Development of LPP Model

Minimisation Problem

① A nutrition scheme for babies is proposed by a committee of doctors. Babies can be given three types of food (I, II and III) which are available in standard sized packets weighing 100 grams. The cost per packet of these foods are Rs.5, Rs.4 and Rs.6. respectively. The vitamin availability in each type of food per packet and the minimum vitamin requirement for each type of vitamin are summarized in the following table.

Details of food types

Vitamin	Vitamin availability per packet			Min. daily required vitamin
	Food Type I	Food Type II	Food Type III	
1	1	2	1	6
2	5	3	2	20
Cost/Packet (Rs)	5	4	6	

Develop a LPP model to determine the optimal combination of food types with the minimum cost such that the minimum requirement of vitamin in each type is satisfied

Solu:

Minimize $Z = 5x_1 + 4x_2 + 6x_3$

Subject to

$$x_1 + 2x_2 + x_3 \geq 6$$

$$5x_1 + 3x_2 + 2x_3 \geq 20$$

$$x_1, x_2 \text{ and } x_3 \geq 0$$