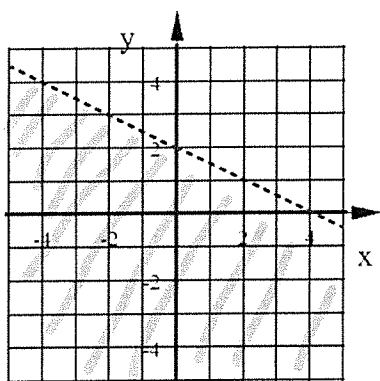# Algebra 1   Review Chapter 7   Monday, May 23, 2016

*1. You want to make a Lemon drink to quench your thirst. You want to make 120 ounces of what you consider the perfuect mixture of 30% Lemon. You only have some drink that is 24% Lemon and some that is 40% Lemon. How many ounces of each should you mix to create 120 of your "perfect" mixture of 30% Lemon?

*2 Your a boat trip from your cabin to a friend's cabin that is 20 miles away. Your trip upstream to get to your friend's cabin in the morning takes 8 hours. Your trip downstream to return to your cabin a few days later takes 5 hours. Write and solve a system of equations to find the speed of the current in the river and the speed at which your boat travels if there were no current.

*Graph each inequality on the xy-plane. Shade the solution region with a colored pencil or a highlighter.

3. $y \geq -3x + 1$ 4. $x > -2$ 5. $y \leq 1$ 6. $16x - 12y > 48$

*7. Write the inequality that is shown in the graph below.

*8. Graph this system of inequalities. Shade the solution region with a highlighter or a colored pencil.

$$y > \frac{2}{3}x \qquad -8x - 10y \geq 40$$

*9. Solve each system of equations by graphing. Give solutions as ordered pairs.

a. $y = -2x - 1$ b. $y = 3x - 4$ c. $y = \frac{1}{3}x$

   $2x - 4y = -16$ $9x - 3y = 18$ $6x + 18y = 36$

*10. Without graphing tell if each system of equations has, NO SOLUTION, ONE SOLUTION, or MANY SOLUTIONS.

a. $y = 6x + 7$ b. $y = 5x - 8$ c. $y = 4x - 1$ d. $y = -3x + 5$

   $y = -6x + 7$ $20x - 4y = 12$ $2x + 8y = 16$ $6x + 2y = 10$

e. $y = 4x - 9$ f. $y = 2x - 10$

   $y = 4$ $20x + 2y = 4$

*11. Solve each system of equations by substitution or elimination. Give your answers as an ordered pair.

a. $y = 3x - 10$ b. $h = 4k + 17$ c. $c + d = 11$ d. $5h - 4g = 14$

   $y = -2x + 10$ $5h - 8k = 25$ $4c - 8d = -4$ $3h - 4h = 10$

the rest is on the back.

1

e. $6a + 7b = 10$
    $-6a + 11b = 62$

f. $4x - 6y = 14$
    $6x - 9y = 21$

g. $4e + 9f = 49$
    $7e + f = 12$

h. $7P - 10Q = 56$
    $4P + 9Q = -71$

j. $10x + 8y = 13$
    $25x + 20y = 19$

*12. Yesterday we went to McDonald's and bought 4 hamburgers and 3 orders of fries for $6.53. Today we bought 3 hamburgers and 5 orders of fries for $8.72. Write and solve a system of equations to find out the price of a hamburger and the price of an order of fries.

*13. You want to start a computer repair business. To get started you need to spend $11,000 on equipment. You expect rent for your store to be $1200 a month and utilities (electric, heat, water, etc) to be $230 a month. You plan to charge an average of $55 for each computer repair and expect to do about 40 repairs a month. Find the number of months it will take you to break even.

*14. You need to rent a car for the day. One company will charge you $49.50 for the car and $0.35 per mile. Another company will charge you $33 for the car and $0.50 per mile. Find the number of miles you would have to drive for the two companies to charge the same amount.