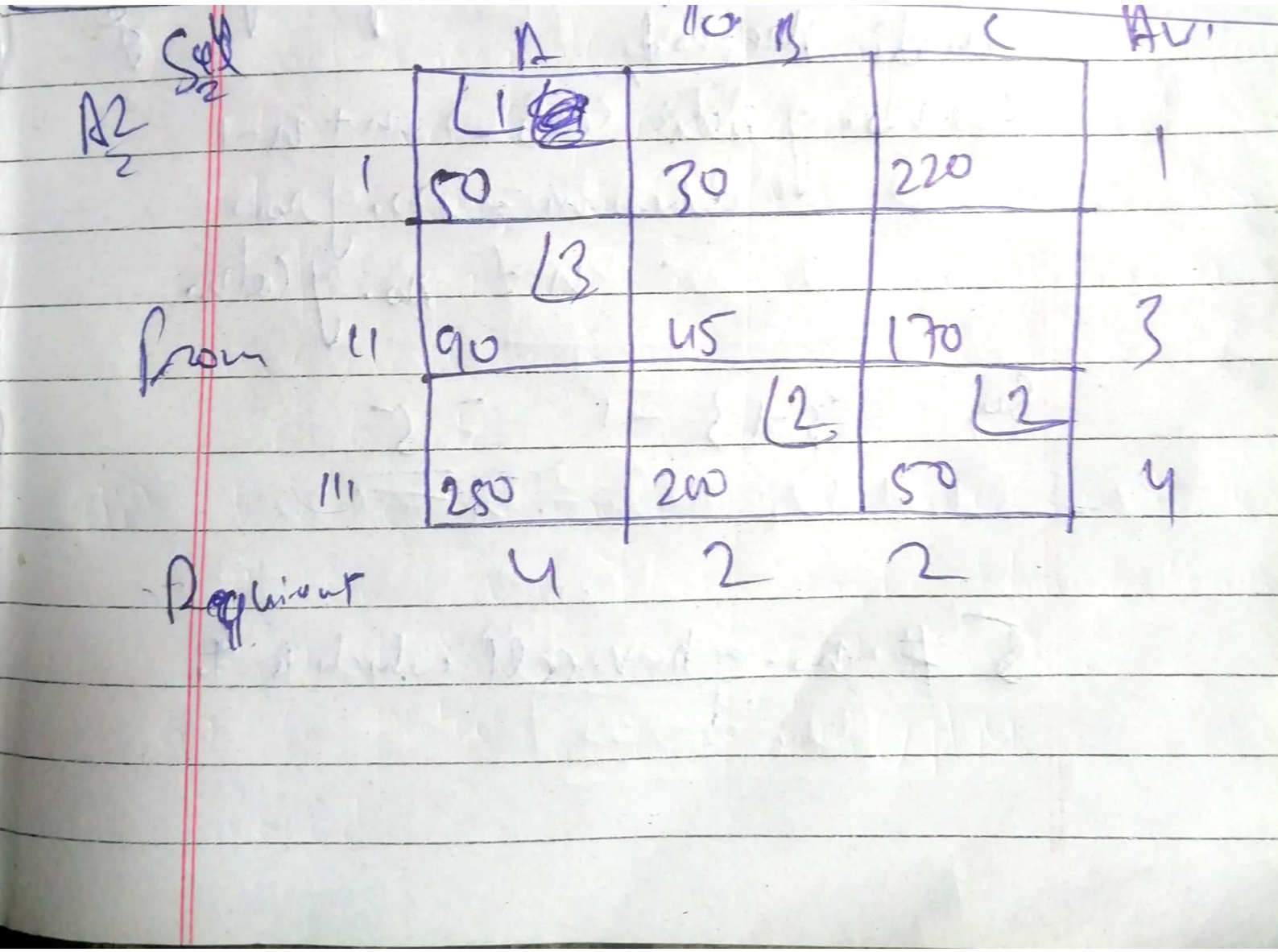

The basic feasible soln (B.F.S).

$\Rightarrow$ $50x_1 + 40x_3 + 200x_2 + 2x_{50}$

$\Rightarrow$ 820 Rs

Now, to test optimity by modi method,

the no. of basic cells = $m + n - 1$

where m = no. of row

n = no. of colm.

Eg $3 + 3 - 1 = 5$

5 $\neq$ no. of bas cell which is 4.

Then, it is the problem of degeneracy

We have allocated a small quantity $\epsilon > 0$

			u_i
1			-200
50	30	220	
3			-160
90	45	170	
ϵ	2	2	0
250	200	50	
v_j 250	200	50	

where u_i & v_j is obtained by

$$u_i + v_j = c_{ij}.$$

Let $u_3 = 0$.

$u_3 + v_3 = 50$

$0 + v_3 = 50$

$\boxed{v_3 = 50}$

$f_1 \quad u_3 + v_1 = 250$

$0 + v_1 = 250$

$\boxed{v_1 = 250}$

$f_2 \quad u_2 + v_3 = 200$

$0 + v_3 = 200$

$\boxed{v_3 = 200}$

$f_1 \quad u_1 + v_1 = 50$

$u_1 + 250 = 50$

$\boxed{u_1 = -200}$

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$u_2 + u_1 = 90$

$u_2 + 250 = 90$

$\boxed{u_2 = -160}$

$u_3 + u_1 = 280$

$u_3 + 280 = 280$

$\boxed{u_3 = 0}$

The net evaluation for each of the unoccupied cells are now determined

$d_{ij} = u_i + v_j - c_{ij}$ (All values should -ve)

$d_{ij} = c_{ij} - (u_i + v_j)$ (All values should +ve)

$d_{ij} = u_i + v_j - c_{ij}$

$d_{12} = u_1 + v_2 - c_{12}$

$= -200 + 200 - 30$

$\boxed{d_{12} = -30}$

$d_{13} = u_1 + v_3 - c_{13}$

$= -200 + 50 - 220$

$\boxed{d_{13} = -370}$

$d_{22} = u_2 + v_2 - c_{22}$

$= 160 + 200 - 45$

$\boxed{d_{22} = -5}$

$d_{23} = u_2 + v_3 - c_{23}$

$= -160 + 50 - 170$

$\boxed{d_{23} = -280}$

These are obtained by $d_{ij} = u_i + v_j - c_{ij}$
If we use $d_{ij} = c_{ij} - (u_i + v_j)$
then all the net evolution should be positive since, all the net evolution are non-(+ve) then current solution is optimum.
The optimum allocation is given by

$x_{11} = 1$, $x_{21} = 3$, $x_{31} = \epsilon$,
$x_{32} = 2$, $x_{33} = 2$.

1	(-ve)	(-ve)
50	30	220
3	(-ve)	(-ve)
90	45	170
ϵ	2	2
250	200	50

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The transportation cost A/c to the above is give by

$1 \times 80 + 90 \times 3 + 200 \times 2 + 2 \times 80 + \epsilon \times 250$

$\rightarrow$ $820 + 250\epsilon \rightarrow$ $820. ($\because \epsilon \rightarrow 0$)