Name: Completed Period: _____

Sections 3.1 through 3.2 Quiz Review

3-1A Solving Systmes by Graphing

1) Determine if (2, 7) is a solution for the system of equations.

$4x - y = 1$

$5x + 2y = 24$

$4(2) - (7) = 1$
$8 - 7 = 1$
$1 = 1$ ✓

$5(2) + 2(7) = 24$
$10 + 14 = 24$
$24 = 24$ ✓

yes

2) Determine if (3, 5) is a solution for the system of equations.

$4x + 5y = -41$

$3y - 5x = 5$

$4(3) + 5(5) = -41$
$12 + 25 = -41$
$37 = -41$
X

no

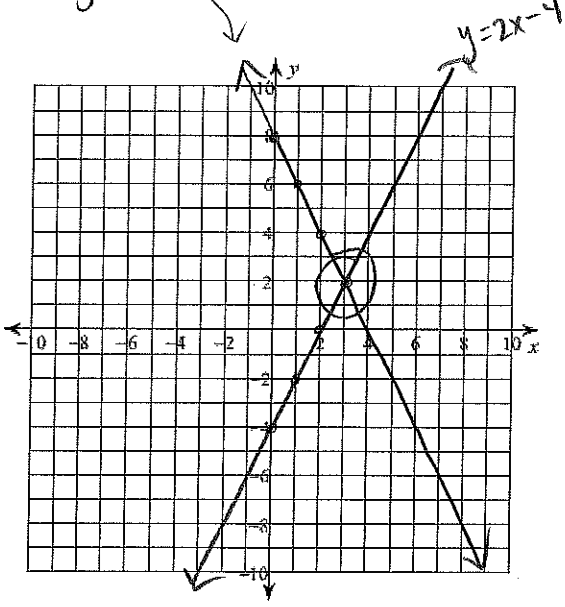
3) Use a graph to solve the system.

$y = 2x - 4$

$2x + y = 8$

(3,2)

$y = 8 - 2x$



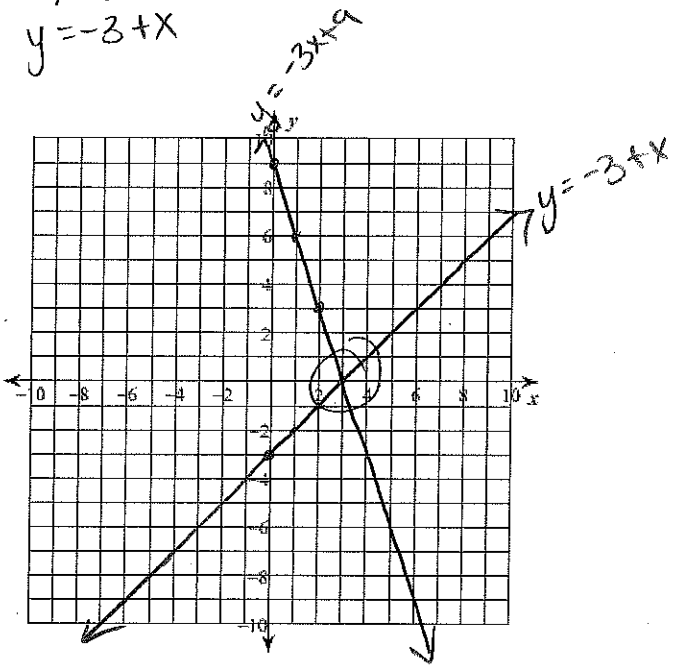
4) Use a graph to solve the system.

$y = -3x + 9$

$-x + y = -3$

(3,0)

$y = -3 + x$



5) Determine the number of solutions of

$-4x + 5y = -17$
$-4x - 2y = 15$

$5y = -17 + 4x$
$y = \frac{-17}{5} + \frac{4}{5}x$

$-2y = 15 + 4x$
$y = \frac{-15}{2} - 2x$

different slopes.

one solution
intersecting

6) Determine the number of solutions of

$5x + 3y = 52$
$15x + 9y = 54$

$3y = 52 - 5x$
$y = \frac{52}{3} - \frac{5}{3}x$

$9y = 54 - 15x$
$y = 6 - \frac{15}{9}x$
$y = 6 - \frac{5}{3}x$

same slopes/
diff y int.
parallel lines

no solution

3-1B Solving Systems Using Substitution

7) Use substitution to solve the system.

$y = -2x + 7$

$5x - 3y = 23$

$5x - 3(-2x+7) = 23$

$5x + 6x - 21 = 23$

$11x - 21 = 23$

$11x = 44$

$x = 4 \longrightarrow y = -2(4)+7$

$y = -8 + 7$

$y = -1$

$(4, -1)$

8) Use substitution to solve the system.

$x - 7y = 11 \longrightarrow x = 11 + 7y$

$5x + 4y = -23$

$5(11+7y) + 4y = -23$

$55 + 35y + 4y = -23$

$55 + 39y = -23$

$39y = -78$

$y = -2 \longrightarrow x = 11 + 7(-2)$

$x = 11 - 14$

$x = -3$

$(-3, -2)$

3-1C Solving Systems Using Elimination

9) Solve the system by elimination.

$4x - 3y = -22$

$+ \quad 2x + 3y = 16$

$6x = -6$

$x = -1 \longrightarrow 4(-1) - 3y = -22$

$-4 - 3y = -22$

$-3y = -18$

$y = 6$

$(-1, 6)$

10) Solve the system by elimination.

$6x - 5y = -8$

$4x - 5y = -12 \xrightarrow{\times(-1)} -4x + 5y = 12$

$2x = 4$

$x = 2 \longrightarrow 6(2) - 5y = -8$

$12 - 5y = -8$

$-5y = -20$

$y = 4$

$(2, 4)$

3-1 Solving Systems of Equations

11) Solve the system by any method.

$-6x - y = 27$

$3x + 8y = 9 \xrightarrow{\times(2)} -6x - y = 27$

$6x + 16y = 18$

$15y = 45$

$y = 3 \longrightarrow 3x + 8(3) = 9$

$3x + 24 = 9$

$3x = -15$

$x = -5$

$(-5, 3)$

12) Solve the system by any method.

$y = -3x + 6$

$2y + 36 = 10x$

$2(-3x+6) + 36 = 10x$

$-6x + 12 + 36 = 10x$

$48 = 16x$

$3 = x \longrightarrow y = -3(3) + 6$

$y = -9 + 6$

$y = -3$

$(3, -3)$

3-1D Systems Applications

13) A youth group went on a trip to an amusement park, travelling in two vans. The number of people in each van and the total cost of admission are shown in the table. Find the adult price and student price of admission.

VAN	ADULTS	STUDENTS	TOTAL COST
A	2	5	$77
B	2	7	$95

n - price per student
d - price per adult

$2d+5n=77$ $\xrightarrow{\times(-1)}$ $-2d-5n=-77$
$2d+7n=95$ $\quad 2d+7n=95$

$2n=18$
$n=9$

$2d+5(9)=77$
$2d+45=77$
$2d=32$
$d=16$

$9 per student
$16 per adult

14) Kate is thinking of two numbers, the sum of the two numbers is 75. Their difference is 9. What are the two numbers?

$x+y=75$
$x-y=9$

$2x=84$
$x=42$ $\longrightarrow$ $42+y=75$
$y=33$

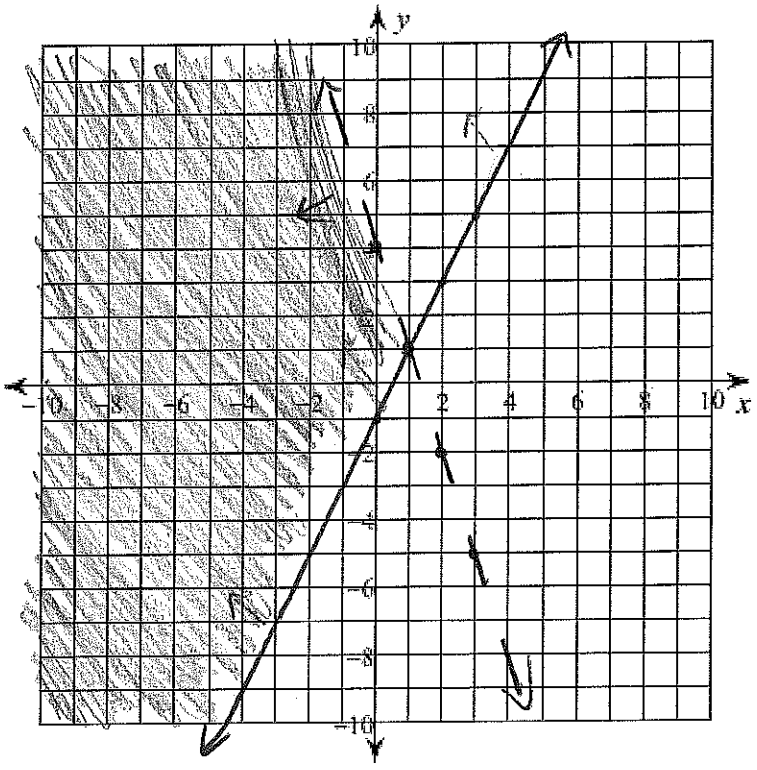
42 and 33

3-2 Systems of Inequalities

Solve the system of Inequalities by Graphing:

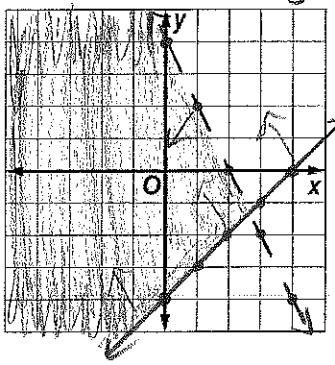
15. $y \geq 2x-1$

$y < -3x+4$



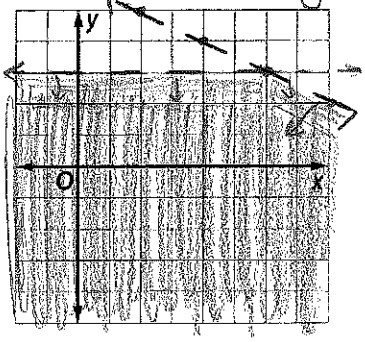
16. $x - y \leq 4$ → $-y \leq 4 - x$ → $y \geq -4 + x$

$2x + y < 4$ → $y < 4 - 2x$



17. $y < 3$

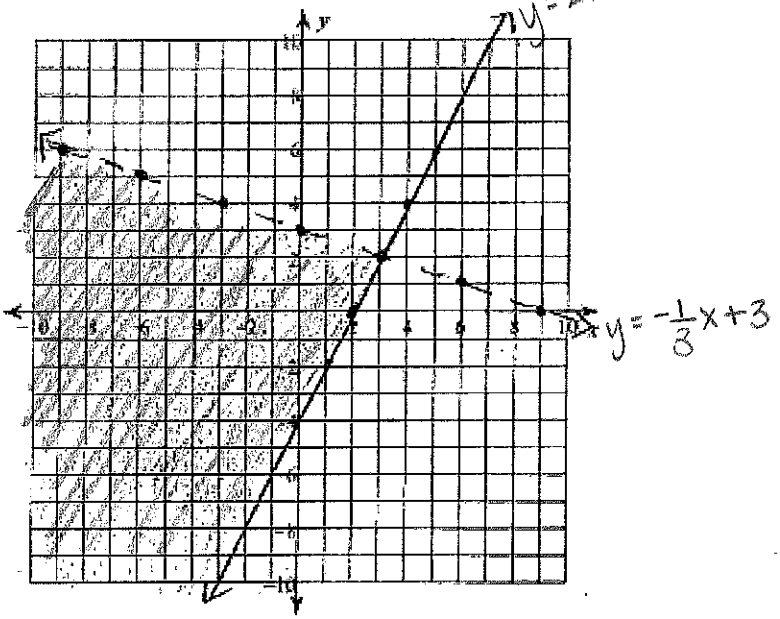
$x + 2y \leq 12$ → $2y < 12 - x$ → $y < 6 - \frac{1}{2}x$



18. Write the system of inequalities shown

$y < -\frac{1}{3}x + 3$

$y \geq 2x - 4$



19. Write the systems of inequalities shown.

$y \leq \frac{1}{2}x + 8$

$y < -x + 2$