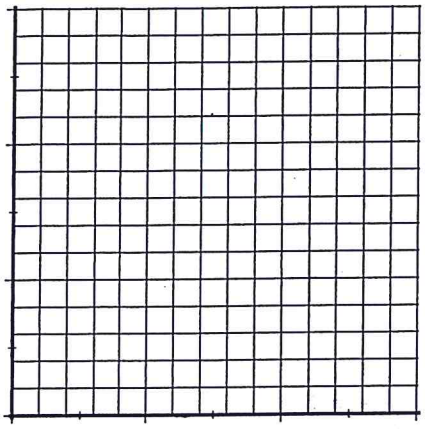
Bellwork Hon Alg 2 Thursday, October 20, 2016

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 and sell sailboats for $7500 each.

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

2. Graph this system of inequalities.



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.

Bellwork Hon Alg 2 Thursday, October 20, 2016 ANSWERS

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 and sell sailboats for $7500 each.

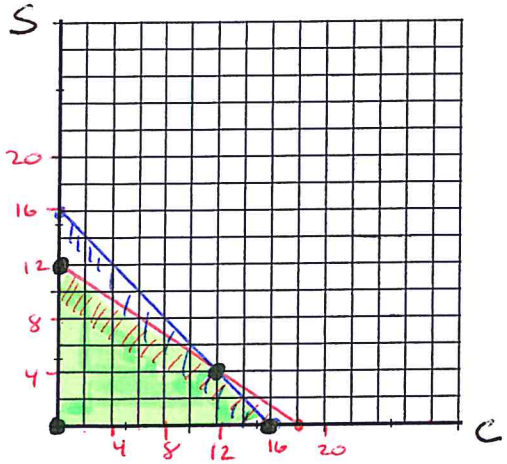
C = # canoes S = # sailboats

1. Write a system of inequalities to model this situation. $C \geq 0$ $S \geq 0$

2. Graph this system of inequalities.

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

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



12 sailboats & 0 canoes will maximize their Income at $90,000

3. State the corners of the feasible region.

(0,0) (16,0) (12,4) (0,12)

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.

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