

Review Worksheet for Exam 02 – Sections 3.1.- 3.3

Show work on all problems

NAME ✓  
DATE ✓  
Period ✓

Solve by the substitution method.

1.  $\begin{cases} y = -x + 6 \\ 2x - y = -3 \end{cases}$   
 $y = -x + 6$   
 $2x - (-x + 6) = -3$   
 $2x + x - 6 = -3$   
 $3x = 3$   
 $x = 1$   
 $y = 5$   
(1, 5)

2.  $\begin{cases} x = 4y + 3 \\ 2x - 3y = 11 \end{cases}$   
 $x = 4(1) + 3$   
 $x = 7$   
 $2(4y + 3) - 3y = 11$   
 $8y + 6 - 3y = 11$   
 $5y = 5$   
 $y = 1$   
 $x = 7$   
(7, 1)

3.  $\begin{cases} y = 5x + 11 \\ 4x + 12y = 4 \end{cases}$   
 $y = 5(-2) + 11$   
 $y = -10 + 11$   
 $y = 1$   
 $4x + 12(5x + 11) = 4$   
 $4x + 60x + 132 = 4$   
 $64x = -128$   
 $x = -2$   
(-2, 1)

Solve by the elimination method.

4.  $\begin{cases} 2x + y = 6 \\ x - y = 3 \end{cases}$   
 $3 - y = 3$   
 $y = 0$   
 $3x = 9$   
 $x = 3$   
(3, 0)

5.  $\begin{cases} 4x + 5y = 6 \\ 5x + 2y = -1 \end{cases}$   
 $(4x + 5y = 6) \cdot 2 \rightarrow 8x + 10y = 12$   
 $(5x + 2y = -1) \cdot 5 \rightarrow 25x + 10y = -5$   
 $(-) \quad \underline{8x + 10y = 12}$   
 $\quad \underline{25x + 10y = -5}$   
 $\quad \underline{-17x = 17}$   
 $x = -1$   
 $4(-1) + 5y = 6$   
 $-4 + 5y = 6$   
 $5y = 10$   
 $y = 2$   
(-1, 2)

6.  $\begin{cases} -4x + 7y = 13 \\ 7x - 3y = 5 \end{cases}$   
 $-4(2) + 7y = 13$   
 $-8 + 7y = 13$   
 $7y = 21$   
 $y = 3$   
 $-12x + 21y = 39$   
 $49x - 21y = 35$   
 $(+) \quad \underline{-12x + 21y = 39}$   
 $\quad \underline{49x - 21y = 35}$   
 $\quad \underline{37x = 74}$   
 $x = 2$   
(2, 3)

7.  $\begin{cases} 5x - 7y = -16 \\ 2x + 8y = 26 \end{cases}$   
 $5x - 7(3) = -16$   
 $5x - 21 = -16$   
 $5x = 5$   
 $x = 1$   
 $10x - 14y = -32$   
 $(-) \quad \underline{10x - 14y = -32}$   
 $\quad \underline{10x + 40y = 130}$   
 $\quad \underline{-54y = -162}$   
 $y = 3$   
(1, 3)

Classify each system and determine the number of solutions.

8.  $\begin{cases} x = 2y + 6 \\ 2x - 4y = 12 \end{cases}$   
 INFINITE  
 CONSISTENT DEPENDENT

9.  $\begin{cases} 5x + y = 2 \\ y + 2 = -5x \end{cases}$   
 NO SOLUTION  
 INCONSISTENT

10.  $\begin{cases} 3x - y = -21 \\ 3y = 9x + 33 \end{cases}$   
 NO SOLUTION  
 INCONSISTENT

11.  $\begin{cases} 2x + 6 = y \\ 3y = 6x + 18 \end{cases}$   
 INFINITE  
 CONSISTENT DEPENDENT

Determine if the given ordered pair is a solution to the system.

12.  $(-5, 1) \begin{cases} x - 3y = -8 \\ 3x + 2y = 9 \end{cases}$   
 NO

13.  $(4, 3) \begin{cases} y = x - 1 \\ x + y = 7 \end{cases}$   
 YES

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Complete the table and graph to solve each system.

14.  $\begin{cases} x-2y=8 \\ 3x+y=3 \end{cases}$   $y = \frac{x-8}{2}$   
 $y = -3x+3$

15.  $\begin{cases} 2x+y=6 \\ x-y=3 \end{cases}$   $y = -2x+6$   
 $y = x-3$

x	y
0	-4
1	-3.5
2	-3
3	-2.5

$x-2y=8$

x	y
0	3
1	0
2	-3
3	-6

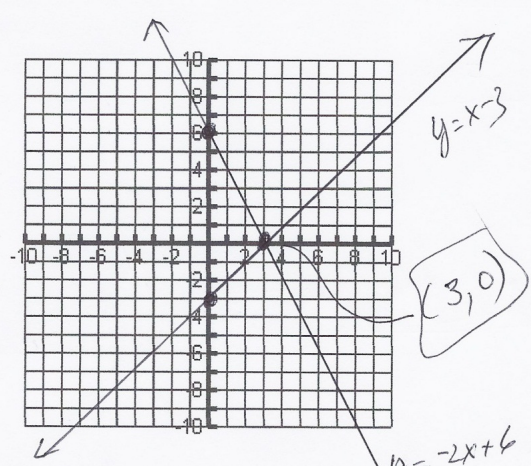
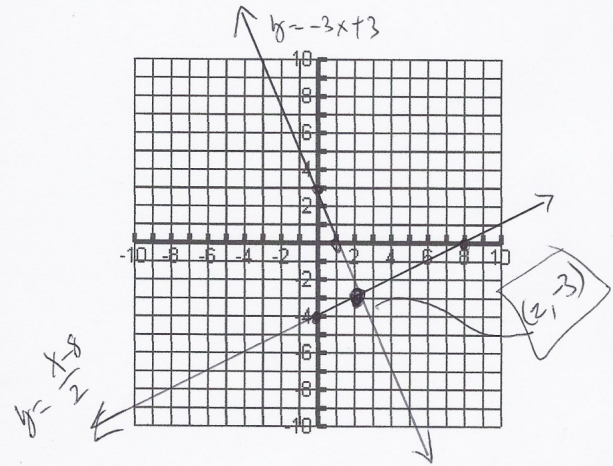
$3x+y=3$

x	y
0	6
1	4
2	2
3	0

$2x+y=6$

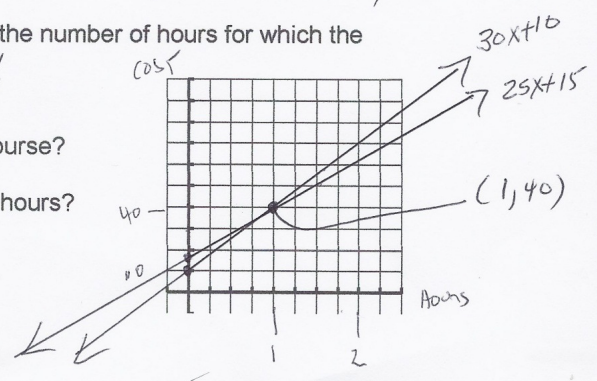
x	y
0	-3
1	-2
2	-1
3	0

$x-y=3$



16. Fayetteville Country Club golf course charges \$10 to rent golf clubs plus \$30 per hour for golf cart rental. Springdale Country Club golf course charges \$15 to rent clubs plus \$25 per hour to rent a cart.  
 $F: 30x+10=y$   $S: 25x+15=y$

- $y = \text{cost}$   $x = \text{Hours}$
- Write an system of linear equations to find the number of hours for which the rental cost is the same.  $\begin{cases} 30x+10=y \\ 25x+15=y \end{cases}$
  - Graph the system.
  - For what number of hours is the cost of renting clubs and cart the same for each course?  
ONE Hour
  - How much would it cost for that number of hours?  
40 Dollars



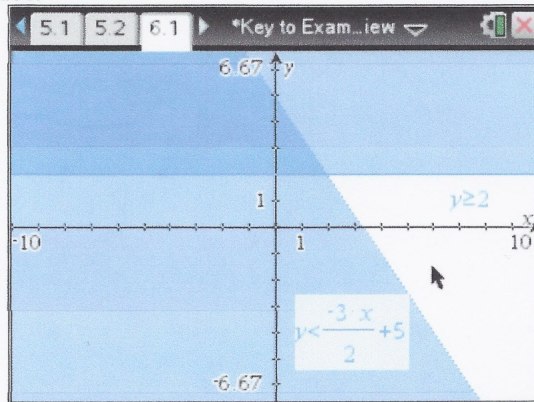
## Algebra II

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17. Graph the system of inequalities.

$$\begin{cases} y \leq -\frac{3}{2}x + 5 \\ y \geq 2 \end{cases}$$



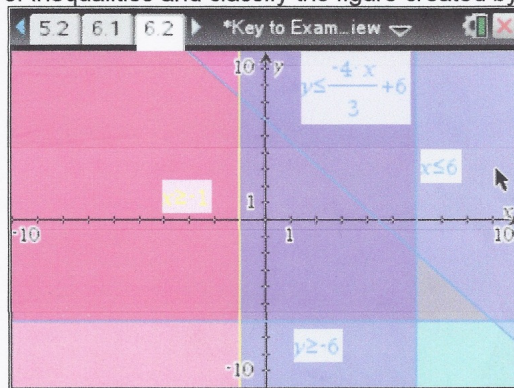
18. Graph the system of inequalities and classify the figure created by the solution

region.

$$\begin{cases} y \leq -\frac{4}{3}x + 6 \\ x \geq -1 \\ y \geq -6 \\ x \leq 6 \end{cases}$$

Classify the region as a figure.

Trapezoid



9-12-12

# Algebra II

KEY

4

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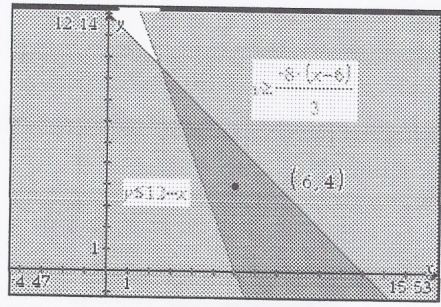
19. A baker is making pastries. He wants to make at least 48 pans of pastries. The kitchen has two sizes of ovens, one bakes 3 pans at a time and the other bakes 8 pans at a time. The kitchen can use up to 12 ovens at a time. Write a system of inequalities that can be used to determine how many of each type of oven to use.

$$y = 3 \text{ PANS AT A TIME}$$
$$x = 8 \text{ PANS AT A TIME}$$

$$x + y \leq 12$$
$$8x + 3y \geq 48$$

$$y \leq 12 - x$$
$$y \geq \frac{-8(x-6)}{3}$$

Problem 2



2.3