Mathematical form of L.P.P:

Let $x_1, x_2, x_3 \dots x_n$ be n decision variable then, the mathematical form of LPP or so called general LPP. each as follows

Date
Page

$$Z = c_1 x_1 + c_2 x_2 + \cdots + c_n x_n \quad \text{--- (1)}$$

Subject to the constraints

(2) $$\begin{cases} a_{11} x_1 + a_{12} x_2 + \cdots + a_{1n} x_n \; (\geq, =, \leq)\; b_1 \\ a_{21} x_1 + a_{22} x_2 + \cdots + a_{2n} x_n \; (\geq, =, \leq)\; b_2 \\ a_{31} x_1 + a_{32} x_2 + \cdots + a_{3n} x_n \; (\geq, =, \leq)\; b_3 \\ \vdots \\ a_{m1} x_1 + a_{m2} x_2 + \cdots + a_{mn} x_n \; (\geq, =, \leq)\; b_{mn} \end{cases}$$

& non-negativity restriction

$$x_1, x_2 \cdots x_n \geq 0 \quad \text{--- (3)}$$

Where all c's, b's & a's called constraints

Date
Page

The eq^{n} (1) is the objective function.
eq^{n} (2) are constraints
eq^{n} (3) are non-negativity restrictions
$(\geq, =, \leq)$.

means any of these 3 signs may be
there. The constraints which do not
affect the possible set are known as
redundant restriction.