ALG 2 Bellwork Tuesday, October 14, 2014

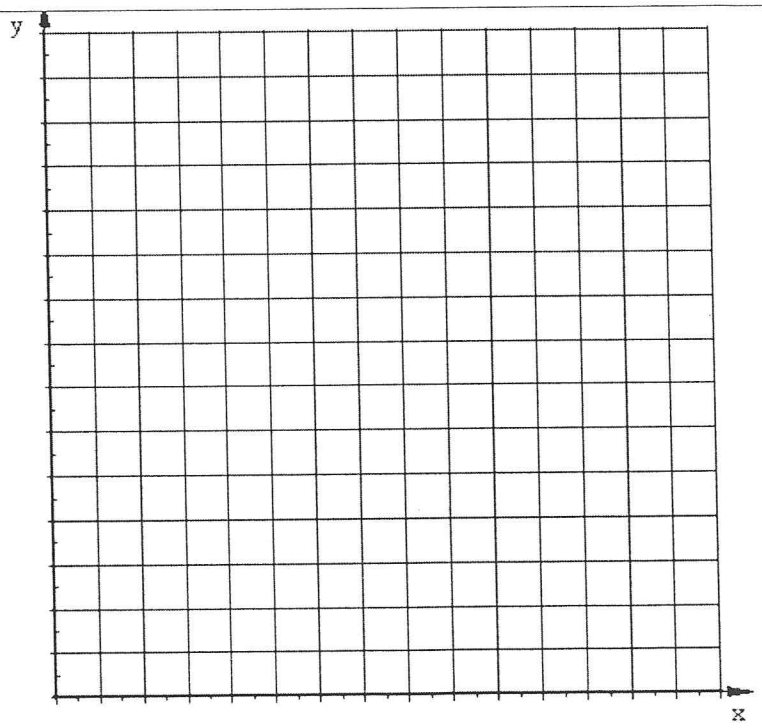
A seamstress is making some pants and shirts to be sold at a craft fair. It takes her 6 hours to make every pair of pants and 4 hours to make each shirt. She only has 72 to work on these garments. Materials for each pair of pants cost $16 and for each shirt cost $6. Her budget is $144.

She plans on selling each pair of pants for $50 and each shirt for $20.

Write and graph a system of inequalities to meet all of these constraints and find the number of each garment that should be made and sold to maximize her revenue.

Constraints:

Objective Function:



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p = # pairs of pants
s = #shirts

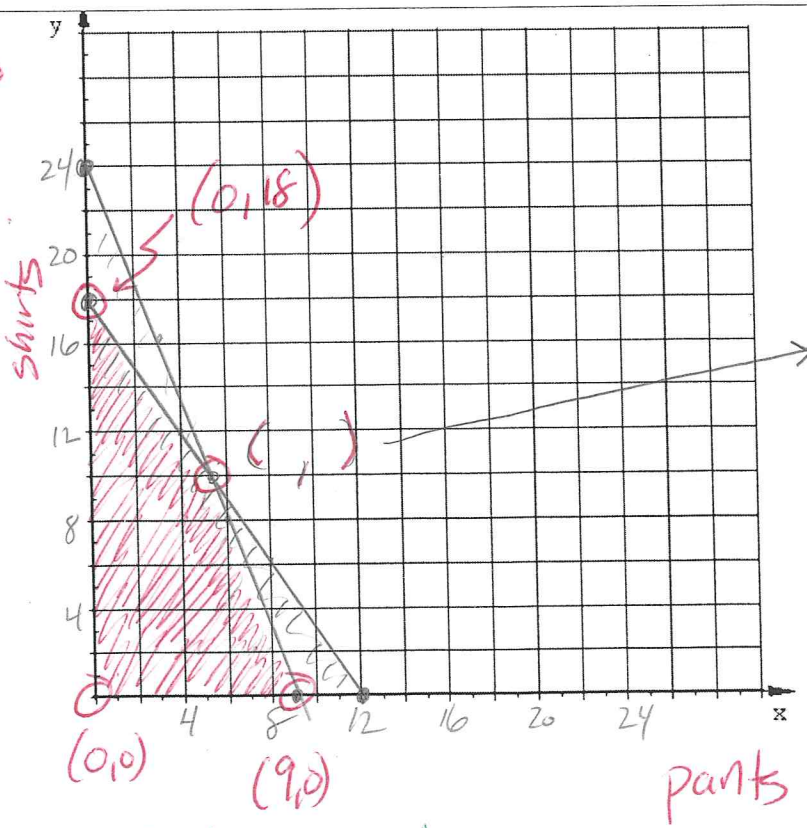
Constraints: $p \geq 0$ $s \geq 0$

$6p + 4s \leq 72$
p-int = 12
s-int = 18

$16p + 6s \leq 144$
p-int = 9
s-int = 24

Objective Function:

$50p + 20s = \text{Income}$



$6p + 4s = 72$
$16p + 6s = 144$

sol ≈ (5, 10)
p = 5.142
s = 10.28

(p, s)	50p + 20s
(0,0)	0
(9,0)	450
(0,18)	360
(5,10)	450

No shirts today

9 pair of pants or 5 pair of pants & 10 shirts