Notes

Advertising on a radio station for a 30 sec commercial is: $200 in the morning (am) and $50 in the evening(pm). Your advertising budget is $2200 and you can run at most 20 ads.

A morning ad is heard by 90,000 people and an evening ad is heard by 30,000 people.

Find the number of morning ads and evening ads that will maximize the number of people who can reach.

Constraints:

$a \geq 0 \quad p \geq 0$

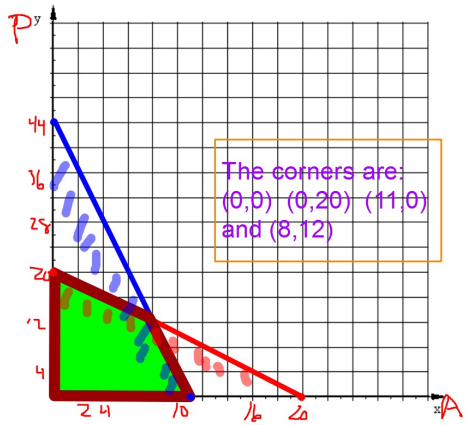
$a + p \leq 20$ a-int = 20 p-int=20

$200a + 50p \leq 2200$

a-int = 11 p-int = 44

Objective Function:

$90{,}000a + 30{,}000p = T$



(a, p)	90,000a + 30,000p
(0,0)	0 listeners
(0,20)	600,000 listeners
(11,0)	990,000 listeners
(8,12)	1,080,000 listeners

the radio station should run 8 am ads and 12 pm ads in order to maximize the number of listeners.

You want to sell some paintings and sculptures at a craft show. You spend 12 hours on each painting and 18 hours on each sculpture but only have 72 hours to work before the show. Each painting costs you $24 to make and each sculpture costs you $12 to make and you only have $96 to spend.

Write and graph a system of four inequalities to model the constraints in this situation.

If you sell paintings for $45 each and sculptures for $70 each how many of each should you make and sell in order to maximize your income?

Constraints:

$12p + 18s \leq 72$ *

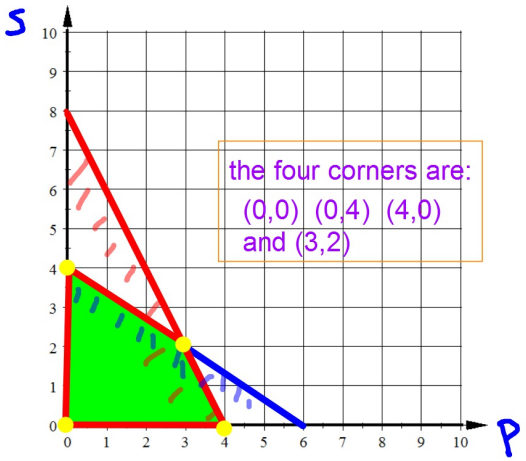
$24p + 12s \leq 96$ ✳

$p \geq 0$

$s \geq 0$

Objective Function:

$45p + 70s = \text{Income}$



the four corners are:
(0,0) (0,4) (4,0)
and (3,2)

Objective Function: $45p + 70s = \text{Income}$

(p,s)	45p + 70s
(0,0)	$0
(4,0)	$180
(0,4)	$280
(3,2)	$275

In order to maximize income the artist should make no paintings and four sculptures.