

Advanced Algebra

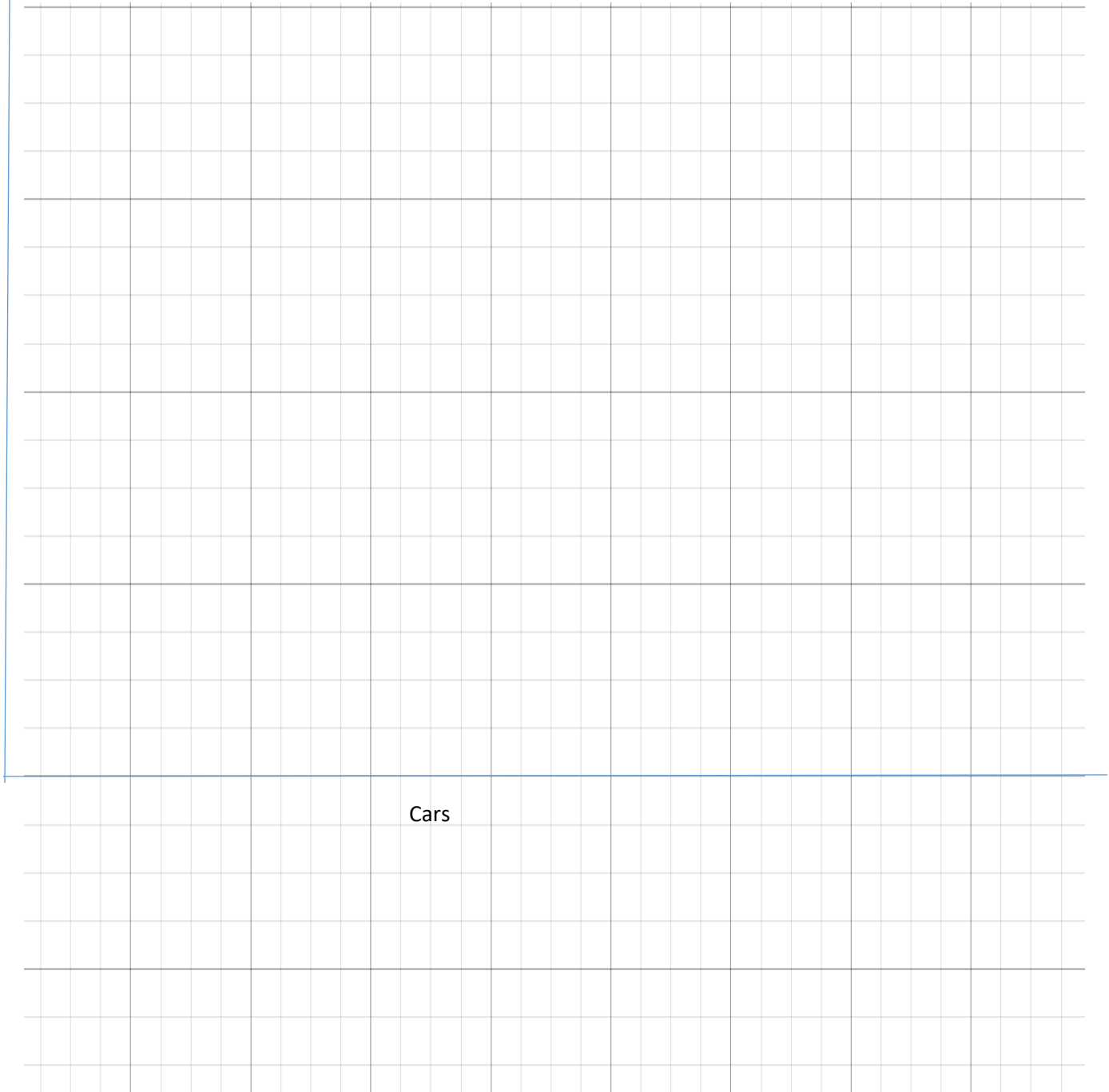
Unit 6: Advanced Systems of Equations – Assignment #6

Linear Programming Practice Problem

John washes cars and motorcycles. He can wash no more than 12 vehicles all together. He has to wash at least 5 motorcycles. It costs him \$3 per car to do the wash and \$1.50 per motorcycle to do the wash. He can spend at most \$25 for various reasons. He makes a profit of \$10.00 on a car and \$5 on a motorcycle. How many of each should he wash to maximize his profit.

Motorcycles

Cars



Example Problem: Solve $3|x + 2| + 1 = 13$

$3 x + 2 = 12$	Subtract the 1 from both sides
$ x + 2 = 4$	Divide the 3
$x + 2 = 4$ and $x + 2 = -4$	Dropped the Absolute Value Sign and made 2 equations
$x = 2$ and $x = -6$	Solved the equations

1) $|x| = 8$

2) $|x + 6| = 9$

3) $|x - 3| = 8$

4) $|x + 9| = 12$

5) $|x - 1| = -4$

6) $|4x| = 24$

7) $\left|\frac{x}{3}\right| = 6$

8) $|2x + 1| = 25$

9) $2|x| = 80$

10) $|3x + 1| = 10$

11) $|x + 5| + 1 = 11$

12) $2|x| - 10 = 100$

13) $2|x| - 2 = 1.8$

14) $|x + 9| - 5 = -5$

15) $|x - .5| + 2 = 15$

16) $\left|\frac{x}{4} + 2\right| = 7$

17) $|3x + .1| = 6$

18) $|3 - 2x| = 8$

19) $4|x - 2| = 8$

20) $|2x - 7| + 8 = 5$