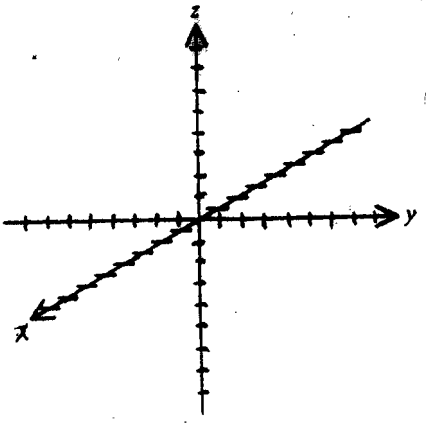
Algebra 2/Trig—H HW #____ Name_____

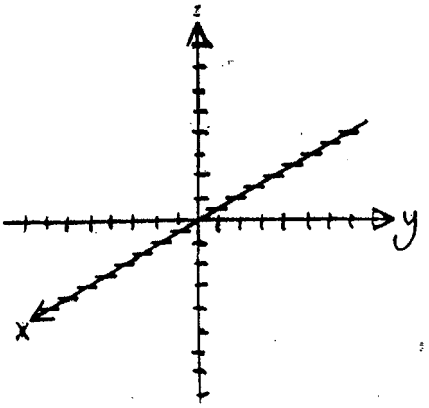
3.4, 3.5, Review

Date_____ Col._____ Per._____

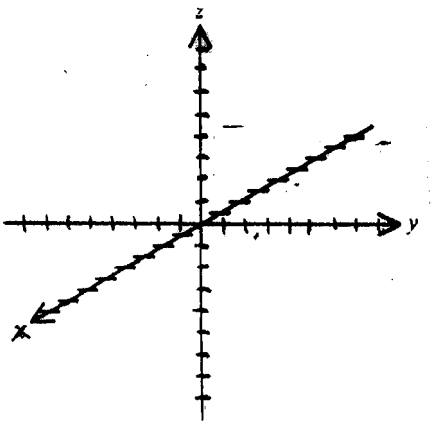
1. Graph C (5, 4, 0) and D (-4, 3, -5).



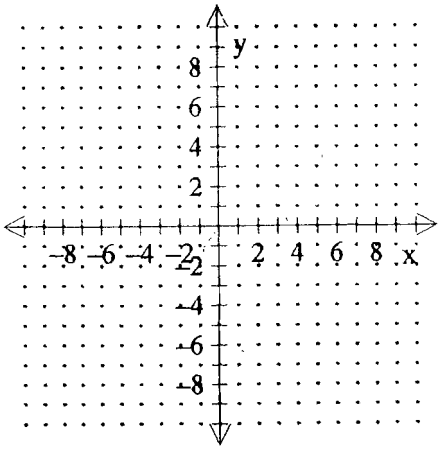
2. Graph $-3x+2y-6z=18$.



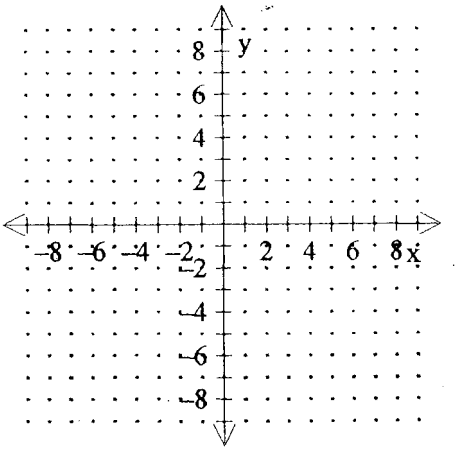
3. Graph $\frac{-1}{2}x+4y-2z=4$.



4. $\begin{cases} |2y-3|<7 \\ |x+y|<2 \end{cases}$



5. $f(x)=\begin{cases} x+2, \text{ if } x\le -3 \\ 2x+1, \text{ if } -3<x<3 \\ \frac{-1}{3}x-2, \text{ if } x\ge 3 \end{cases}$



(Do 6-11 on your own paper)

6. Write $-2x-5y+5z=15$ as a function of x and y. Then evaluate $f(-4,-2)$.

7. Write $3x-6y-\frac{1}{2}z=5$ as a function of x and y. Then evaluate $f\left(\frac{3}{2},4\right)$.

8. You are buying math class supplies. A calculator costs \$15, a package of graph paper (g) costs \$1.50, and a package of mechanical pencils (p) costs \$3.29.

a) Write a function $T(g,p)$ for the total (T) you spend as a function of graph paper and pencils. You must include the calculator in the function.

b) Evaluate the function for 2 packages of graph paper and 3 packages of pencils.

Solve using linear programming.

9. Find the minimum and maximum values of the objective function $C = 4x+3y$, subject to the constraints $x \geq 0,\ 2x+3y \geq 6,\ 3x-2y \leq 9,\ x+5y \leq 20.$

10. A company is planning to buy new fork hoists for material handling. There are two models that will serve their needs. The warehouse supervisor feels that at least 3 Model M and 4 Model R hoists will be needed. The supplier has 8 Model M hoists and 10 model R hoists on hand for delivery. The company purchasing agent has decided that no more than 14 hoists can be purchased. Model M can handle 12,000 kg per hour and Model R can handle 10,000 kg per hour. How many hoists of each model should be purchased for maximum weight handling capacity? What is the weight handling capacity?
Define variables and write an objective function for weight and constraints for the number of Model M, the number of model R, and the total number of hoists. On your graph, the horizontal axis should represent Model M and the vertical axis should represent Model R.

11. An office manager is purchasing file cabinets. Cabinet A requires 3 square feet of floor space and cabinet B requires 6 square feet of floor space. The office has 60 square feet of floor space available. Cabinet A costs $75 and cabinet B costs $50. There is $600 in the office budget to purchase them. Cabinet A has a storage capacity of 12 cubic feet and cabinet B has a storage capacity of 18 cubic feet. How many of each cabinet should the office manager buy in order to maximize storage space?
Define variables and write an objective function for storage space and constraints for floor space and cost. On your graph, the horizontal axis should represent Cabinet A and the vertical axis should represent cabinet B.