Name _____ Class 5 Date _____

Chapter 6 Review

Form G

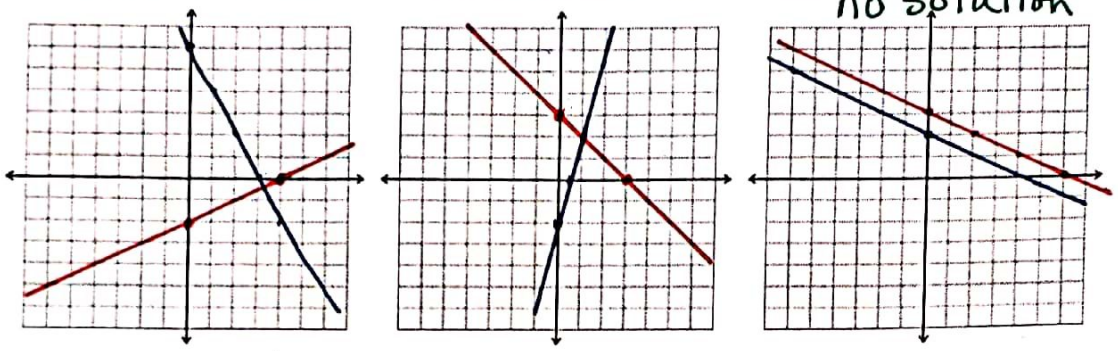
Solve each system by graphing (6.1).

Tell whether the system has *one solution*, *infinitely many solutions*, or *no solution*.

1. $x - 2y = 4$
   $y = -2x + 6$
   one solution

2. $x + y = 3$
   $8x - 2y = 4$
   one solution

3. $2x = -4y + 12$
   $6y = -3x + 12$
   $y = -\frac{1}{2}x + 3$
   $y = -\frac{1}{2}x + 2$
   no solution



Solve each system using substitution (6.2).

4. $3x - 5y = -1$
   $x - y = -1$
   $x = y - 1$
   $3(y-1) - 5y = -1$
   $3y - 3 - 5y = -1$
   $-2y - 3 = -1$
   $-2y = 2$
   $y = -1$
   $x = -1 + 1$
   $x = -2$
   (-2, -1)

5. $x + 2y = -1$
   $2x - 3y = 12$
   $x = -2y - 1$
   $2(-2y-1) - 3y = 12$
   $-4y - 2 - 3y = 12$
   $-7y - 2 = 12$
   $-7y = 14$
   $y = -2$
   $x = -2(-2) - 1$
   $x = 4 - 1$
   $x = 3$
   (3, -2)

6. $x + 3y = 9$
   $3x + y = 5$
   $x = -3y + 9$
   $3(-3y + 9) + y = 5$
   $-9y + 27 + y = 5$
   $-8y + 27 = 5$
   $-8y = -22$
   $y = 2.75$
   $x = -3(2.75) + 9$
   $x = -8.25 + 9$
   $x = .75$
   (.75, 2.75)

Solve each system using elimination (6.3).

7. $x + y = 4$
   $x - y = 6$
   $2x = 10$
   $x = 5$
   $5 + y = 4$
   $y = -1$
   (5, -1)

8. $-2x + 3y = 9$
   $2x - 2y = -4$
   $y = 5$
   $2x - 2(5) = -4$
   $2x - 10 = -4$
   $2x = 6$
   $x = 3$
   (3, 5)

9. $2(x + y = 7)$
   $3x - 2y = 11$
   $2x + 2y = 14$
   $5x = 25$
   $x = 5$
   $5 + y = 7$
   $y = 2$
   (5, 2)

~~10. $7x - 8y = 11$~~
~~$8x - 7y = 7$~~

~~11. $0.4x + 0.3y = 1.7$~~
~~$0.7x - 0.2y = 0.8$~~

12. $3x - 7y + 10 = 0$ → $3x - 7y = -10$
    $y - 2x - 3 = 0$ → $7(-2x + y = 3)$
    $14x + 7y = 21$
    $-11x = 11$
    $x = -1$
    $-2(-1) + y = 3$
    $2 + y = 3$
    $y = 1$
    (-1, 1)

Write a system of equations to model each situation. Solve by any method. (6.4)

13. A wallet contains a total of 61 bills, a combination of $1 bills & $5 bills. The total value of the bills is $201. How many bills of each type does the wallet contain?

$x \rightarrow$ \$1 bills
$y \rightarrow$ \$5 bills

$x + y = 61$
$1x + 5y = 201$
$-x + -y = -61$
$4y = 140$
$y = 35$
$x + 35 = 61$
$x = 26$

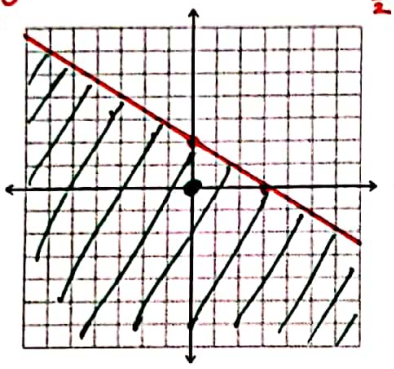
26, \$1 bills
35, \$5 bills

Graph each inequality in the coordinate plane (6.5).

x	y
0	2
3	0

$0 + 0 \leq 6$ yes

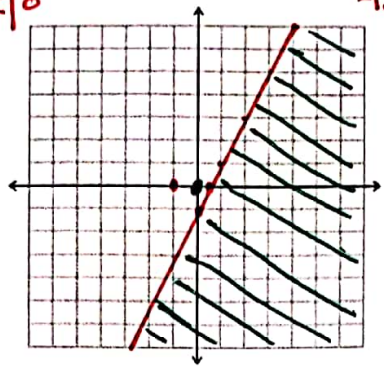
14. $2x + 3y \leq 6$



x	y
0	-1
2	0

$0 - 0 \geq 1$ No

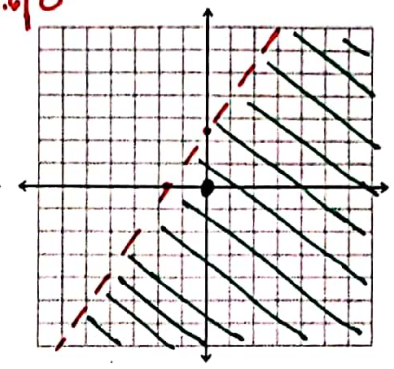
15. $2x - y \geq 1$



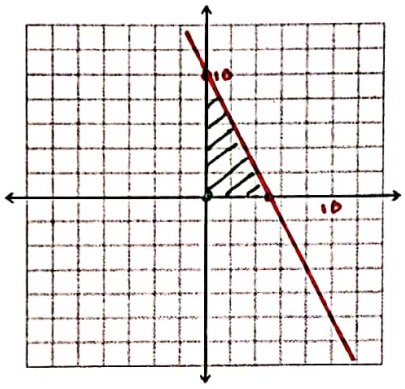
x	y
0	2.5
-1.6	0

$0 + 0 < 5$ yes

16. $-3x + 2y < 5$



17. For a party, you can spend no more than \$20 on cakes. Egg cake cost \$4 and cream cake cost \$2. Write the linear inequality that models the situation. Graph the inequality.



x = Egg Cake
y = Cream Cake

$\$4x + \$2y \leq \$20$

x	y
0	10
5	0

$0 + 0 \leq 20$ yes

18. **Error Analysis** A student determined that (1, 1) is one of the solutions of the linear inequality $y \leq 2x - 3$, as shown below. What error did the student make?

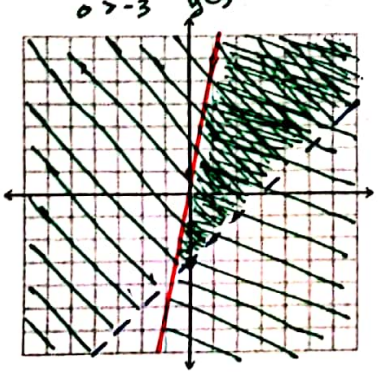
$y \leq 2x - 3$
$1 \leq 2(1) + 3$ → $1 \leq 2 + -3$
$1 \leq -1$

The student did not consider the 3 to be a negative value.

Solve each system by graphing(6.6).

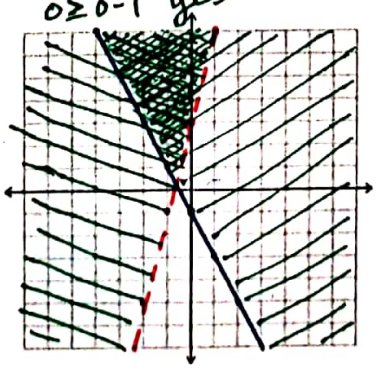
19. $y \leq 5x + 1$
$y > x - 3$

$0 \leq 1$ yes
$0 > -3$ yes



20. $y > 4x + 3$
$y \geq -2x - 1$

$0 > 0 + 3$ No
$0 \geq 0 - 1$ yes



21. $y > -x + 2$
$y > x - 4$

$0 > 0 + 2$ No
$0 > 0 - 4$ yes