	X	Y	
A	4	32	324
B	12	16	332
C	36	0	612

Part II: Mechanics. Given the following LP models (represented abstractly with decision variables X and Y), find the optimal solution using the 'graphing' approach.

Your solution MUST show the following:

- A) Graph
  - a. Plotting all 3 constraints
  - b. Shading in the feasible region of the entire LP model
  - c. Identification of the relevant extreme points
- B) Relevant Extreme Points
  - d. Calculate the (X,Y) values of each relevant Extreme Point
  - e. Show the algebraic calculations of how the (X,Y) values of the Extreme Points were calculated (eyeballing a picture is not sufficient).
- C) Optimal Solution
  - f. Evaluate each Extreme Point by the objective function
  - g. Identify which extreme point is the 'best'.

A: $X+2Y=68$
$4X+2Y=80$
$3X=12 \quad X=4$
$Y=32$

B: $2X+3Y=72$
$4X+2Y=80 \Rightarrow 4Y=64$
$4X+6Y=144$
$Y=16$
$X=12$

C – $X=36$
$Y=0$

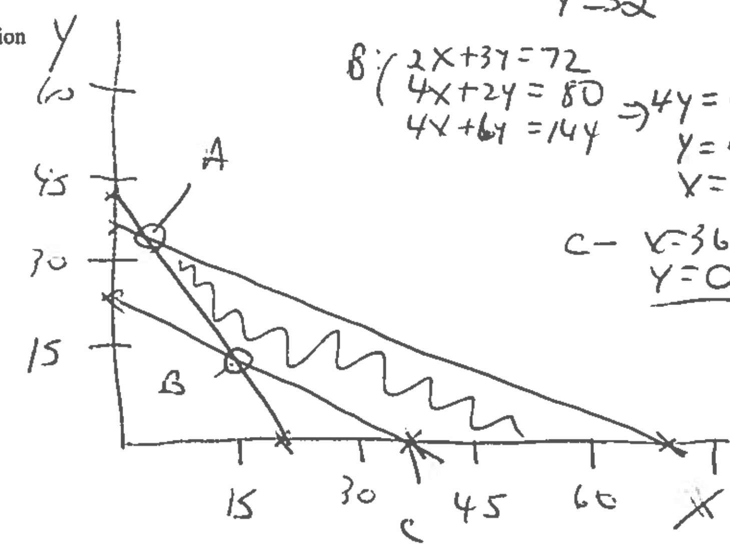
5)

Minimize 17X + 8Y

Subject to:

2X + 3Y >= 72
4X + 2Y >= 80
X + 2Y <= 68

And non-negativity, of course.



6)

Minimize 7X + 5Y

Subject to the following constraints:

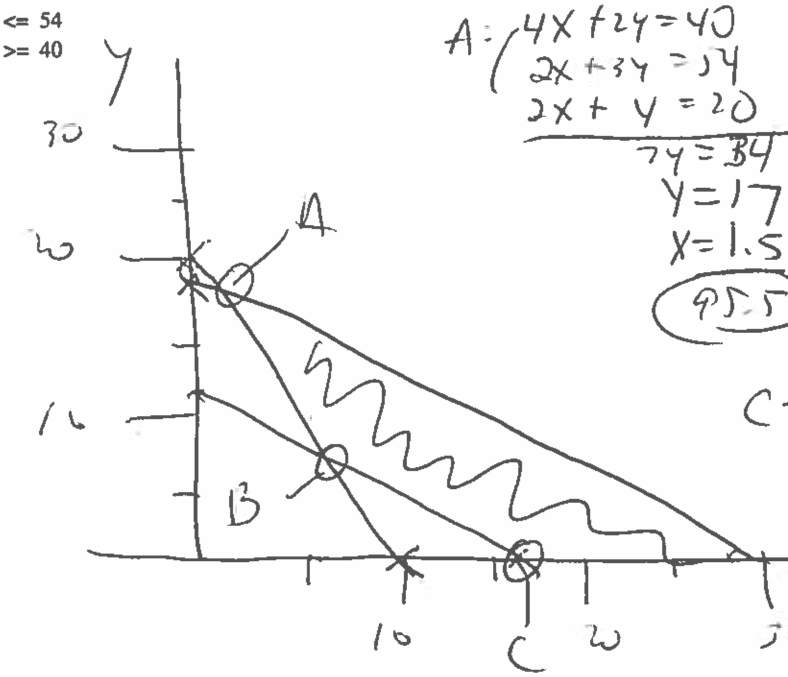
6X + 8Y >= 96
2X + 3Y <= 54
4X + 2Y >= 40

And non-negativity, of course.

A: $4X+2Y=40$
$2X+3Y=54$
$2X+Y=20$
$7Y=34$
$Y=17$
$X=1.5$
95.5

B: $6X+8Y=96$
$4X+2Y=40$
$16X+8Y=160$
$10X=64$
$X=6.4$
$Y=7.2$
80.8

C = $X=16$, $Y=0$ 112



X

Bushert