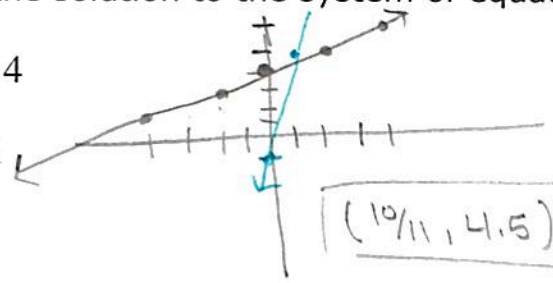
PAP Geometry Systems Notes **Name:** Key

Determine the solution to the system of equations using the graphing method.

1. $\begin{cases} y = \frac{1}{2}x + 4 \\ y = 6x - 1 \end{cases}$



(10/11, 4.5)

$\frac{1}{2}x + 4 = 6x - 1$ (use calc)

$-\frac{1}{2}x \quad +1 \quad -\frac{1}{2}x + 1$

$\frac{5}{5.5} = \frac{5.5x}{5.5}$

$x = \frac{10}{11} \quad y = 4.45$

Determine the solution to the system of equations using the substitution method.

2. $\begin{cases} y = -2 \\ 4x - 3y = 18 \end{cases}$

(3, -2)

$4x - 3(-2) = 18$

$4x + 6 = 18$

$-6 \quad -6$

$4x = 12$

$x = 3$

Determine the solution to the system of equations using the elimination method.

3. $\begin{cases} -4x - 2y = -12 \\ 4x + 8y = -24 \end{cases}$

$6y = -36$

$y = -6$

$-4x - 2(-6) = -12$

$-4x + 12 = -12$

$-4x = -24$

$x = 6$

(-6, 6)

Determine the solution to the system of equations using ANY method.

4. $\begin{cases} 2x + 16y = 64 \\ x = 8y \end{cases}$

$2(8y) + 16y = 64$

$16y + 16y = 64$

$\frac{32y}{32} = \frac{64}{32}$

$y = 2$

$x = 8(2)$

$x = 16$

(16, 2)

Kuta Software - Infinite Algebra 1 Name_____

Solving Systems of Equations by Elimination

Date_____ Period____

Solve each system by elimination.

1) $-4x - 2y = -12$
$4x + 8y = -24$

2) $4x + 8y = 20$
$-4x + 2y = -30$

$10y = -10$
$y = -1$

$4x + 8(-1) = 20$
$4x - 8 = 20$
$\frac{4x}{4} = \frac{28}{4}$
$x = 7$

(7, -1)

3) $x - y = 11$
$2x + y = 19$

$3x = 30$
$x = 10$

$10 - y = 11$
$-10 \quad -10$
$-y = 1$
$y = -1$

(10, -1)

4) $-6x + 5y = 1$
$6x + 4y = -10$

$9y = -9$
$y = -1$

$6x + 4(-1) = -10$
$6x - 4 = -10$
$+4 \quad +4$
$6x = -6$
$x = -1$

(-1, -1)

5) $-2x - 9y = -25$
$-1(-4x - 9y = -23)$

$-2x - 9y = -25$
$4x + 9y = 23$

$2x = -2$
$x = -1$

$-2(-1) - 9y = -25$
$2 - 9y = -25$
$-9y = -27$
$y = 3$

(-1, 3)

6) $8x + y = -16$
$-(-3x + y = -5)$

$8x + y = -16$
$3x - y = 5$

$11x = -11$
$x = -1$

$8(-1) + y = -16$
$-8 + y = -16$
$y = -8$

(-1, -8)

7) $-6x + 6y = 6$
$-6x + 3y = -12$

$6x - 6y = -6$
$-6x + 3y = -12$

$-3y = -18$
$y = 6$

$-6x + 6(6) = 6$
$-6x + 36 = 6$
$-6x = -30$
$x = 5$

(5, 6)

8) $7x + 2y = 24$
$8x + 2y = 30$

$-7x - 2y = -24$
$8x + 2y = 30$

$x = 6$

$8(6) + 2y = 30$
$48 + 2y = 30$
$2y = -18$
$y = -9$

(6, -9)

9) $5x + y = 9$
$10x - 7y = -18$

$-10x - 2y = -18$
$10x - 7y = -18$

$-9y = -36$
$y = 4$

$5x + 4 = 9$
$5x = 5$
$x = 1$

(1, 4)

10) $-4x + 9y = 9$
$3(x - 3y = -6)$

$-4x + 9y = 9$
$3x - 9y = -18$

$-x = -9$
$x = 9$

$9 - 3y = -6$
$-3y = -15$
$y = 5$

(9, 5)

11) $-3x + 7y = -16$
$-9x + 5y = 16$

$9x - 21y = -48$
$-9x + 5y = 16$

$-16y = -32$
$y = 2$

$-3x + 7(2) = -16$
$-3x + 14 = -16$
$-3x = -30$
$x = 10$

(10, 2)

12) $-7x + y = -19$
$-2x + 3y = -19$

$21x - 3y = -57$
$-2x + 3y = -19$

$19x = -76$
$x = -4$

$-2(-4) + 3y = -19$
$8 + 3y = -19$
$3y = -27$
$y = -9$

(-4, -9)

Kuta Software - Infinite Algebra 1 Name_____

Solving Systems of Equations by Graphing

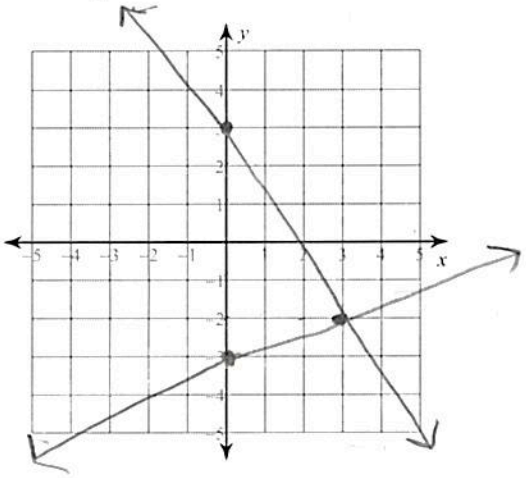
Date_____ Period____

Solve each system by graphing.

1) $y = -\frac{5}{3}x + 3$

$y = \frac{1}{3}x - 3$

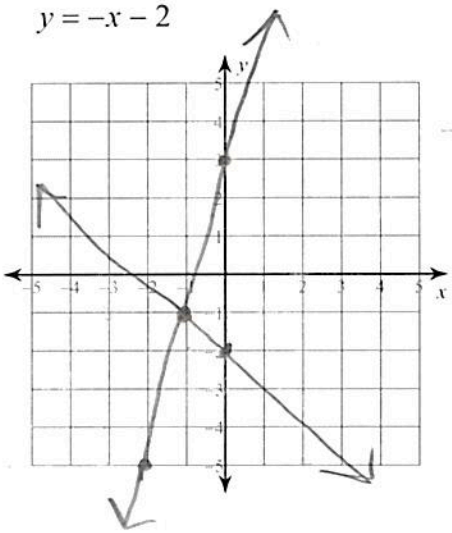
(3, -2)



2) $y = 4x + 3$

$y = -x - 2$

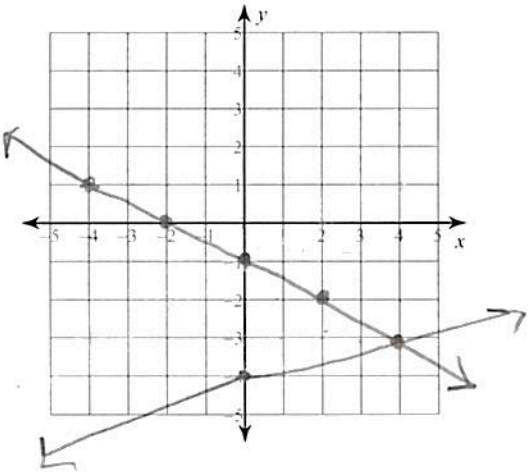
(-1, -1)



3) $y = -\frac{1}{2}x - 1$

$y = \frac{1}{4}x - 4$

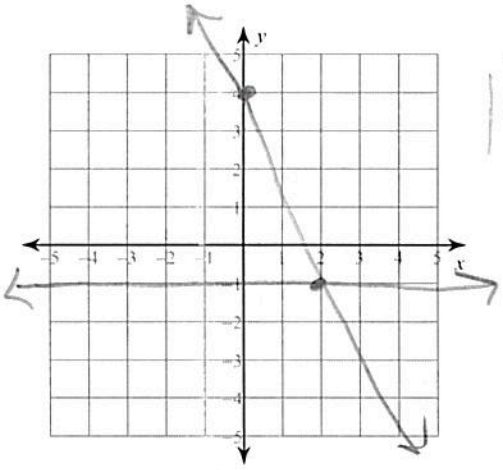
(4, -3)



4) $y = -1$

$y = -\frac{5}{2}x + 4$

(2, -1)



Kuta Software - Infinite Algebra 1 Name_____

Solving Systems of Equations by Substitution

Date_____ Period____

Solve each system by substitution.

1) $y = 6x - 11$
$-2x - 3y = -7$

$y = 6(2) - 11$
$= 12 - 11$
$= 1$

$-2x - 3(6x - 11) = -7$
$-2x - 18x + 33 = -7$
$-20x = -40$
$x = 2$
(2, 1)

2) $2x - 3y = -1$
$y = x - 1$

$y = 4 - 1$
$y = 3$

$2x - 3(x - 1) = -1$
$2x - 3x + 3 = -1$
$-x = -4$
$x = 4$
(4, 3)

3) $y = -3x + 5$
$5x - 4y = -3$

$y = -3(1) + 5$
$y = 2$

$5x - 4(3x + 5) = -3$
$5x + 12x - 20 = -3$
$17x = 17$
$x = 1$
(1, 2)

4) $-3x - 3y = 3$
$y = -5x - 17$

$-3x - 3(-5x - 17) = 3$
$-3x + 15x + 51 = 3$
$12x = -48$
$x = -4$

5) $y = -2$
$4x - 3y = 18$

6) $y = 5x - 7$
$-3x - 2y = -12$

$y = 5(2) - 7$
$y = 10 - 7$
$y = 3$

$-3x - 2(5x - 7) = -12$
$-3x - 10x + 14 = -12$
$-13x = -26$
$x = 2$
(2, 3)

7) $-4x + y = 6$
$-5x - y = 21$

$y = 4x + 6$

$-5x - (4x + 6) = 21$
$-5x - 4x - 6 = 21$
$-9x = 27$
$x = -3$

$y = 4(-3) + 6$
$y = -12 + 6$
$y = -6$
(-3, -6)

8) $-7x - 2y = -13$
$x - 2y = 11$

$-7(2y + 11) - 2y = -13$
$-14y - 77 - 2y = -13$
$-16y = 64$
$y = -4$

$x = 2y + 11$
$x = 2(-4) + 11$
$x = -8 + 11$
$x = 3$
(3, -4)

9) $-5x + y = -2$
$-3x + 6y = -12$

$y = 5x - 2$

$-3x + 6(5x - 2) = -12$
$-3x + 30x - 12 = -12$
$27x = 0$
$x = 0$

$y = 5(0) - 2$
$y = -2$
(0, -2)

10) $-5x + y = -3$
$3x - 8y = 24$

$y = 5x - 3$

$3x - 8(5x - 3) = 24$
$3x - 40x + 24 = 24$
$-37x = 0$
$x = 0$

$y = 5(0) - 3$
$y = -3$
(0, -3)