Kuta Software - Infinite Algebra 1 Name_____

Solving Systems of Equations by Substitution

Date_____ Period____

Solve each system by substitution.

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

SOLUTION: (2, 1)

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

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

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

Solution: (4, 3)

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

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

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

SOLUTION: (1, 2)

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

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

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

SOLUTION: (-4, 3)

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

$y=-5x-17$
$y=-5(-4)-17$
$y=20-17$
$y=3$

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

SOLUTION: (3, -2)

$4x-3(-2)=18$
$4x+6=18$
$4x=12$
$x=3$

$y=-2$

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

SOLUTION: (2, 3)

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

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

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

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

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

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

Equations in Standard Form

ID: 1

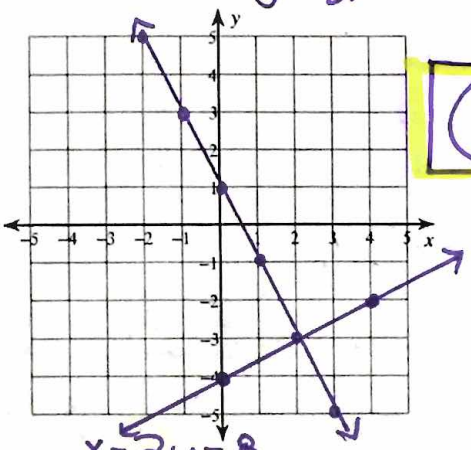
Name_____

Date_____ Period____

Solving Systems by Graphing

Solve each system by graphing.

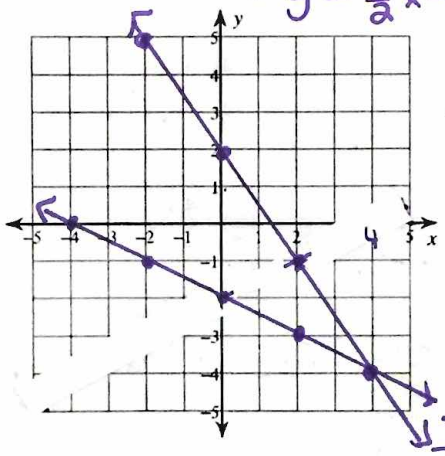
1) $2x + y = 1$ → $y = -2x + 1$
$x - 2y = 8$ → $y = \frac{1}{2}x - 4$



(2, -3)

$x - 2y = 8$
$-x \quad -x$
$\frac{-2y}{-2} = \frac{-x}{-2} + \frac{8}{-2}$ → $y = \frac{1}{2}x - 4$

2) $3x + 2y = 4$ → $y = -\frac{3}{2}x + 2$
$x + 2y = -4$ → $y = \frac{1}{2}x - 2$

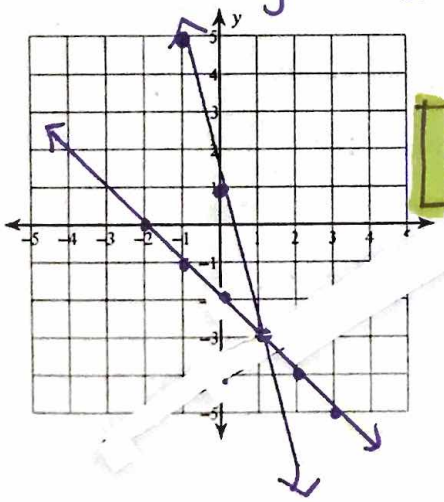


(4, -4)

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

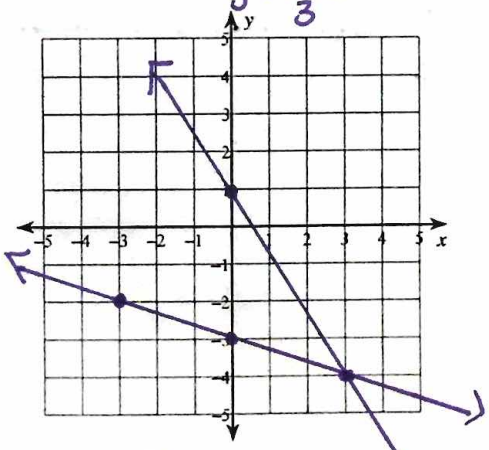
$x + 2y = -4$
$-x \quad -x$
$\frac{2y}{2} = \frac{-x}{2} - \frac{4}{2}$
$y = -\frac{1}{2}x - 2$

3) $4x + y = 1$ → $y = -4x + 1$
$x + y = -2$ → $y = -x - 2$



(1, -3)

4) $x + 3y = -9$ → $y = -\frac{1}{3}x - 3$
$5x + 3y = 3$ → $y = -\frac{5}{3}x + 1$



(3, -4)

$x + 3y = -9$
$-x \quad -x$
$\frac{3y}{3} = \frac{-x}{3} - \frac{9}{3}$
$y = -\frac{1}{3}x - 3$

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