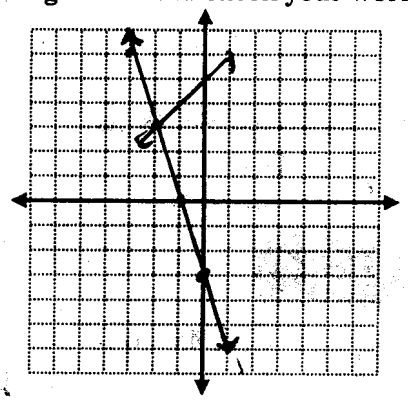
Name: _____ Period _____ Date _____

Chapter 7 Test Review

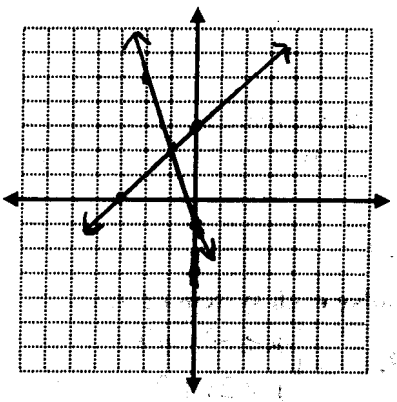
Solve each system by graphing. Show and check your work and don't forget your intervals!

1. $\begin{cases} y = -3x - 3 \\ y = x + 5 \end{cases}$



(-2, 3)

2. $\begin{cases} x - y = -3 \\ 3x + y = -1 \end{cases}$



(-1, 2)

Solve each system using substitution. Show and check all your work.

3. $\begin{cases} y = 2x + 11 \\ y = -x + 5 \end{cases}$

(-2, 7)

4. $\begin{cases} 2x + 5y = -6 \\ y = -4x - 12 \end{cases}$

(-3, 0)

Solve each system using elimination. Show and check all your work.

5. $\begin{cases} x - 3y = 9 \\ -x + 2y = 1 \end{cases}$

(-21, -10)

6. $\begin{cases} 2x + 6y = -2 \\ x + 2y = 1 \end{cases}$

(5, -2)

Use a system of equations to model the situation. Solve by any method.

7. You have a total of 21 coins, all nickels and dimes. The total value is $1.70. Write and solve a system of equations to find the number of dimes d and the number of nickels n that you have.

$N + D = 21$

$.05N + .1D = 1.70$

8 Nickels

13 Dimes

7. An amusement park charges admission plus a fee for each ride. Admission plus two rides costs $10. Admission plus five rides cost $16. What is the charge for admission? What is the charge for each ride?

$A + 2r = 10$

$A + 5r = 16$

Admission is $6

each ride costs $2

8. On a canoe trip, Rita paddled upstream(against the current) at an average speed of 2mph relative to the riverbank. On the return trip downstream (with the current) her average was 3mph. Find Rita's speed in still water and the speed of the current. Define your variables!

$b + c = 3$

$b - c = 2$

b = boat speed

c = current speed

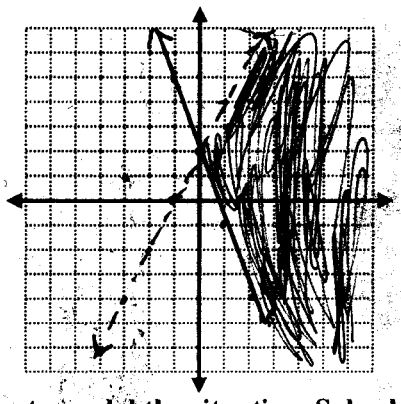
speed of boat is 2.5 mph & current speed is .5 mph

8. Which point is not a solution of $y \geq -2x + 5$? **Show work to support answer. (8 pts)**

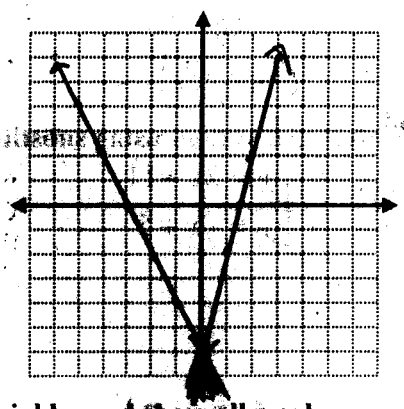
A. (5, 2) **B.** (-1, 8) **C.** (4, 0) **D.** (3, -3)

Solve each system of inequalities by graphing. Check your work!

9. $\begin{cases} y \geq -3x + 2 \\ y < 2x + 2 \end{cases}$



10. $\begin{cases} y \leq 4x - 6 \\ y \leq -2x - 6 \end{cases}$



Use a system of equations to model the situation. Solve by any method. Define your variables and show all work.

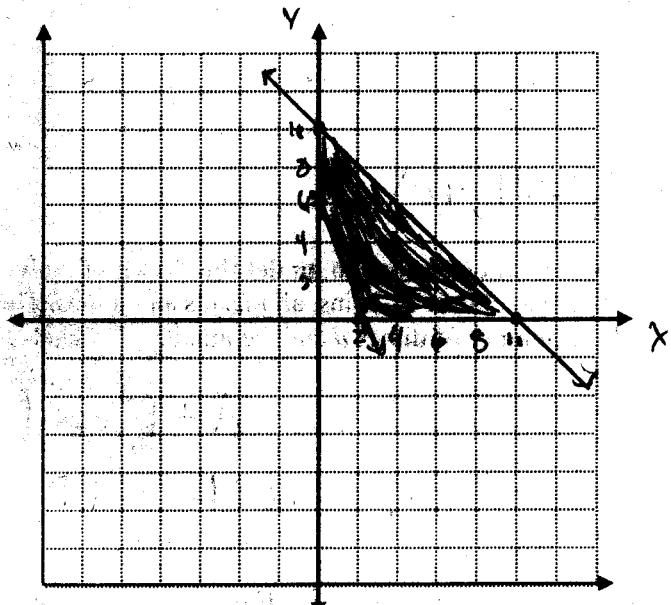
11. Suppose that you take care of pets for vacationing neighbors each summer. You charge \$15 per day to take care of dog, and \$5 per day to take care of other pets. You know that you can care for at most 10 pets per day, and you want to earn at least \$30 per day.

a. Write a system of linear inequalities that describes the situation for x dogs and y pets other than dogs.

$15x + 5y \geq 30$

$x + y \leq 10$

b. Then graph the system to show all possible solutions.



12. A quantity of 13% acid solution is being mixed with some 3% acid solution. The final solution must be 8% acid and contain 90 mL. How much of each solution must be added to accomplish this? Make a table if you want. Write a system of linear equations and solve.

45 ml of 3% & 45 ml of 13%

$.13a + .03b = .08(90)$

$a + b = 90$