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) $4x + 8y = 20$
$+ -4x + 2y = -30$
$10y = -10$
$y = -1$
$4x + 8(-1) = 20$
$4x - 8 = 20$
$+8 \quad +8$
$4x = 28$
$x = 7$
$(7, -1)$

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

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

6) $8x + y = -16$
$-1(-3x + y = -5)$
$3x - y = 5$
$+ 8x + y = -16$
$11x = -11$
$x = -1$
$8(-1) + y = -16$
$-8 + y = -16$
$+8 \quad +8$
$y = -8$
$(-1, -8)$

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

8) $7x + 2y = 24$
$-1(8x + 2y = 30)$
$-8x - 2y = -30$
$+ 7x + 2y = 24$
$-x = -6$
$x = 6$
$7(6) + 2y = 24$
$42 + 2y = 24$
$-42 \quad -42$
$2y = -18$
$y = -9$
$(6, -9)$

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

10) $-4x + 9y = 9$
$3(x - 3y = -6)$
$3x - 9y = -18$
$+ -4x + 9y = 9$
$-x = -9$
$x = 9$
$(9) - 3y = -6$
$9 - 3y = -6$
$-9 \quad -9$
$-3y = -15$
$y = 5$
$(9, 5)$

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

12) $-7x + y = -19$
$-2x + 3y = -19$
$-3(-7x + y = -19)$
$21x - 3y = 57$
$+ 21x - 3y = 57$
$19x = 38$
$x = 2$
$-2(2) + 3y = -19$
$-4 + 3y = -19$
$+4 \quad +4$
$3y = -15$
$y = -5$
$(2, -5)$

13) $16x - 10y = 10$
$-8x - 6y = 6$

14) $8x + 14y = 4$
$2(-6x - 7y = -10)$
$-12x - 14y = -20$
$+\ 8x + 14y = 4$
$-4x = -16$
$x = 4$

$8(4) + 14y = 4$
$32 + 14y = 4$
$-32 \quad -32$
$14y = -28$
$y = -2$
$(4, -2)$

15) $-4x - 15y = -17$
$-x + 5y = -13$

$-4(-x - 7y = 14)$
$4x + 28y = -56$

16) $-x - 7y = 14$
$-4x - 14y = 28$
$+4x + 28y = -56$
$14y = -28$
$y = -2$

$-4x - 14(-2) = 28$
$-4x + 28 = 28$
$-28 \quad -28$
$-4x = 0$
$x = 0$
$(0, -2)$

17) $-7x - 8y = 9$
$-4x + 9y = -22$

18) $3(5x + 4y = -30)$
$-5(3x - 9y = -18)$
$15x + 12y = -90$
$+\ -15x + 45y = 90$
$57y = 0$
$y = 0$

$5x + 4(0) = -30$
$5x + 0 = -30$
$5x = -30$
$x = -6$
$(-6, 0)$

19) $-4x - 2y = 14$
$-10x + 7y = -25$

20) $5(3x - 2y = 2)$
$-3(5x - 5y = 10)$
$15x - 10y = 10$
$+\ -15x + 15y = -30$
$5y = -20$
$y = -4$

$3x - 2(-4) = 2$
$3x + 8 = 2$
$-8 \quad -8$
$3x = -6$
$x = -2$
$(-2, -4)$

21) $5x + 4y = -14$
$3x + 6y = 6$

22) $5(2x + 8y = 6)$
$2(-5x - 20y = -15)$
$10x + 40y = 30$
$+\ -10x - 40y = -30$
$0 = 0$

Infinitely Many Solutions

23) $-14 = -20y - 7x$
$10y + 4 = 2x$

$3 + 2x - y = 0$
$-3 \quad -3$
$7(2x - y = -3)$
$14x - 7y = -21$

24) $3 + 2x - y = 0$
$-3 - 7y = 10x$
$+7y \quad +7y$
$10x + 7y = -3$
$+\ 14x - 7y = -21$
$24x = -24$
$x = -1$

$-3 - 7y = 10(-1)$
$-3 - 7y = -10$
$+3 \quad +3$
$-7y = -7$
$y = 1$
$(-1, 1)$