Without actually solving determine if each system of equations has 1, None, or Many solutions.

1. $y = 0.6x + 8$ $m = .6$ $b = 8$

   $3x - 5y = 40$ $m = .6$ $b = -8$

$y = \frac{40 - 3x}{-5}$

$y = -.6x - 8$

NO SOL

2. $y = 2x$ $m = 2$

   $8x + 4y = 12$

$-8x \quad -8x$

$\frac{4y = -8x + 12}{4}$

$m = -2$ $y = -2x + 3$

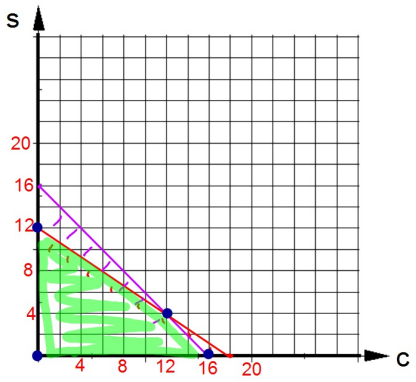
One Sol

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.

c = # of canoes
s = # of sailboats

1. Write a system of inequalities to model this situation.
2. Graph this system.
3. List the vertices of the solution 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.

2. Graph this system of inequalitities.



$C \geq 0 \quad S \geq 0$

$C + S \leq 16$

c-int = 16 s-int = 16

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

c-int = 18 s-int = 12

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

3. State the corners of the feasible region.

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

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.

The company should make 12 sailboats and no canoes.

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