

Finite

§5.1 p. 257 #43 & 49

§5.2 p. 263 #17 & 35

43

Corn = x

Soybean = y

cost corn = \$40

cost soy = \$32

spend no more than \$5000

$$40x + 32y \leq 5000 \Rightarrow 5x + 4y \leq 625$$

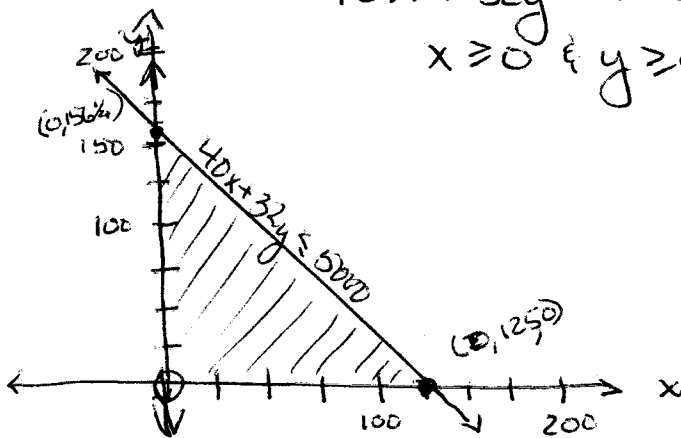
$$x \geq 0 \text{ \& } y \geq 0$$

$$x\text{-int} = \frac{625}{5} = 125$$

$$y\text{-int} = \frac{625}{4} = 156\frac{1}{4}$$

$$4y \leq -5x + 625$$

$$y \leq -\frac{5}{4}x + \frac{625}{4}$$



49

Plant A

Plant B

x = # weeks for A

mini/wk 8

6

y = # weeks for B

sedan/wk 10

8

At least 400 sedans

$$10x + 8y \geq 400 \Rightarrow 5x + 4y \geq 200$$

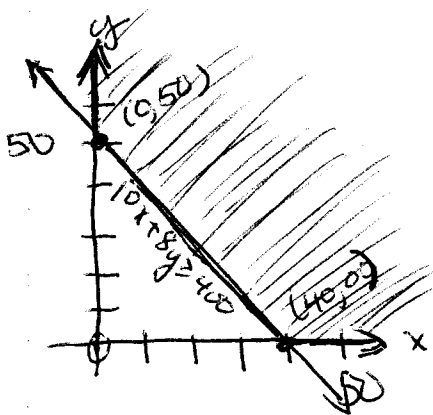
$$x \geq 0 \text{ \& } y \geq 0$$

$$x\text{-int} = 40$$

$$y\text{-int} = 50$$

$$4y \geq -5x + 200$$

$$y \geq -\frac{5}{4}x + 50$$

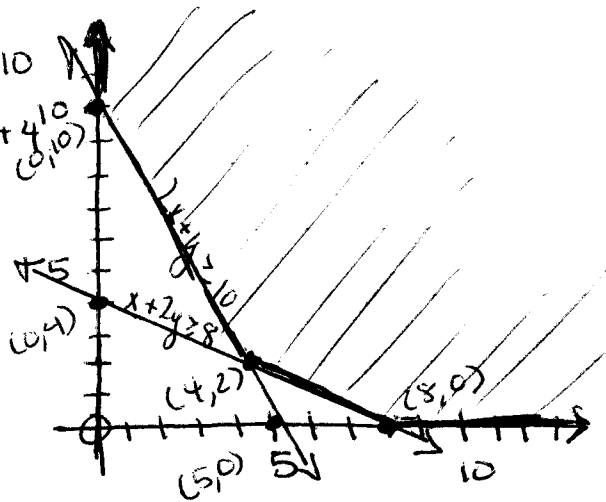


Finite

§5.2 p.263 #17 & 35

(17) $2x + y \geq 10$
 $x + 2y \geq 8$
 $x \geq 0$
 $y \geq 0$

x int = 5 $y \geq -2x + 10$
 y int = 10
 x int = 8 $y \geq -\frac{1}{2}x + 4$
 y int = 4



By inspection intersection of $2x + y \geq 10$ & $x + 2y \geq 8$ is $(4, 2)$

or $y = -2x + 10 \Rightarrow x + 2(-2x + 10) = 8$
 $\Rightarrow -3x + 20 = 8 \Rightarrow 3x = 12 \Rightarrow x = 4 \Rightarrow 2(4) + y = 10$
 $\Rightarrow y = 2 \Rightarrow (4, 2)$

corner pts

- $(0, 10)$
- $(4, 2)$
- $(8, 0)$

unbounded sol.

(35)

trick
slalom

Fabrication

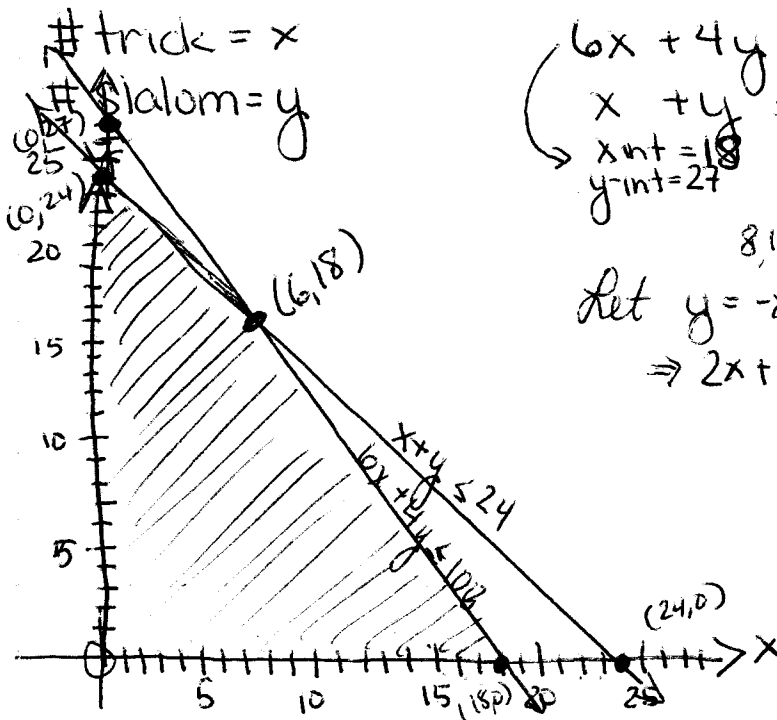
6 hr.
4 hr.

Finishing

1 hr.
1 hr.

max Fab 108

max Finish 24



$6x + 4y \leq 108$ $x \geq 0$
 $x + y \leq 24$ $y \geq 0$

x int = 18 y int = 27 x int = 24 y int = 24

8, 16 48 64

Let $y = -x + 24 \Rightarrow 6x + 4(-x + 24) = 108$
 $\Rightarrow 2x + 96 = 108 \Rightarrow 2x = 12 \Rightarrow x = 6 \Rightarrow y = 24 - 6 = 18$

Corner Pts

- $(0, 24)$
- $(6, 18)$
- $(18, 0)$