Algebra 2 Bellwork Monday, November 2, 2015

A small company makes canoes and sailboats. Their budget for the month is $28,800. Materials for a canoe cost $1600 and for a sailboat cost $2400. The company has the capacity to make 16 vessels each month. They sell canoes for $3200 each and sell sailboats for $7500 each.

1. Write a system of inequalities to model this situation.

2. Use a sheet of graph paper to graph this system of inequalitities.

3. State the corners of the feasible region.

4. Write the Objective Function.

5. Find the number of canoes and sailboats they should make each month in order to maximize their income.

Algebra 2 Bellwork Monday, November 2, 2015 ANSWERS

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C = # canoes
S = # sailboats

1. Write a system of inequalities to model this situation.

$C \geq 0$, $S \geq 0$ } 1st quadrant

$C + S \leq 16$

$1600C + 2400S \leq 28{,}800$

2. Use a sheet of graph paper to graph this system of inequalitities.

$C + S \leq 16$ C-INT = 16, S-INT = 16

$1600C + 2400S \leq 28{,}800$ C-INT = 18, S-INT = 12

3. State the corners of the feasible region.

(C,S): (0,12), (0,0), (16,0), (12,4)

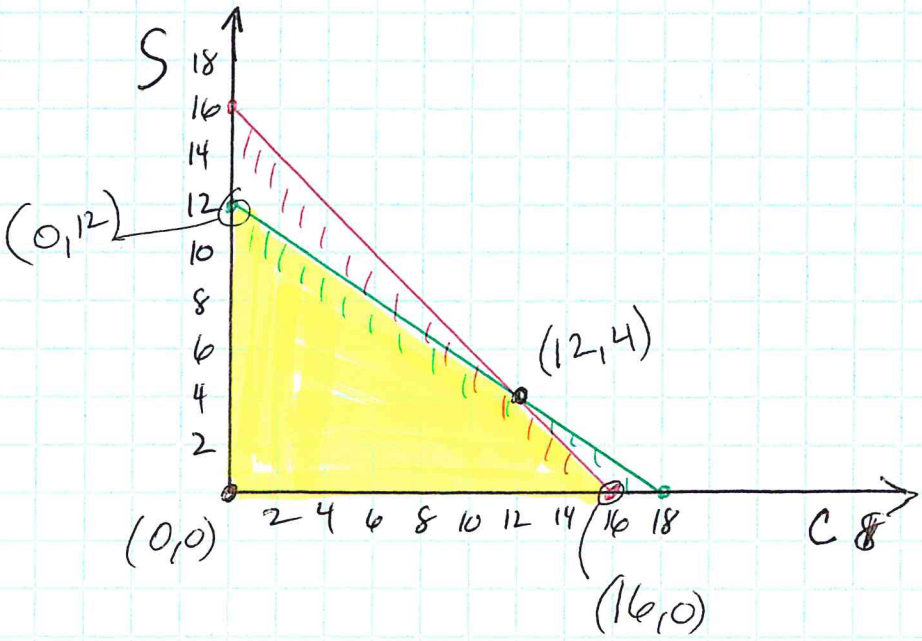
4. Write the Objective Function.

$3200C + 7500S = I$

5. Find the number of canoes and sailboats they should make each month in order to maximize their income.

C	S	$3200C + 7500S$
0	0	0
12	4	68,400
16	0	51,200
0	12	90,000

THEY SHOULD MAKE 0 canoes & 12 sailboats TO make a max income of # 90,000



$C + S \leq 16$

$1600C + 2400S \leq 2$