

HW

7-25

Formulate  
Combine steps.

Beef Grain constraints

$$V1 \quad 10B + 6G \geq 9$$

$$V2 \quad 12B + 9G \geq 10$$

$$B + G = 1$$

minimize cost

$$C = .9B + .6G$$

solve

$$10B + 6G \geq 9 \quad 12B + 9G \geq 10$$

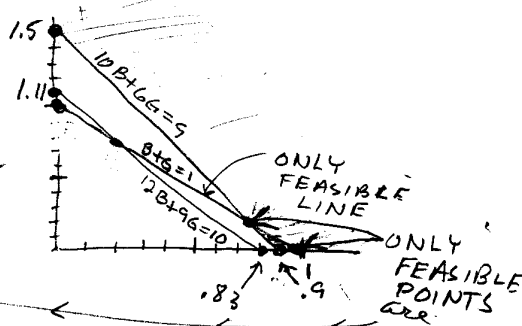
| B  | G   |
|----|-----|
| 0  | 1.5 |
| .9 | 0   |

| B   | G    |
|-----|------|
| 0   | 1.11 |
| .83 | 0    |

| B | G |
|---|---|
| 0 | 1 |
| 1 | 0 |

WINDOW

X-MIN = 0  
 X-MAX = 1  
 X-scl = .1  
 Y-MIN = 0  
 Y-MAX = 1.5  
 Y-scl = .1



$P_1(1,0), C = .9(1) + .6(0) = .90$  (90¢)  
 and  $P_2$   
 mid point

$$\begin{array}{r} 10B + 6G = 9 \quad (1) \\ B + G = 1 \quad (2) \\ \hline 10B + 6G = 9 \quad (1) \\ -6B - 6G = -6 \quad (2) \\ \hline 4B = 3 \\ B = .75 \end{array}$$

Put  $B = .75$  in (2)  
 $.75 + G = 1$   
 $G = .25$

$P_2(.75, .25)$   
 $C = .9(.75) + .6(.25)$

\*  $C = .825$  82.5¢  $\leftarrow$  Best cost  
 $\leftarrow$  BEST  $\frac{3}{4}$  # meat  $\frac{1}{2}$  # grain

V1 vitamin content =  $10(.75) + 6(.25) = 9$   $\underline{V1}$   
 V2 vitamin content =  $12(.75) + 9(.25) = 11.25$   $\underline{V2}$