

IVWIGREN DEAGA

15/ENG02/031

CDE 512

1) W_i = number of workers during the i th month, 30

x_i = number of carpets made during the i th month

C_i = number of carpets made by overtime in month i

h_i = number of workers hired at the beginning of month i

f_i = number of workers fired at the beginning of month i

S_i = number of carpets stored at the end of month i

$$S_0 = 0$$

$$W_i, x_i, C_i, h_i, f_i, S_i \geq 0, \quad i = 1, \dots, 12$$

Total number of carpets made per month consists of regular production and overtime

$$x_i = 20W_i + C_i$$

The number of workers can change at the start of each month

$$W_i = W_{i-1} + h_i - f_i$$

number of carpets stored at the end of each month is stated, plus the number we made, minus demand for the month,

$$S_i = S_{i-1} + x_i - d_i$$

Overtime is limited

$$G_i \leq G_{wi}$$

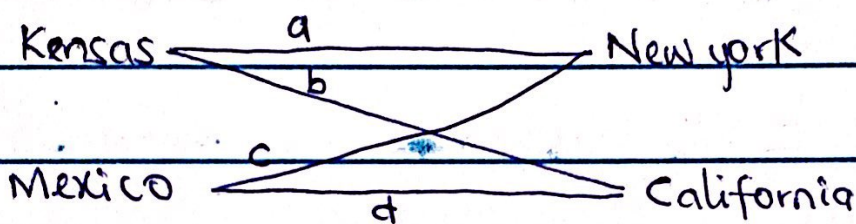
2) Production of keyboard

Consumption of keyboard

Kansas	15	New York	10
Mexico	8	California	13

Transportation of keyboard

	New York (\$)	California (\$)
Mexico	4 (a_{21})	1 (a_{22})
Kansas	2 (a_{11})	3 (a_{12})



Production constraint: $a + b \leq 15$

$$c + d \leq 8$$

Consumption constraint: $a + c \leq 10$

$$b + d \leq 13$$

$$\text{Min } z = a_{11}a + a_{12}b + a_{21}c + a_{22}d$$

$$\text{Min } z = 2a + 3b + 4c + d$$