Assignment
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$x(K,M) = 32K + 24M$

x = Total profit as a function
K = No of bags Collegiate
M = No of bags inn

$0 \leq K \leq 1000, \quad 0 \leq M \leq 1200$

Total Nylon = 5000 Sq ft
Total labour = 35 × 40 = 1400 hr

↓ No of available labour
→ No of hours each

R → require 3 sqft Nylon
M → require 2 sqft Nylon

$3K + 2M \leq 5000$

K → Each unit it takes 45 mins $\frac{45}{60} = \frac{3}{4}$
M → Each unit it takes 40 mins $= \frac{40}{60} = \frac{2}{3}$

$\frac{3}{4}K + \frac{2}{3}M \leq 1400$

Constraints

$3K + 2M = 5000$

$\frac{3}{4}K + \frac{2}{3}M \leq 1400$

The amt of material we have to work with Each

Decision variable :

x = total Profit
K = noof collegiate bags
M = not of bags

objective function:

maximize profit

$$X(K,M) = 32k + 24M$$

where K, M are variables, since we can't make negative back pack both can are greater than

sales list

$$0 \leq k \leq 1000$$

$$0 \leq m \leq 1200$$

② Decision variables

let KMH be no of unit of size

K : No of units

M : No of Plant (1,2,3)

H : holds the plant of small, medium, large

P : has to be maximized

objective function

$$P = 420(k_1 2 + k_2 2 + k_3 2) + 360(N_1 m + N_2 m + N_3 m) + 300(k_{13} + k_{23} + k_{31})$$

Constraints:

$$k_{12} + k_{2m} + k_{13} \leq 750 \longrightarrow \text{Pt 1}$$

$$k_{22} + k_2 m + k_2 s \leq 900 \longrightarrow 2$$

$$k_{32} + k_3 m + k_2 s \leq 450 \longrightarrow 3$$

Storage units:

$$20k_{12} + 15k_1 m + 12k_2 s \leq 13000$$

$$20k_2 2 + 15k_2 m + 12k_2 s \leq 12000$$

$$20k_3 2 + 15k_3 m + 12k_2 s \leq 5000$$

Sales forcast :

$$k_{12} + k_1 m + k_1 s \leq 900$$
$$k_{22} + k_2 m + k_2 s \leq 1200$$
$$k_{32} + k_3 m + k_3 s \leq 750$$

Percentage to avoid lay off : $\frac{k_1 2 + k_1 m + k_1 s}{750} \times 100$

$$\frac{k_2 2 + k_2 m + k_2 s}{900} \times 100$$

$$\frac{k_3 2 + k_3 m + k_3 s}{750} \times 100$$