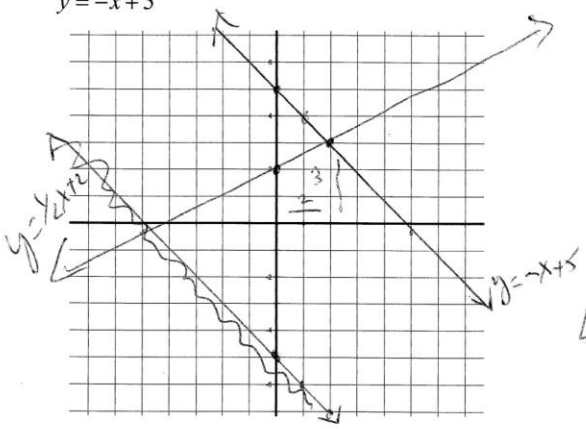
Algebraic Connections Name: KEY

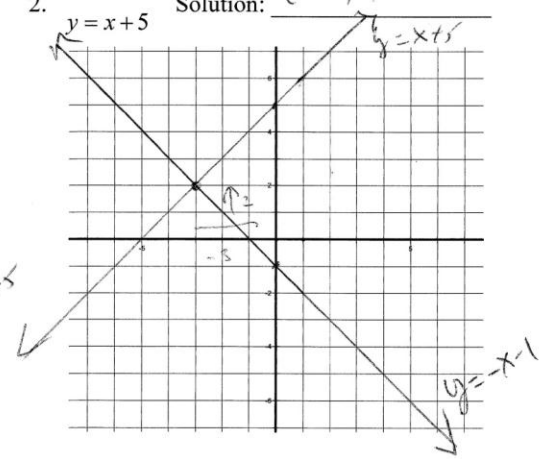
WS D.11 - Review for Test D1 Date: _____

Find the solution of these systems by graphing

1. $y = \frac{1}{2}x + 2$
   $y = -x + 5$
   Solution: (2, 3)



2. $y = -x - 1$
   $y = x + 5$
   Solution: (-3, 2)



Use the substitution method to solve each system of equations. Please show all of your work.

3. $x = 20 - 3y$
   $2y + 3x = -10$
   Solution: (-10, 10)

$2y + 3(20 - 3y) = -10$
$2y + 60 - 9y = -10$
$70 = 7y$
$10 = y$

$x = 20 - 3(10)$
$x = -10$

4. $y = 2x + 5$
   $x - 2y = 8$
   Solution: (-6, -7)

$x - 2(2x + 5) = 8$
$x - 4x - 10 = 8$
$-3x = 18$
$x = -6$

$y = 2(-6) + 5$
$y = -12 + 5$
$y = -7$

Use the elimination method to solve the following systems of equations. Please show all of your work.

5. $6x + 10y = 54$
   $6x + 7y = 36$
   Solution: (-1, 6)

(-) $6x + 7y = 36$
$3y = 18$
$y = 6$

$6x + 7(6) = 36$
$6x + 42 = 36$
$6x = -6$
$x = -1$

7. $5x + y = 27$
   $3x + y = 17$
   Solution: (5, 2)

(-1) $3x + y = 17$
$2x = 10$
$x = 5$

$3(5) + y = 17$
$15 + y = 17$
$y = 2$

6. $2x + 5y = 34$
   $x + 2y = 14$
   Solution: (2, 6)

(2) $x + 2y = 14$
$2x + 5y = 34$
(-) $2x + 4y = 28$
$y = 6$

$x + 2(6) = 14$
$x + 12 = 14$
$x = 2$

8. $3x + 4y = 1$
   $2x - 4y = 14$
   Solution: (3, -2)

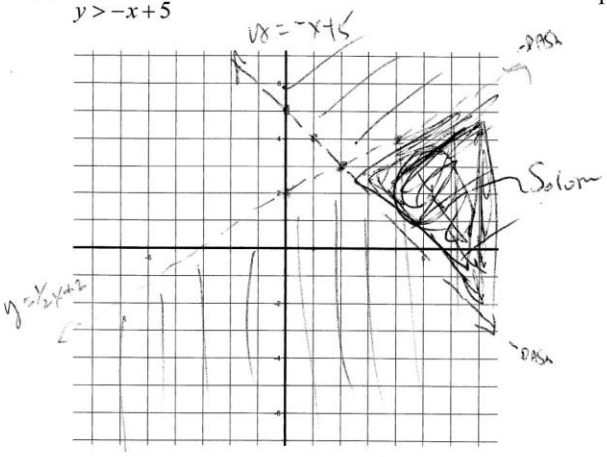
(+) $2x - 4y = 14$
$5x = 15$
$x = 3$

$3(3) + 4y = 1$
$9 + 4y = 1$
$4y = -8$
$y = -2$

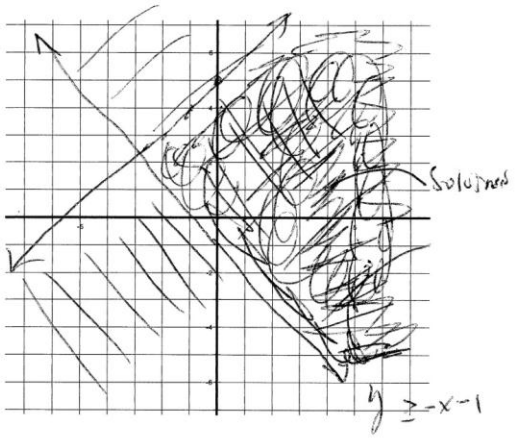
KEY D.11

Find the solution of these systems of inequalities by graphing.

9. $y < \frac{1}{2}x + 2$
$y > -x + 5$



10. $y \geq -x - 1$
$y \leq x + 5$



Solve the following problems using a system of equations.

11. The sum of two numbers is 30. Twice their difference is 3 greater than the smaller number. Find the numbers. 18.6 and 11.4

Let $x =$ Large # . Let $y =$ Small #.

System of equations: $x + y = 30$

$2(x - y) - 3 = y$

12. Naomi is 6 years older than Pedro. Four years ago, Naomi was twice as old as Pedro. How old is each now? Naomi 16 yrs Pedro 10 yrs old

Let $x =$ Pedro = P . Let $y =$ Naomi = N.

System of equations: $N - 6 = P$

$2(P - 4) = N - 4$

$2(P - 4) = N - 4$