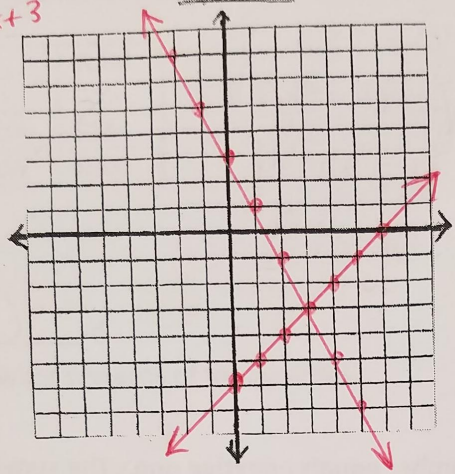
Name Key Period _____

Chapter 6 Review (Systems)

Solve the following system by graphing. Check your solution.

1. $y + 2x = 3$
   $y = x - 6$

$y = -2x + 3$



1. (3, -3)

Solve the following systems by substitution.

2. $4x + 5y = 11$
   $y - 3x = -13 \Rightarrow y = 3x - 13$

$4x + 5(3x - 13) = 11$
$4x + 15x - 65 = 11$
$19x = 76$
$x = 4$

$y = 3(4) - 13$
$y = 12 - 13$
$y = -1$

2. (4, -1)

3. $2x - y = 5$
   $y = 2x - 6$

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

3. No solution

Solve the following systems by elimination.

4. $8x + 5y = 38 \Rightarrow 8x + 5y = 38$
   $2(-4x + y = 2) \Rightarrow -8x + 2y = 4$

$7y = 42$
$y = 6$

$8x + 5(6) = 38$
$8x = 8$
$x = 1$

4. (1, 6)

Solve the following systems using any method.

5. $9x + y = 13$ $\Rightarrow y = 13 - 9x$
   $3x + 2y = -4$

$3x + 2(13 - 9x) = -4$
$3x + 26 - 18x = -4$
$-15x + 26 = -4$
$-15x = -30$
$x = 2$

$y = 13 - 9(2)$
$y = 13 - 18$
$y = -5$

5. $(2, -5)$

6. Seven times a number plus three times another number equals negative one. The sum of the two numbers is negative three. What are the two numbers?

$7x + 3y = -1$
$x + y = -3 \Rightarrow y = -3 - x$

Equations $7x + 3y = -1$
$x + y = -3$

$7x + 3(-3 - x) = -1$
$7x - 9 - 3x = -1$
$4x - 9 = -1$
$4x = 8$
$x = 2$

$y = -3 - 2$
$y = -5$

6. $(2, -5)$

7. **FOOTBALL** Adam Vinatieri of the Indianapolis Colts made a total of 21 field goals and extra point kicks in the resent post-season. A field goal is worth 3 points and the extra point is worth 1 point. Adam scored 49 points as the kicker. How many field goals did he make? How many extra points?

F = # of field goals E = # extra point kicks

Equations $F + E = 21$
$3F + E = 49$

$F + E = 21$
$-[3F + E = 49]$
$-2F = -28$
$F = 14$

$F + E = 21$
$14 + E = 21$
$E = 7$

Field Goals 14

Extra Points 7

Solve the following systems using any method.

8. The cost of two groups going to an amusement park are shown in the table. What is the cost for each type of ticket?

Group	Total Cost
4 adults, 2 Children	$184
4 adults, 3 children	$200

$4a+2c=184$
$-[4a+3c=200]$

$-c=-16$
$c=16$

$4a+2(16)=184$
$4a=152$
$a=38$

Equations $4a+2c=184$
$4a+3c=200$

Adult 38

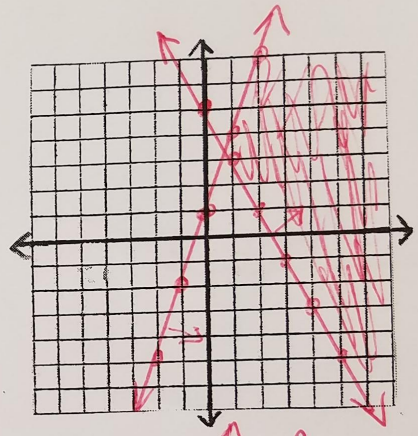
Children 16

Solve the following systems of inequalities.

9. $y \geq -2x+5$
$3x-y \geq -1$ $\Rightarrow$ $y \leq 3x+1$

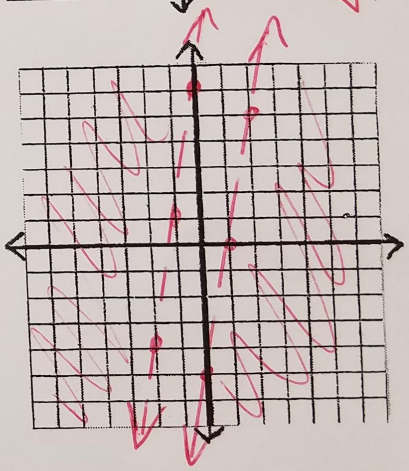
$3x-y \geq -1$
$-y \geq -3x-1$
$y \leq 3x+1$

9.



10. $y < 5x-5$
$y > 5x+6$

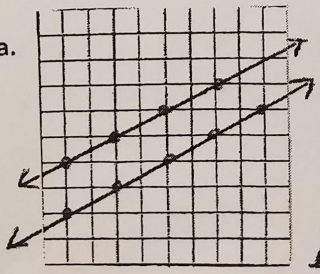
10.



NO Solution

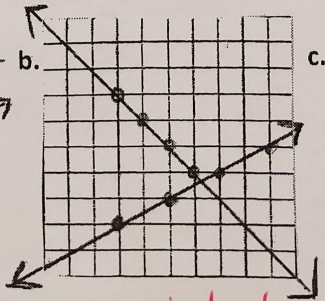
11. **Determine whether each system is consistent or inconsistent and if it is dependent or independent.**

a.



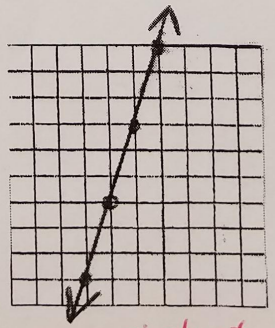
Inconsistent

b.



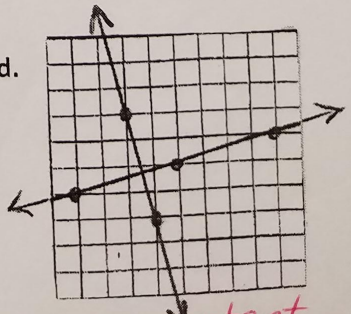
Consistent Independent

c.



Consistent Dependent

d.



Consistent Independent