

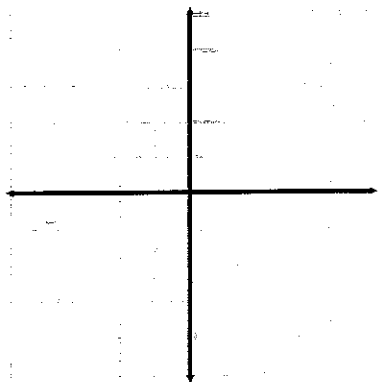
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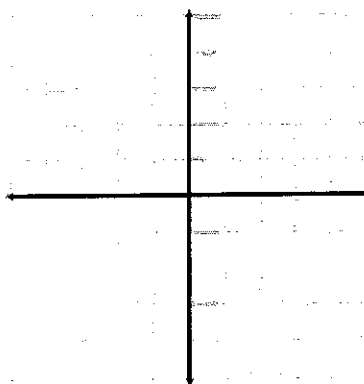
Warm-Up Graphing Linear Equations Worksheet

Graph each equation on the provided Coordinate Plane. If you need to scale your coordinate plane so that the points you elect to graph will fit, please label accordingly.

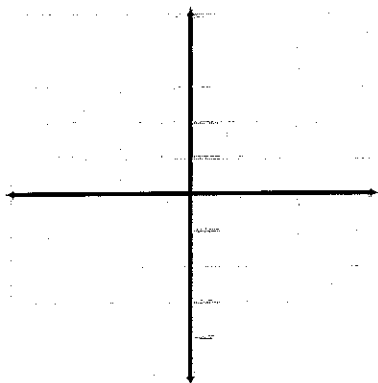
1) $y = 2x - 3$



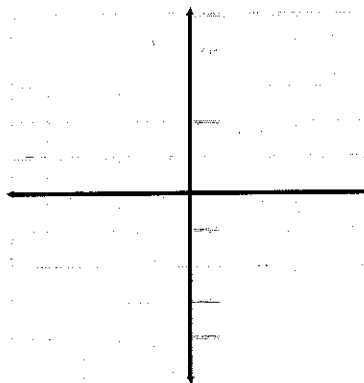
2) $y = -3x + 2$



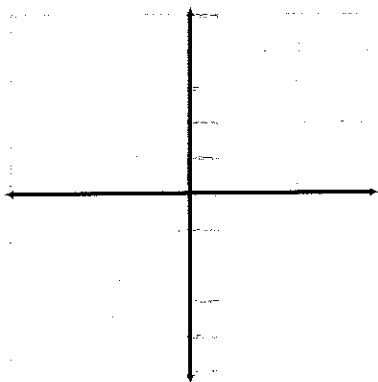
3) $y = \frac{1}{2}x - 5$



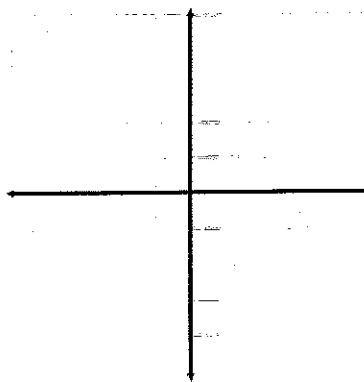
4) $y = -\frac{2}{3}x + 4$



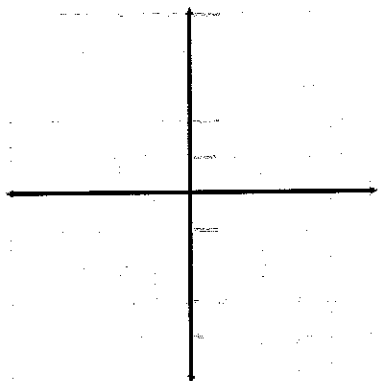
5) $x + y = 4$



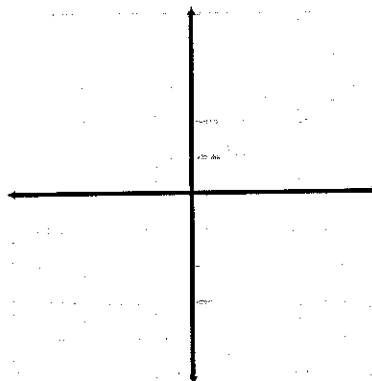
6) $y = 3$



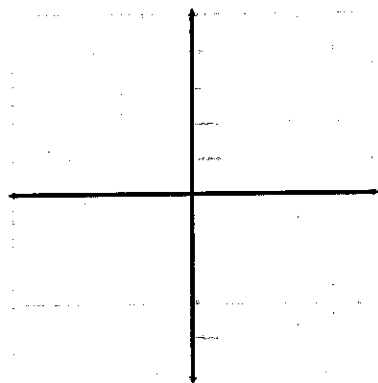
7) $2x - y = 3$



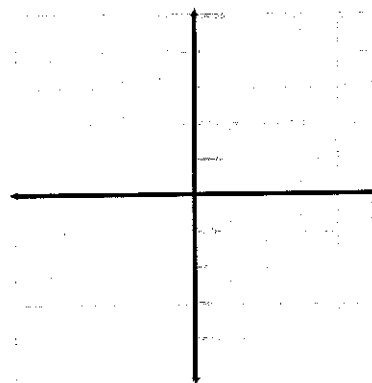
8) $2x + 4y = 8$



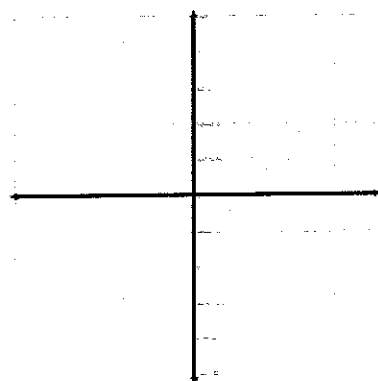
9) $x + 1 = -5$



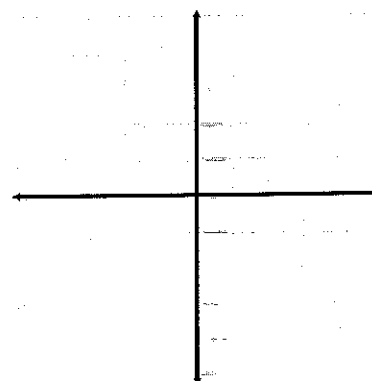
10) $3x - 5y = 10$



11) $3x + 2y = 7$



12) $3x - \frac{1}{2}y = 2$



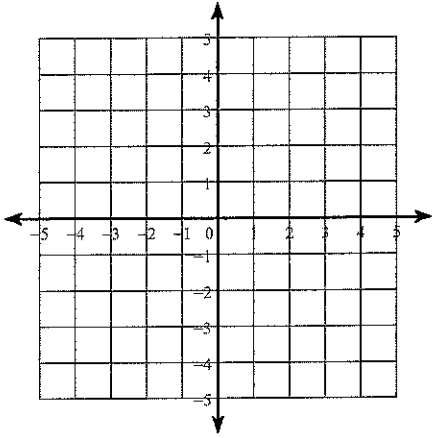
5-1: SST by Graphing

Name: _____

Hour: _____

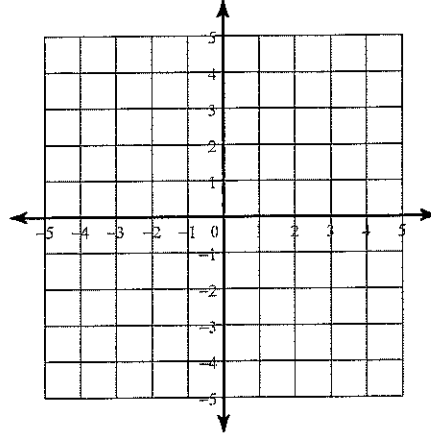
1. $y = -\frac{3}{2}x + 4$

$y = \frac{3}{2}x - 2$

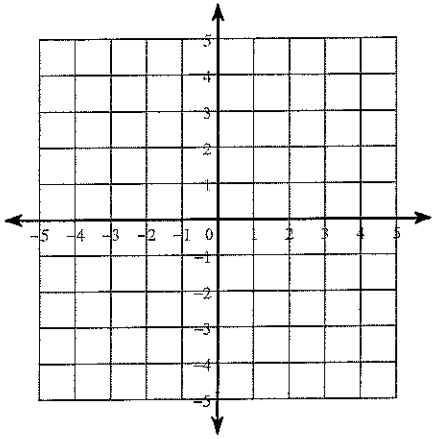


2. $y = 2x - 4$

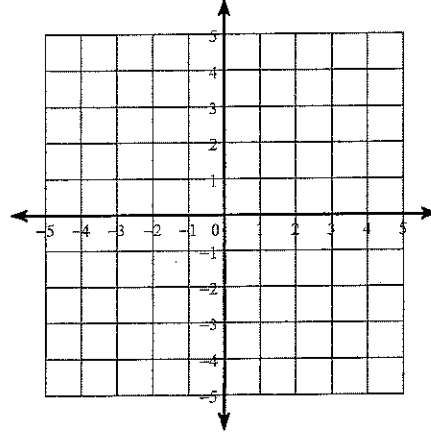
$y = \frac{1}{4}x + 3$



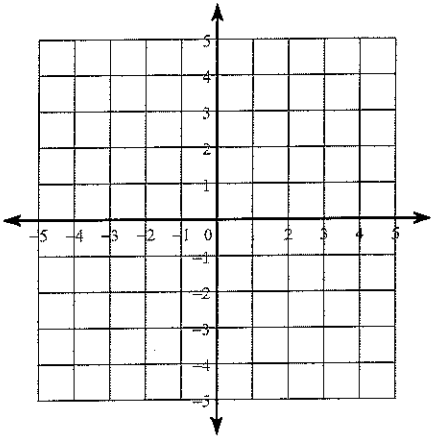
3. $5x + y = 4$
 $x - y = 2$



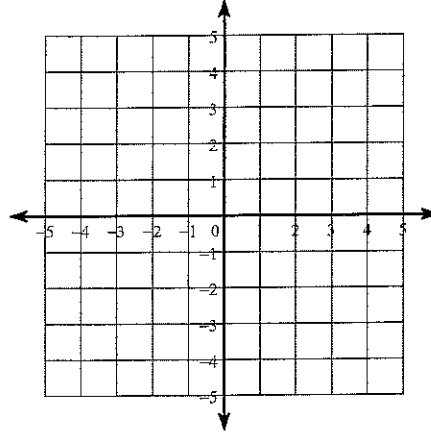
4. $x - 4y = -4$
 $5x - 4y = 12$



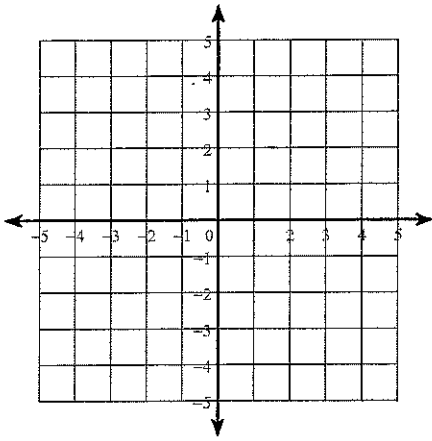
5. $x + y = 3$
 $8x + y = -4$



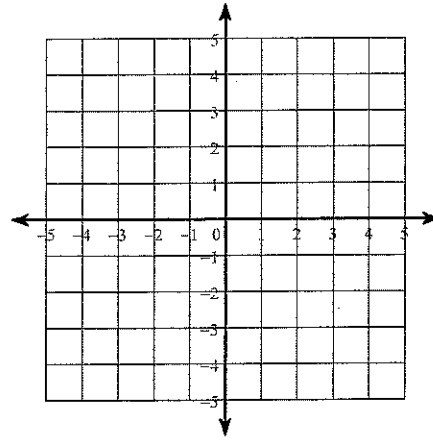
6. $x - y = 2$
 $x = -2$



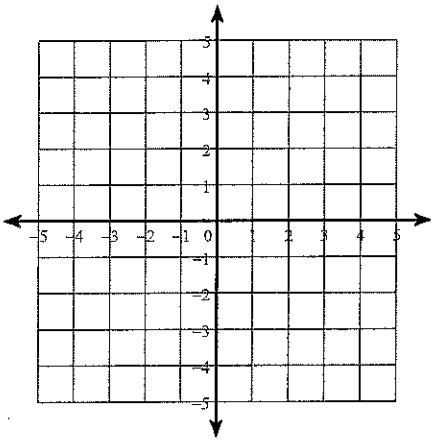
7. $2x + y = 1$
 $2x - y = 3$



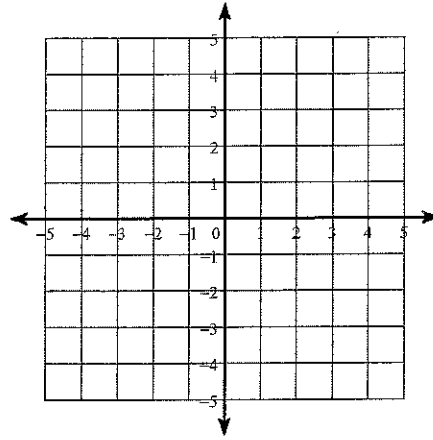
8.) $x - 3y = -6$
 $2x - y = 3$



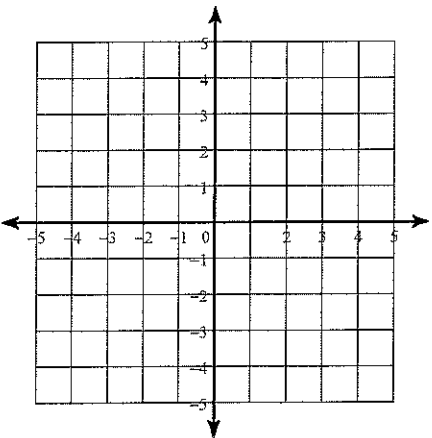
9. $x + 3y = -12$
 $5x - 3y = -6$



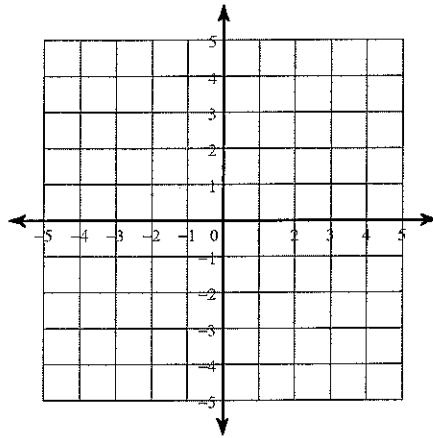
10. $2x + y = -4$
 $x + 4y = 12$



11.) $x + 2y = 8$
 $x - 2y = -4$



12. $2x + 3y = -12$
 $5x - 3y = -9$

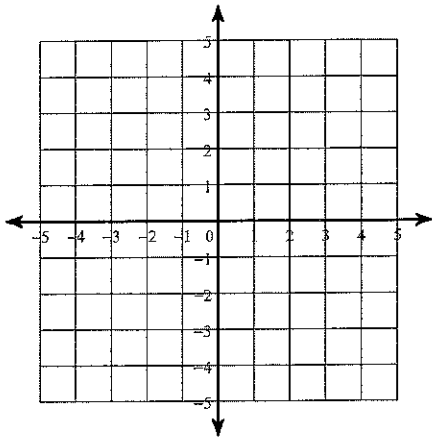


5-1: SST by Graphing

Name: _____ Hour: _____

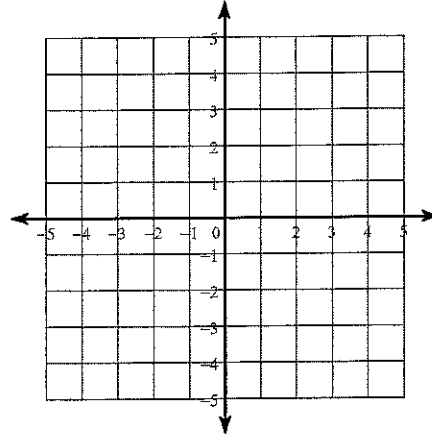
1. $y = -\frac{3}{2}x + 4$

$y = \frac{3}{2}x - 2$

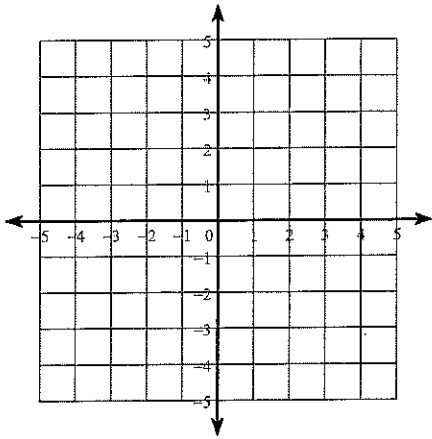


2. $y = 2x - 4$

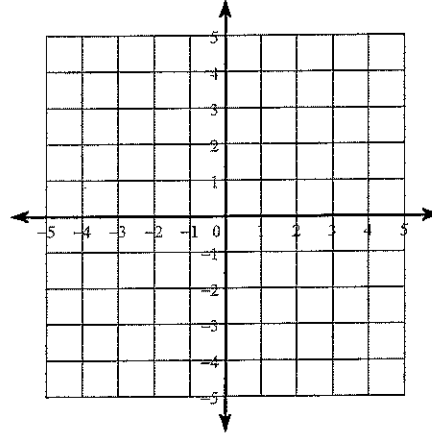
$y = \frac{1}{4}x + 3$



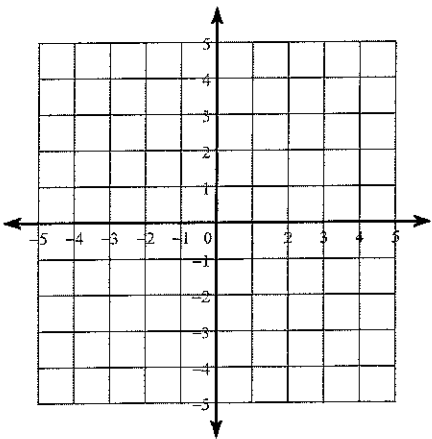
3. $5x + y = 4$
 $x - y = 2$



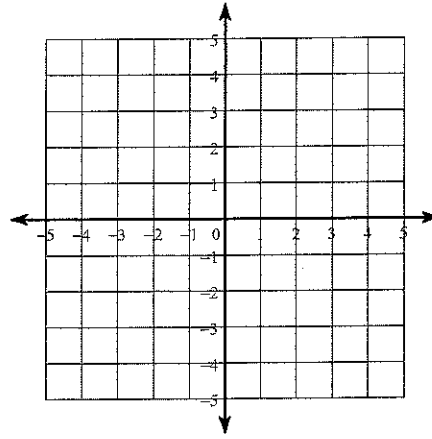
4. $x - 4y = -4$
 $5x - 4y = 12$



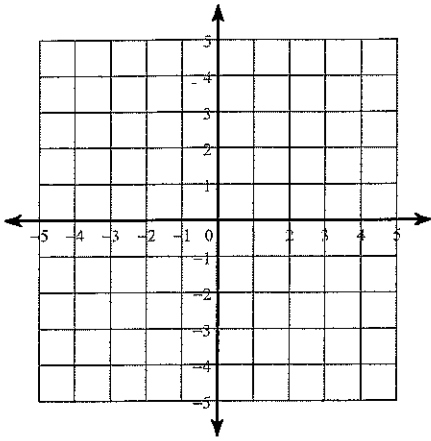
5. $x + y = 3$
 $8x + y = -4$



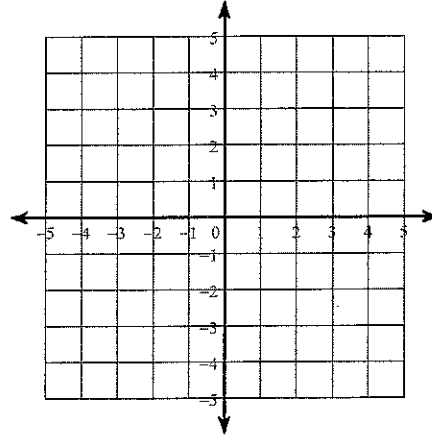
6. $x - y = 2$
 $x = -2$



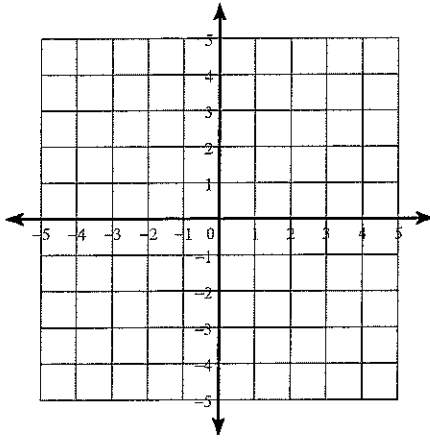
7. $2x + y = 1$
 $2x - y = 3$



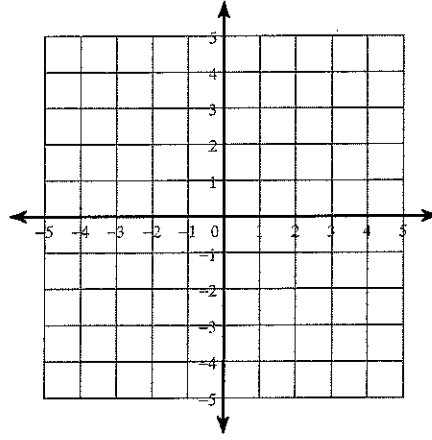
8.) $x - 3y = -6$
 $2x - y = 3$



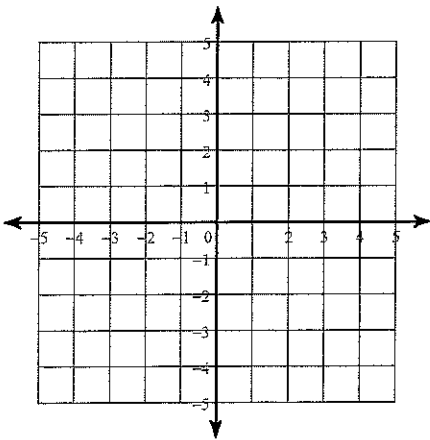
9. $x + 3y = -12$
 $5x - 3y = -6$



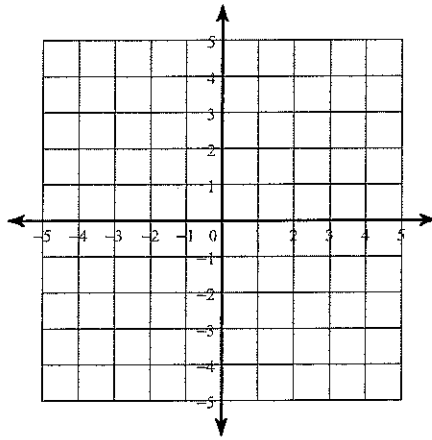
10. $2x + y = -4$
 $x + 4y = 12$



11.) $x + 2y = 8$
 $x - 2y = -4$



12. $2x + 3y = -12$
 $5x - 3y = -9$



3-1 Study Guide and Intervention

Solving Systems of Equations

Solve Systems Graphically A system of equations is two or more equations with the same variables. You can solve a system of linear equations by using a table or by graphing the equations on the same coordinate plane. If the lines intersect, the solution is that intersection point. The following chart summarizes the possibilities for graphs of two linear equations in two variables.

Graphs of Equations	Slopes of Lines	Classification of System	Number of Solutions
Lines intersect	Different slopes	Consistent and independent	One
Lines coincide (same line)	Same slope, same y -intercept	Consistent and dependent	Infinitely many
Lines are parallel	Same slope, different y -intercepts	Inconsistent	None

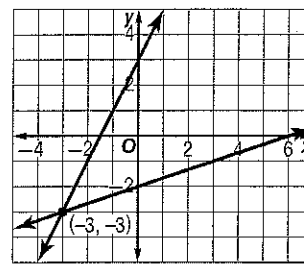
Example Graph the system of equations and describe it as *consistent and independent*, *consistent and dependent*, or *inconsistent*. $x - 3y = 6$
 $2x - y = -3$

Write each equation in slope-intercept form.

$$x - 3y = 6 \rightarrow y = \frac{1}{3}x - 2$$

$$2x - y = -3 \rightarrow y = 2x + 3$$

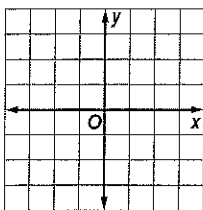
The graphs intersect at $(-3, -3)$. Since there is one solution, the system is consistent and independent.



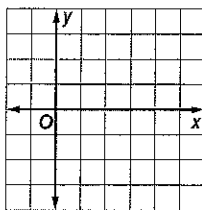
Exercises

Graph each system of equations and describe it as *consistent and independent*, *consistent and dependent*, or *inconsistent*.

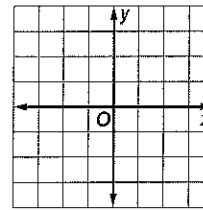
1. $3x + y = -2$
 $6x + 2y = 10$



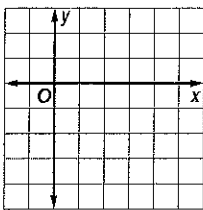
2. $x + 2y = 5$
 $3x - 15 = -6y$



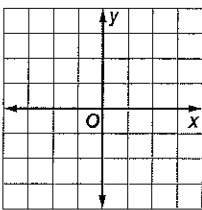
3. $2x - 3y = 0$
 $4x - 6y = 3$



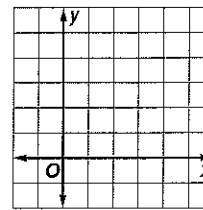
4. $2x - y = 3$
 $x + 2y = 4$



5. $4x + y = -2$
 $2x + \frac{y}{2} = -1$



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



Name: _____ Hour: _____

Pre-Algebra Review

SHOW ALL WORK!!

Part 1: Solving Multi-Step Equations

1) $-13 = 5(1 + 4m) - 2m$

5) $8 = 8v - 4(v + 8)$

2) $37 = -3 + 5(x + 6)$

6) $8(4k - 4) = -5k - 32$

3) $4(-x + 4) = 12$

7) $-5n - 8(1 + 7n) = -8$

4) $-2 = -(n - 8)$

8) $5(2x + 6) = -4(-5 - 2x) + 3x$

Part 2: Evaluating Expressions

9) $a - 5 - b$, when $a = 10$, $b = 4$

10) $6q + m - q$, when $m = 8$ and $q = 3$

11) $z(x + y)$, when $x = 6$, $y = 8$, and $z = 6$

12) $12k - h^2$, when $h = 2$ and $k = 3$

Take a look at the solved problem below. In your own words, explain what happened at each step.

Original problem:

$$y = -3x + 6$$

$$2y = 10x - 36$$

$$2y = 10x - 36$$

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

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

$$12 = 16x - 36$$

$$48 = 16x$$

$$3 = x$$

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

$$y = -9 + 6$$

$$y = -3$$

$$(3, -3)$$

Step 1

Step 2

Step 3

Step 4

Step 5

Step 6

Step 7

Step 8

Step 1: _____

Step 2: _____

Step 3: _____

Step 4: _____

Step 5: _____

Step 6: _____

Step 7: _____

Step 8: _____

Name: Key

Date: _____

Hour: **Guided Notes: Solving Systems of Equations by Substitution**

When we are solving a system of equations, your solution is an ordered pair.

(unless your lines are parallel (no solutions) or the same line (infinite solutions))

We have already looked at Solving Systems through Graphing; now it's time to learn another way to solve a system of equations - through substitution.

Substitution Method:

Step 1: Find an equation that looks like $x = \underline{\hspace{1cm}}$ or $y = \underline{\hspace{1cm}}$.
If you don't see one, solve one of the equations for a variable.

Step 2: Circle everything after the equal sign. This is your "blob"

Step 3: Substitute "the blob" into the other equation, for the variable it equals, then solve the equation.

Step 4: Substitute your answer from Step 3 into your "blob" equation to solve for the other variable.

Step 5: Write your answer as (x, y) .

Example: Solve the following systems by using substitution.

1) $x = -5y + 3$

$3x - 2y = -8$

$(-2, 1)$

2) $5x - 3y = 23$

$2x + y = 7 \rightarrow y = -2x + 7$

$(4, -1)$

$3(-5y + 3) - 2y = -8$

$-15y + 9 - 2y = -8$

$-17y = -17$

$y = 1$

$x = -5(1) + 3$

$x = -2$

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

$5x + 6x - 21 = 23$

$11x = 44$

$x = 4$

$y = -2x + 7$

$y = -2(4) + 7$

$y = -1$

3) $y = 2x - 10$

$y = -4x + 8$

$(3, -4)$

$-4x + 8 = 2x - 10$

$18 = 6x$

$3 = x$

$y = -4x + 8$

$y = -4(3) + 8$

$y = -12 + 8$

$y = -4$

4) $x - 3y = -22 \rightarrow x = 3y - 22$

$4x + 2y = -4$

$(-4, 6)$

$4(3y - 22) + 2y = -4$

$12y - 88 + 2y = -4$

$14y = 84$

$y = 6$

$x = 3y - 22$

$x = 3(6) - 22$

$x = -4$

Tim has a computer support business. He estimates that the cost to run his business can be represented by $y = 48x + 500$, where x is the number of customers. He also estimates that his income can be represented by $y = 65x - 145$. How many customers will Tim need in order to break even?

(breaking even is when your income equals your profit)

$y = 48x + 500$

x = number of customers

y = cost to run business

$y = 65x - 145$

x = number of customers

y = income

$65x - 145 = 48x + 500$

$645 = 17x$

$37.9 \approx x$

He will need 38 customers in order to break even.

Solving Systems of Equations by Substitution

Solve each system by substitution.

1) $y = 6x - 11$
 $-2x - 3y = -7$

2) $2x - 3y = -1$
 $y = x - 1$

3) $y = -3x + 5$
 $5x - 4y = -3$

4) $-3x - 3y = 3$
 $y = -5x - 17$

5) $y = -2$
 $4x - 3y = 18$

6) $y = 5x - 7$
 $-3x - 2y = -12$

7) $-4x + y = 6$
 $-5x - y = 21$

8) $-7x - 2y = -13$
 $x - 2y = 11$

9) $-5x + y = -2$
 $-3x + 6y = -12$

10) $-5x + y = -3$
 $3x - 8y = 24$

$$\begin{aligned} 11) \quad x + 3y &= 1 \\ -3x - 3y &= -15 \end{aligned}$$

$$\begin{aligned} 12) \quad -3x - 8y &= 20 \\ -5x + y &= 19 \end{aligned}$$

$$\begin{aligned} 13) \quad -3x + 3y &= 4 \\ -x + y &= 3 \end{aligned}$$

$$\begin{aligned} 14) \quad -3x + 3y &= 3 \\ -5x + y &= 13 \end{aligned}$$

$$\begin{aligned} 15) \quad 6x + 6y &= -6 \\ 5x + y &= -13 \end{aligned}$$

$$\begin{aligned} 16) \quad 2x + y &= 20 \\ 6x - 5y &= 12 \end{aligned}$$

$$\begin{aligned} 17) \quad -3x - 4y &= 2 \\ 3x + 3y &= -3 \end{aligned}$$

$$\begin{aligned} 18) \quad -2x + 6y &= 6 \\ -7x + 8y &= -5 \end{aligned}$$

$$\begin{aligned} 19) \quad -5x - 8y &= 17 \\ 2x - 7y &= -17 \end{aligned}$$

$$\begin{aligned} 20) \quad -2x - y &= -9 \\ 5x - 2y &= 18 \end{aligned}$$