Name: _____
Date: _____
Class: _____

Algebra
Unit 5
HW 5-3

4x & -4x

1) Solve the following system using the elimination method:

$4x+2y=14$

$-4(x-y=-4)$

$4x+2y=14$
$+\ -4x+4y=16$
$6y=30$
$\frac{6y}{6}=\frac{30}{6}$
$y=5$

$4x+2(5)=14$
$4x+10=14$
$-10\ \ -10$
$4x=4$
$\frac{4x}{4}=\frac{4}{4}$
$x=1$

(1, 5)

2) Is (3, -1) a solution to the following system of equations: $4x-3y=15$

$3x+2y=7$

$3(3)+2(-1)\stackrel{?}{=}7$
$9-2=7$
$7=7$ ✓

$4(3)-3(-1)\stackrel{?}{=}15$
$12+3=15$
$15=15$ ✓

yes

3) Solve the following system using the elimination method:

$-3(2x+4y=2)$

6x & -6

$6x+3(1)=-3$
$6x\ 3=-3$
$-3\ \ -3$
$6x=-6$
$\frac{6x}{6}=\frac{-6}{6}$
$x=-1$

(-1, 1)

$6x+3y=-3$
$+\ -6x-12y=-6$
$-9y=-9$
$\frac{-9y}{-9}=\frac{-9}{-9}$
$y=1$

-5y & 5y

4) Solve the following system of equations using whatever method you prefer:

$(2x+y=6)\ -5$

$x+5y=-6$
$+\ -10x-5y=-30$
$-9x=-36$
$\frac{-9x}{-9}=\frac{-36}{-9}$
$x=4$

$4+5y=-6$
$-4\ \ -4$
$5y=-10$
$\frac{5y}{5}=\frac{-10}{5}$
$y=-2$

(4, -2)

10x & 10x

5) Solve the following system of equations using whatever method you prefer:

$2(5x-2y=10)$ $10x-4y=20$

$-5(2x+7y=43)$ $+\ -10x-35y=-215$

$-39y=-195$

$\frac{-39y}{-39}=\frac{-195}{-39}$

$y=5$

$5x-2(5)=10$

$5x-10=10$

$+10 \quad +10$

$\frac{5x}{5}=\frac{20}{5}$

$x=4$

$(4,5)$

6)

Lilly and Rosie are sisters. The sum of their ages is 19 and the positive difference of their ages is 9. Set up a system of equations involving Lilly's age, *L*, and Rosie's age, *R*, assuming that Lilly is the older child. Solve the system to find their ages.

R & -R

$L+R=19$

$+\ L-R=9$

$\frac{2L}{2}=\frac{28}{2}$

$L=14$

$14+R=19$

$-14 \quad -14$

$R=5$