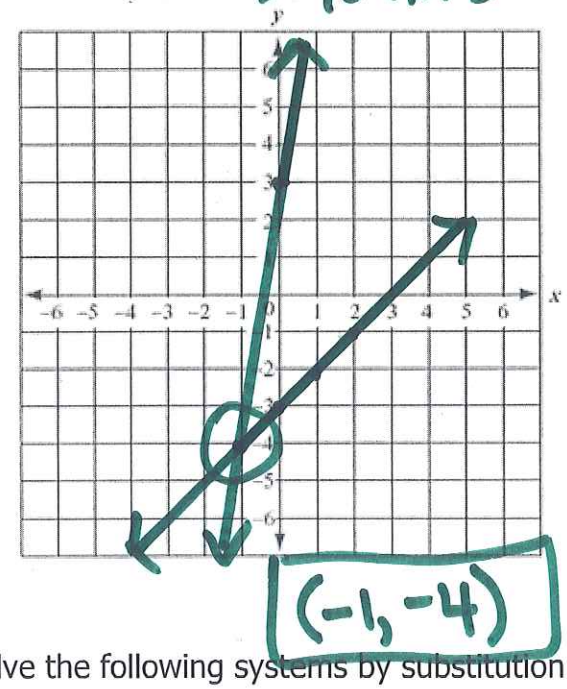
Name: Key Date: _____ Hour: _____

Algebra 2
3.1 – 3.2 Quiz Review

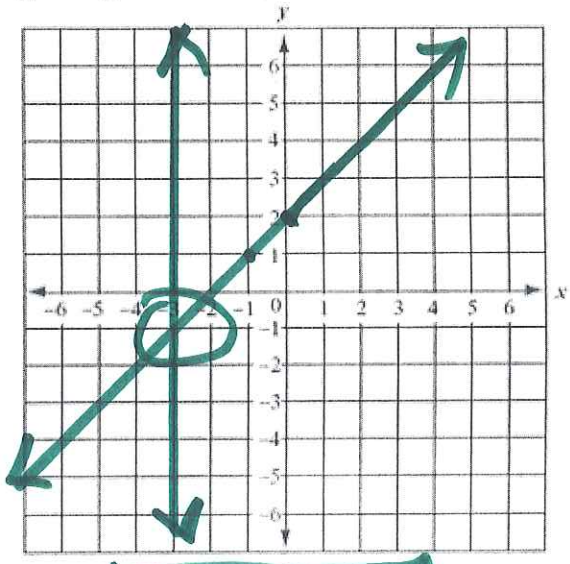
Solve each system by graphing.

1) $x - y = 3$ → $y = x - 3$
$7x - y = -3$ → $y = 7x + 3$



(-1, -4)

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



(-3, -1)

Solve the following systems by substitution.

4) $y = 4x - 9$
$y = x - 3$

$x - 3 = 4x - 9$
$-3x \quad -3x$
$-2x - 3 = -9$
$+3 \quad +3$
$-2x = -6$
$\frac{-2x}{-2} = \frac{-6}{-2}$
$x = 3$

$y = 3 - 3 = -1$

(3, -1)

5) $4x + 2y = 10$
$x - y = 13$ → $x = y + 13$

$4(y + 13) + 2y = 10$
$4y + 52 + 2y = 10$
$6y + 52 = 10$
$-52 \quad -52$
$6y = -42$
$\frac{6y}{6} = \frac{-42}{6}$
$y = -7$

$x = -7 + 13 = 6$

(6, -7)

6) $\begin{cases} 8x - 6y = -20 \\ -16x + 7y = 30 \end{cases}$ $\begin{matrix} 7 \\ 6 \end{matrix}$

$56 - 42y = -140$

$-96x + 42y = 180$

$-40x = 40$

$x = -1$

$8(-1) - 6y = -20$

$-8 - 6y = -20$

$-6y = -12$

$y = 2$

$(-1, 2)$

Solve the following systems.

9) $\begin{cases} x + 7y = 0 \\ 2x - 8y = 22 \end{cases}$ -2

$-2x - 14y = 0$

$-22y = 22$

$y = -1$

$x + 7(-1) = 0$

$x - 7 = 0$

$x = 7$

$(7, -1)$

Draw an example of the following systems.

7) $6x - 12y = 24$

$-x - 6y = 4$

$-6x - 36y = 24$

$-48y = 48$

$y = -1$

$-x - 6(-1) = 4$

$-x + 6 = 4$

$-x = -2$

$x = 2$

$(2, -1)$

10) $-24 - 8x = 12y$

$\left(1 + \frac{5}{9}y = -\frac{7}{18}x\right)$ 18

$18 + 10y = -7x$

$-24 - 8x = 12y$

$(18 + 7x = -10y)\ 8$

$(-24 - 8x = 12y)\ 7$

$144 + 56x = -80y$

$-168 - 56x = 72y$

$-24 = -8y$

$3 = y$

$-24 - 8x = 12(3)$

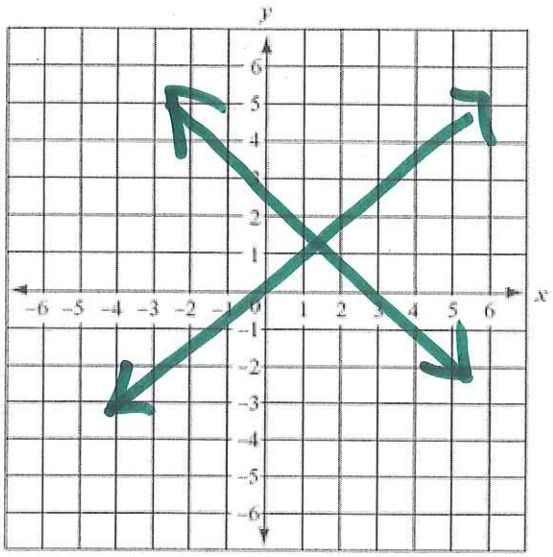
$-24 - 8x = 36$

$-8x = 60$

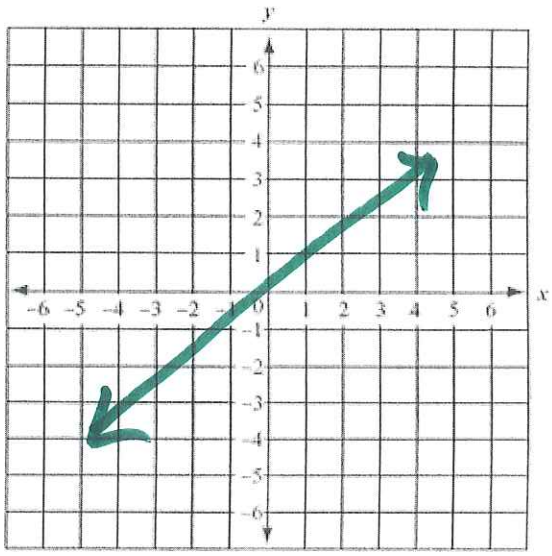
$x = 7.5$

$(7.5, 3)$

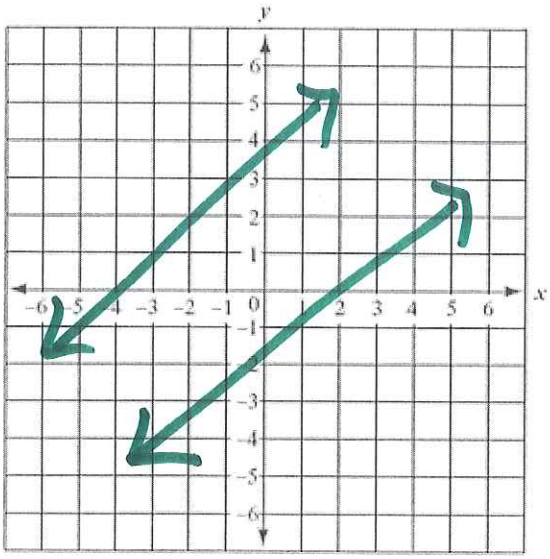
11) Consistent and Independent



12) Consistent and Dependent



13) Inconsistent



14) Which method to solve systems of equations is your preferred method.

Why do you prefer this method?

15) The school that Lisa goes to is selling tickets to the annual talent show. On the first day of ticket sales the school sold 4 senior citizen tickets and 5 students tickets for a total of $102. The school took in $126 on the second day by selling 7 senior citizen tickets and 5 student tickets. What is the price of each the senior citizen ticket and one student ticket?

$$4A + 5S = 102$$
$$-(7A + 5S = 126)$$
$$-3A = -24$$
$$A = \$8$$

$$4(8) + 5S = 102$$
$$32 + 5S = 102$$
$$5S = 70$$
$$S = \$14$$

16) The local amusement park is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 16 vans and 8 buses with 752 students. High School B rented and filled 5 vans and 5 buses with 380 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?

$$5(16V + 8B = 752) \rightarrow \quad 80V + 40B = 3760$$
$$-8(5V + 5B = 380) \rightarrow \quad -40V - 40B = -3040$$
$$40V = 720$$
$$V = 18$$

$$5(18) + 5B = 380$$
$$90 + 5B = 380$$
$$5B = 290$$
$$B = 58$$