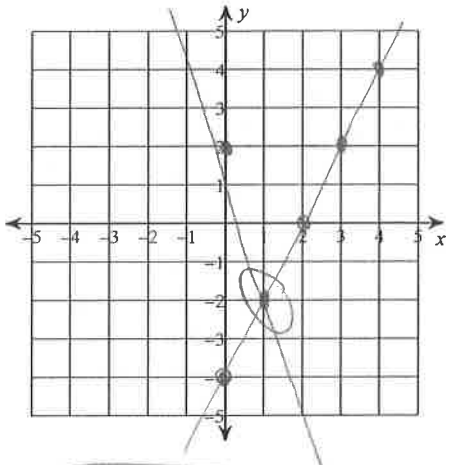
Algebra 1 Name Key

Review WS for Unit 3 Test

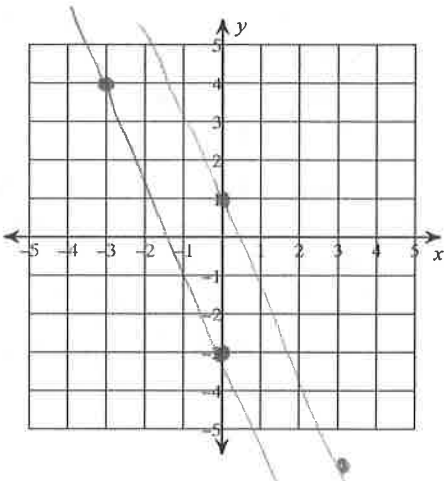
Solve each system by graphing.

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



(1, -2)

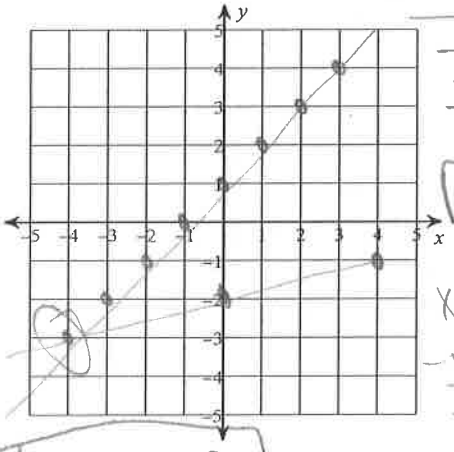
2) $y = -\frac{7}{3}x - 3$
$y = -\frac{7}{3}x + 1$



no soln

3) $x - y = -1$
$x - 4y = 8$

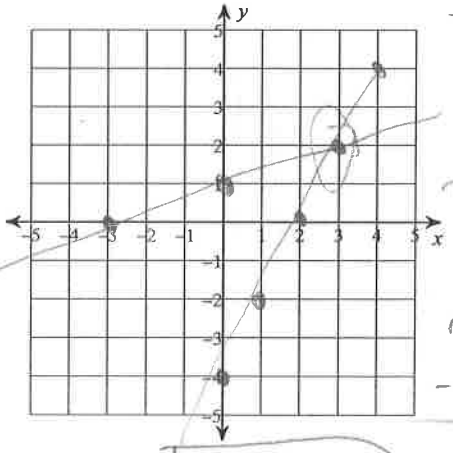
$x - y = -1$
$-x \quad -x$
$-y = -x - 1$
$-1 \quad -1 \quad -1$
$y = x + 1$



(-4, -3)

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

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



(3, 2)

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

$2x - y = 4$
$-2x \quad -2x$
$-y = -2x + 4$
$-1 \quad -1 \quad -1$
$y = 2x - 4$

Solve each system by elimination.

5) $3x + 4y = 13$
$9x - 2y = -17$

6) $3x + 2y = 0$
$2x - 6y = 0$

7) $6x - y = -7$
$-x + 4y = 28$

8) $9x + 9y = 29$
$-6x - 6y = -24$

9) $-3x + 5y = -27$
$-7x + 2y = 24$

10) $7x + 6y = 18$
$-9x - 10y = -30$

Solve each system by substitution.

11) $y = 2x - 3$
$-4x + 8y = 24$

12) $y = -8x - 8$
$-4x + 3y = -24$

13) $y = 2x - 5$
$2x - y = 5$

14) $y = 2x + 5$
$y = -6x + 13$

15) $-8x - 3y = -10$
$x - 5y = 12$

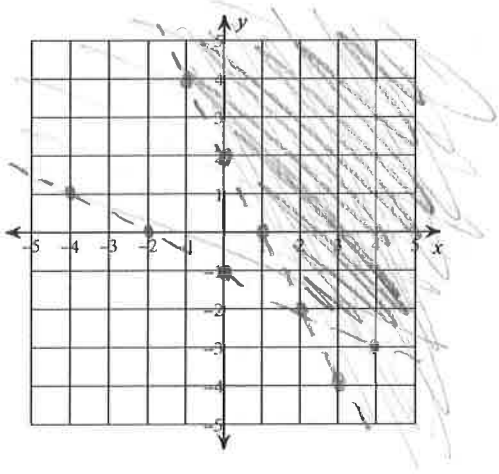
16) $x - 7y = -18$
$-4x - 4y = 8$

17) The state fair 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 7 vans and 12 buses with 720 students. High School B rented and filled 14 vans and 7 buses with 539 students. Each van and each bus carried the same number of students. Find the number of students in each van and in each bus.

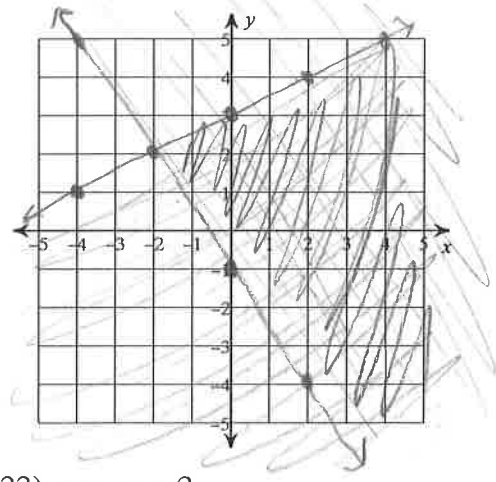
18) Kayla's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 10 senior citizen tickets and 7 child tickets for a total of $220. The school took in $240 on the second day by selling 8 senior citizen tickets and 12 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

Sketch the solution to each system of inequalities.

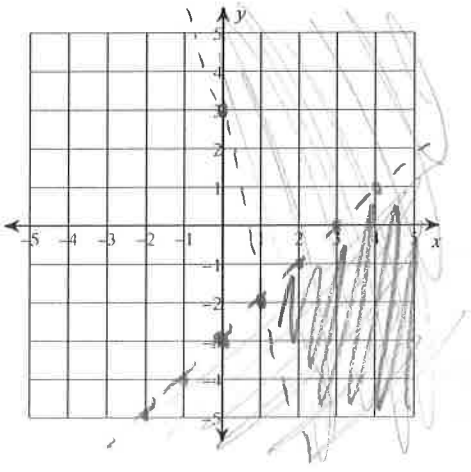
19) $y > -2x + 2$
$y > -\frac{1}{2}x - 1$



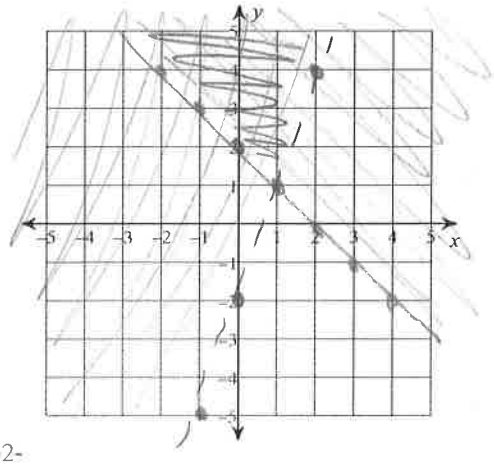
20) $y \leq \frac{1}{2}x + 3$
$y \geq -\frac{3}{2}x - 1$



21) $y > -5x + 3$
$y < x - 3$



22) $y \geq -x + 2$
$y > 3x - 2$



5. $3x+4y=13$

$2(9x-2y=-(7))$

$18x-4y=-34$

$+\ 3x+4y=13$

$21x=-21$

$x=-1$

$3(-1)+4y=13$

$-3+4y=13$

$+3 \quad +3$

$4y=16$

$y=4$

$\boxed{(-1,4)}$

6. $3(3x+2y=0)$

$2x-6y=0$

$+\ 9x+6y=0$

$11x=0$

$x=0$

$3(0)+2y=0$

$2y=0$

$y=0$

$\boxed{(0,0)}$

7. $9(6x-y=-7)$

$-x+4y=28$

$54x-9y=-63$

$-x+4y=28$

$53x=-35$

$x=0$

$6(0)-y=-7$

$-y=-7$

$y=7$

$\boxed{(0,7)}$

8. $6(9x+9y=29)$

$9(-6x-6y=-24)$

$54x+54y=174$

$+\ -54x-54y=-216$

$0=-42$

$\boxed{\text{no sol'n}}$

9. $-2(-3x+5y=-27)$

$5(-7x+2y=24)$

$6x-10y=54$

$+\ -35x+10y=120$

$-29x=174$

$x=-6$

$\boxed{(-6,-9)}$

$-3(-6)+5y=-27$

$18+5y=-27$

$-18 \quad -18$

$5y=-45$

$y=-9$

10. $7x+6y=18$
$7(-9x-10y=-30)$

$63x+54y=162$
$+\ -63x-70y=-210$
$-16y=-48$
$y=3$
$7x+6(3)=18$
$7x+18=18$
$-18\ \ -18$
$7x=0$
$x=0$
$(0,3)$

11. $y=2x-3$
$-4x+8y=24$

$-4x+8(2x-3)=24$
$-4x+16x-24=24$
$\quad\quad\quad\quad +24\ \ +24$
$12x=48$
$x=4$
$y=2(4)-3$
$=5$
$(4,5)$

12. $y=-8x-8$
$-4x+3y=-24$
$-4x+3(-8x-8)=-24$
$-4x-24x-24=-24$
$\quad\quad\quad\quad +24\ \ +24$
$-28x=0$
$x=0$
$y=-8(0)-8$
$=-8$
$(0,-8)$

13. $y=2x-5$
$2x-y=5$
$2x-(2x-5)=5$
$2x-2x+5=5$
$5=5$
ims

14. $y=2x+5$
$y=-6x+13$
$2x+5=-6x+13$
$+6x\quad\quad +6x$
$8x+5=13$
$-5\ \ -5$
$8x=8$
$x=1$
$(1,7)$
$y=2(1)+5$
$=7$

15. $-8x - 3y = -10$

$x - 5y = 12$

$+5y \quad +5y$

$x = 5y + 12$

$-8(5y+12) - 3y = -10$

$-40y - 96 - 3y = -10$

$-43y - 96 = -10$

$+96 \quad +96$

$-43y = 86$

$y = -2$

$x = 5(-2) + 12$

$x = 2$

$(2, -2)$

16. $x - 7y = -18$

$-4x - 4y = 8$

$x - 7y = -18$

$+7y \quad +7y$

$x = 7y - 18$

$-4(7y-18) - 4y = 8$

$-28y + 72 - 4y = 8$

$-32y + 72 = 8$

$-72 \quad -72$

$-32y = -64$

$y = 2$

$x = 7(2) - 18$

$x = -4$

$(-4, 2)$

17. $-2(7x + 12y = 720)$

$14x + 7y = 539$

$+ \quad -14x - 24y = -1440$

$-17y = -901$

$y = 53$

$7x + 12(53) = 720$

$7x + 636 = 720$

$-636 \quad -636$

$7x = 84$

$x = 12$

12 students in van
53 students in bus

18. $8(10x + 7y = 220)$

$-10(8x + 12y = 240)$

$80x + 56y = 1760$

$+ \quad -80x - 120y = -2400$

$-64y = -640$

$y = 10$

$10x + 7(10) = 220$

$10x + 70 = 220$

$-70 \quad -70$

$10x = 150$

$x = 15$

10 senior
15 child