

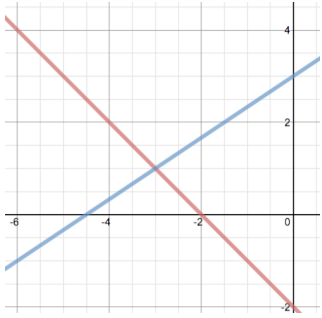
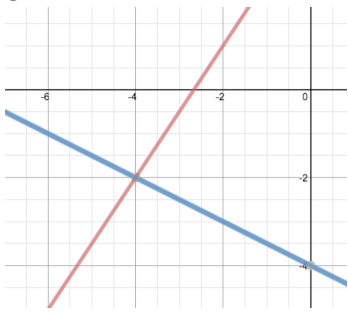
Algebra 2
3-1 Solving LinSys by Graphing

Name _____
 Date _____ **A#1**



Goal:	
System of Equations:	Solution of a System: On a graph: Equations:

I. Check each point to see if it is a solution to the system of linear equations.

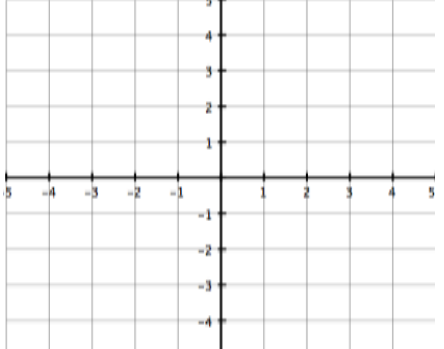
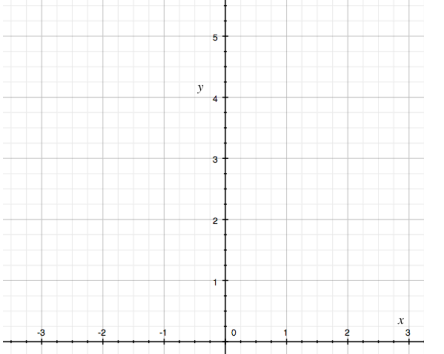
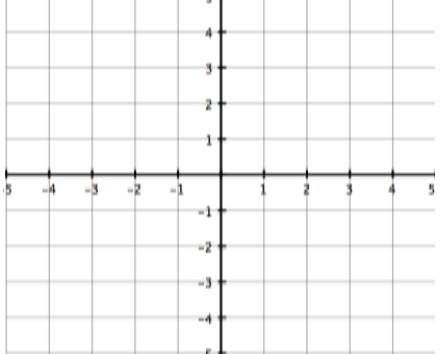
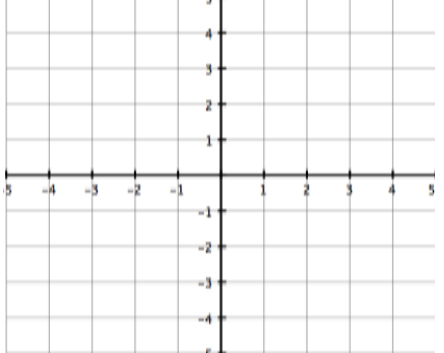
Linear System	Point	Check First Equation	Check Second Equation
1. $3x + 2y = 4$ $-x + 3y = -5$	$(2, -1)$ $x =$ $y =$	$3x + 2y = 4$	$-x + 3y = -5$
2. $x + y = 4$ $2x + y = 5$	$(5, -1)$ $x =$ $y =$		
3. $x - y = 5$ $2x + 3y = 0$	$(3, -2)$ $x =$ $y =$		
4. 	(\quad , \quad) $x =$ $y =$	$x + y = -2$	$2x - 3y = -9$
5. 		$-3x + 2y = 8$	$x + 2y = -8$

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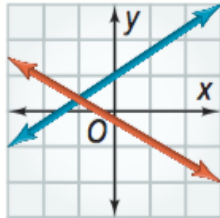
II. Solving LinSys by Graphing

Linear System	Graph	Solution/Check
1. $y = -x + 2$ $y = x + 2$ $m =$ $m =$ $b =$ $b =$		Solution: (,) $y = -x + 2$ $y = x + 2$
2. $y = x + 4$ $y = 4x + 1$		Solution: (,) $y = x + 4$ $y = 4x + 1$
3. $y = 1$ $3x + 4y = 16$		
4. $x = 2$ $2x + 4y = 8$		



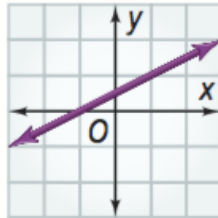
III. Types of Systems

Intersecting Lines



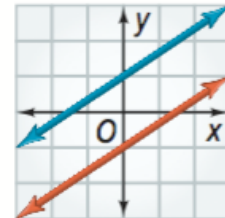
one solution
Consistent
Independent

Coinciding Lines



infinitely many solutions
Consistent
Dependent

Parallel Lines



no solution
Inconsistent

Got It? Without graphing, is the system $\begin{cases} -3x + y = 4 \\ x - \frac{1}{3}y = 1 \end{cases}$ *independent, dependent, or inconsistent?*

19. Write each equation in slope-intercept form.

$-3x + y = 4$

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

20. The slope of $-3x + y = 4$ is and the slope of $x - \frac{1}{3}y = 1$ is .

21. The y-intercept of $-3x + y = 4$ is and the y-intercept of $x - \frac{1}{3}y = 1$ is .

22. Underline the correct words to complete the sentence.

Because the slopes of the lines are equal / not equal and the y-intercepts are the same / different, the system is inconsistent / independent / dependent.

Without graphing, does each system have zero, one, or infinitely many solutions? To start, rewrite each equation in slope-intercept form.

7. $\begin{cases} 4y + 8 = 12x \\ y - 5 = 3x \end{cases}$

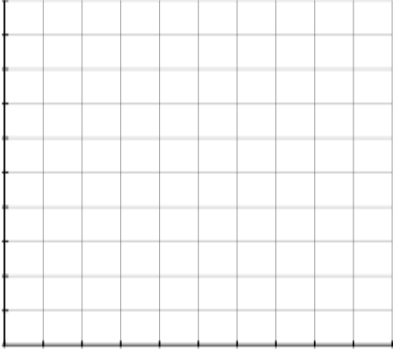
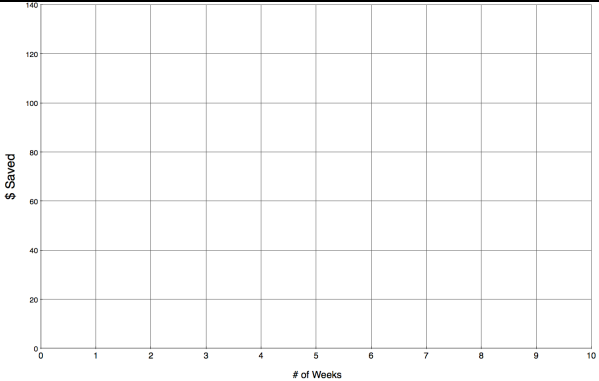
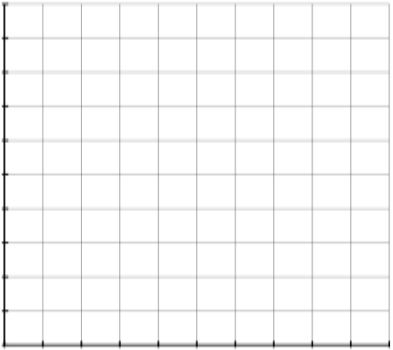
8. $\begin{cases} 6y - 3x = 12 \\ 2y = x + 4 \end{cases}$

9. $\begin{cases} \frac{1}{5}y = x - \frac{1}{5} \\ x = 11 - y \end{cases}$

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IV. Application

What are you trying to find?		Graph	Solution/Check
<p>Example: Suppose you have \$20 in you bank account. You start saving \$5 each week. Your friend has \$5 in his account and is saving \$10 each week. Assuming neither of you make withdrawals, when will you have the same amount? How much will you have saved?</p>			<p>Solution: (,)</p>
Me	Rate $(m) =$ Initial $(b) =$		
My friend	Rate $(m) =$ Initial $(b) =$		
<p>5. Suppose you have \$55 in you bank account. You start saving \$10 each week. Your friend has \$20 in her account and is saving \$15 each week. When will you and your friend have the same amount in you accounts? How much will you have?</p>			<p>Solution: (,)</p>
Me	Rate $(m) =$ Initial $(b) =$		
My friend	Rate $(m) =$ Initial $(b) =$		
<p>6. Chicken costs \$3/lb and ribs cost \$4/lb. If you bought 12 pounds of meat and paid \$43, how much of each meat did you buy?</p>			<p>Solution: (,)</p>
Cost Eq 1			
Pounds Eq 2			