Unit 2A: Reasoning with Linear Equations and Inequalities

Name: Algebra 1

Class period: 2019

Notes

Let's consider a, b and c as variables.

Properties of OPERATIONS

1. Commulative property of Addition $a+b=b+a$
2. Commulative property of Multiplication $a \cdot b = b \cdot a$

3. Associative Property of Addition $a+(b+c)=b+(a+c)$
4. Associative Property of Multiplication $a \cdot (b \cdot c) = b \cdot (a \cdot c)$

5. Additive Inverse Property $a+(-a)=0$
6. Multiplicative Inverse Property $a \cdot \frac{1}{a} = 1$

7. Distributive Property $a(b+c) = ab + ac$

Properties of EQUALITIES

1. Reflective Property $a=a$
2. Symmetric Property If $a=b$, then $b=a$.
3. Transitive Property If $a=b$, $b=c$, then $a=c$.

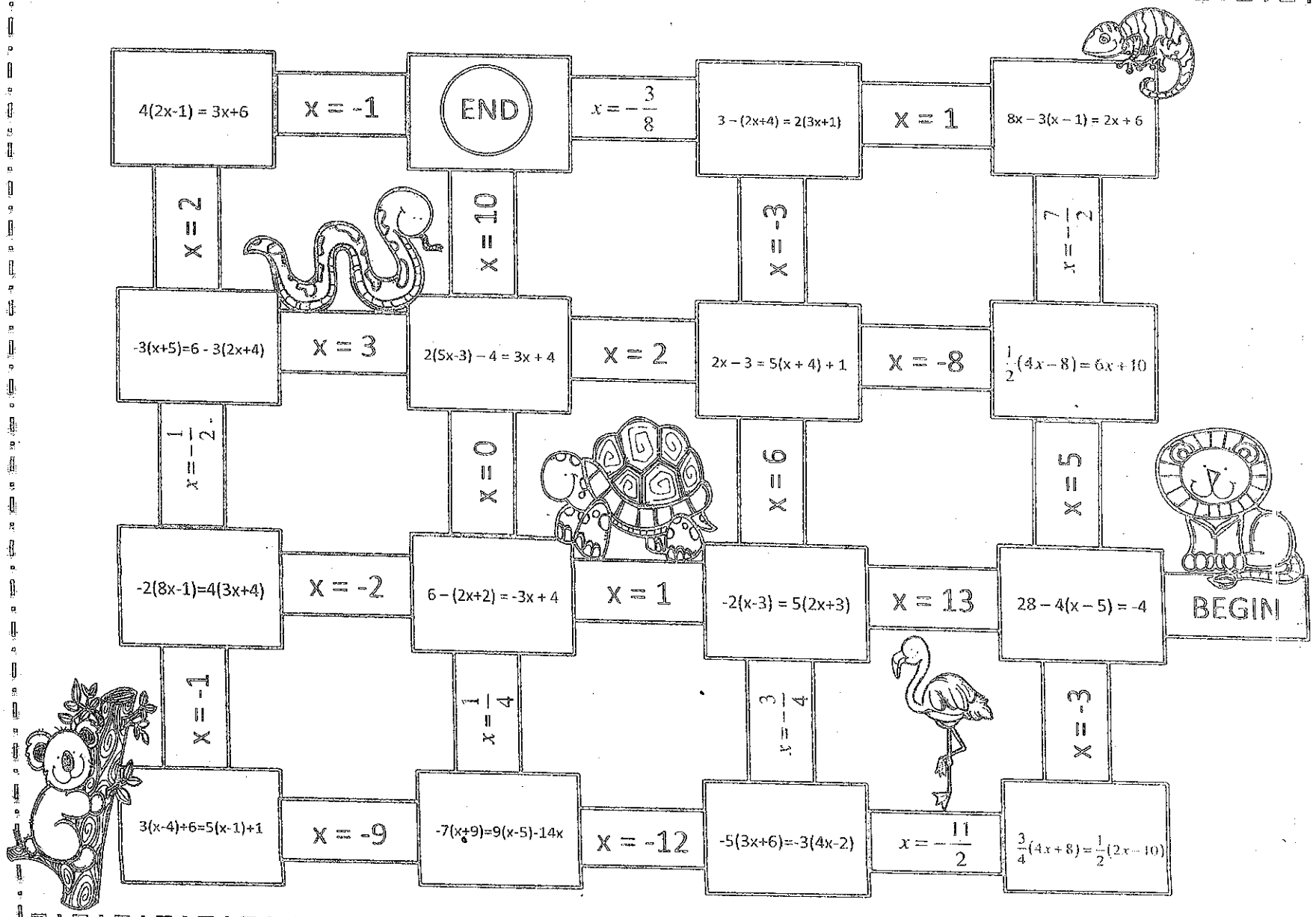
4. Addition Property of Equality If $a=b$, then $a+c=b+c$
5. Subtraction Property of Equality If $a=b$, then $a-c=b-c$.
6. Multiplication Property of Equality If $a=b$, then $a \cdot c = b \cdot c$
7. Division Property of Equality If $a=b$, then $\frac{a}{c} = \frac{b}{c}$.

Special Cases

1) $x+5=10$ 2) $x+6=x-5$ 3) $x+6=x+6$

side 1

2


4(2x-1) = 3x+6
x = -1
END
$x = -\frac{3}{8}$
3 – (2x+4) = 2(3x+1)
x = 1
8x – 3(x – 1) = 2x + 6
x = 2
x = 10
x = -3
$x = \frac{7}{2}$
-3(x+5)=6 - 3(2x+4)
x = 3
2(5x-3) – 4 = 3x + 4
x = 2
2x – 3 = 5(x + 4) + 1
x = -8
$\frac{1}{2}(4x-8) = 6x + 10$
$x = \frac{1}{2}$
x = 0
x = 6
x = 5
-2(8x-1)=4(3x+4)
x = -2
6 – (2x+2) = -3x + 4
x = 1
-2(x-3) = 5(2x+3)
x = 13
28 – 4(x – 5) = -4
BEGIN
x = -1
$x = \frac{1}{4}$
$x = -\frac{3}{4}$
x = -3
3(x-4)+6=5(x-1)+1
x = -9
-7(x+9)=9(x-5)-14x
x = -12
-5(3x+6)=-3(4x-2)
$x = -\frac{11}{2}$
$\frac{3}{4}(4x+8) = \frac{1}{2}(2x-10)$

Literal Equations – Worksheet #2

SHOW ALL WORK!!

Regular Equations

1a) $43 - 2x = 11$

2a) $23 + 4x - 34 = -11$

3a) $3(2x - 7) = 6$

Literal Equations

1b) Solve for x: $3y + 2x = -1$

2b) Solve for k: $3 - 3k + 7k = 5b$

3b) Solve for b: $\frac{1}{2}(4a + 10b) = c$

Formulas can be manipulated through the process of solving literal equations.

4) Solve for h: $A = bh$ (area of a parallelogram)

Literal Equations – Worksheet #2

5) Solve for b: $A = \frac{1}{2}bh$ (Area of a triangle)

6) Solve for r: $C = 2\pi r$ (Circumference of a circle)

7) Solve for w: $P = 2L + 2W$ (Perimeter of a rectangle)

8) Solve for t: $D = rt$ (Linear motion)

9) Solve for C: $F = \frac{9}{5}C + 32$ (Temperature conversions)

For the following problems, write an equation and then SOLVE. Make sure to label the unknown variable.

1. Dustin opens a savings account with $350. He saves $150 per month. Assume that he does not withdraw money or make any additional deposits. After how many months will Dustin have $2,000?

Unknown: _____

Equation: _____

Solution: _____

2. A cell phone plan costs $30 per month for unlimited calling plus $0.15 per text message. If Shayna spent $64.05 this month, how many text messages did she send?

Unknown: _____

Equation: _____

Solution: _____

3. The sum of two consecutive integers is 27. Find the two integers.

Unknown: _____

Equation: _____

Solution: _____

4. The sum of three consecutive integers is 87. Find the three integers.

Unknown: _____

Equation: _____

Solution: _____

5. Savannah has a sweet tooth and ate x cookies last week. Her brother Seth has an even sweeter tooth and ate three times as many as she did. If together they ate 28 cookies, how many did Savannah eat?

Unknown: _____

Equation: _____

Solution: _____

6. Lee bought 4 pork chops for dinner which were on sale for 20% off. If he spent $13.76, how much did each individual pork chop cost before the discount?

Unknown: _____

Equation: _____

Solution: _____

7. There are three exams in a marking period. A student received a grade of 75 and 81 on the first two exams. What grade must the student earn on the last exam to get an average of 80 for the marking period?

Unknown: _____

Equation: _____

Solution: _____

8. A rectangle is 12m longer than it is wide. Its perimeter is 68m. Find its length and width.

Unknown: _____

Equation: _____

Solution: _____

9. Alex has twice as much money as Jennifer. Jennifer has $6 less than Shannon. Together they have $54. How much money does each have?

Unknown: _____

Equation: _____

Solution: _____

10. Meg received 90 votes for Student Council President, which were 50 less than twice the amount that Tom received. How many votes did Tom get?

Unknown: _____

Equation: _____

Solution: _____

Name: _____ Date: _____ Period_____

Solving for Missing Variable Word Problems

One useful formula from science says that distance = rate X time. We usually write $d = rt$ to save space.

1. Use the formula d=rt to answer the following questions by solving for the **specified variable** first. Leslie is driving her old Volkswagen Bug to college and she wants to get there in 3 hours to meet her roommate. If her college is 200 miles from home how **fast** will she have to drive?

Another useful formula tells us how the sides of a triangle relate to the area. We use the formula $A = \frac{1}{2} b \cdot h$.

2. Pamela wants to plant a triangular garden in her backyard and has 45 square feet of soil to use. She wants the base of her garden to line up against the back of her shed which is 10ft long. What will be the **height** of her garden?

3. Howard is laying triangular tiles in his bathroom the area of each tiles is 6 square inches and the height is 4 inches. What is the **length** of the base of each tile?

Physicists use the formula to the right to calculate the acceleration of an object. *Note:* v_f stands for the final speed of the object, and v_i stands for the initial or starting speed of the object.

$$a = \frac{v_f - v_i}{t}$$

4. What is Heidi's **final velocity** if she accelerates at 2 feet per second squared for 3 seconds with an initial velocity of 4 feet per second?

The formula for computing the balance of an account with compound interest added annually is $A = P(1+r)$ where A represents the amount of money in the account including interest, P is the amount in the account before interest and r is the interest rate written as a decimal

5. If Holly wants a total of $1000 in the bank in a year and has an interest rate of 4% how much money should she put it the bank **initially?**

Practice Problems

Rewrite each equation in terms of the indicated (Letter).

1) $P = IRT$ *(I)*

2) $P = 2(L + W)$ *(W)*

3) $y = 5x - 6$ *(x)*

4) $2x - 3y = 8$ *(y)*

5) $\frac{x + y}{3} = 5$ *(x)*

6) $y = mx + b$ *(b)*

7) $ax + by = c$ *(y)*

8) $A = (\frac{1}{2})h(b + c)$ *(b)*

9) $V = LWH$ *(L)*

10) $A = 4\pi r^2$ *(r^2)*

Intro to Linear Functions
Algebra I

Name: _____

Linear Functions Vocabulary

1. **Linear Function**: An _____ that makes a _____ line when it is graphed.

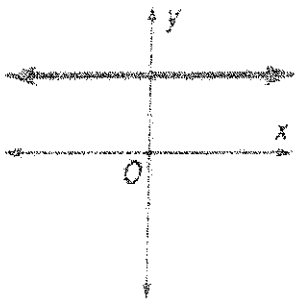
2. **Y – intercept**: Where a straight line _____ the _____ axis.

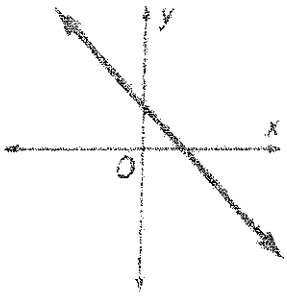
3. **Slope**: Describes the _____ of a straight line. It can also be called _____, or _____.

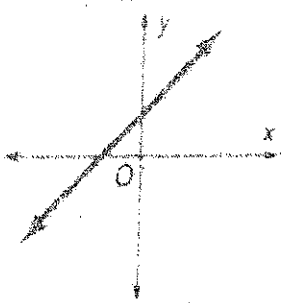
Equations of Linear Functions

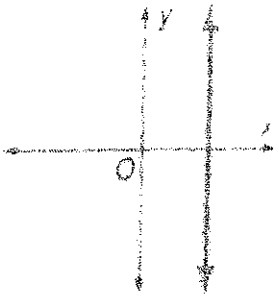
Standard Form	Slope Intercept Form	Point-Slope Form

$$y=mx+b$$









_____ _____ _____ _____

Determining Slope:

Graphically:

Count the rise
Over the run.

$$\frac{\text{rise}}{\text{run}}$$

Algebraically:

(x_1, y_1) and (x_2, y_2)

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Determine the slope for each function.

1) $(-1, 6), (-7, -3)$

2) $(2, 0), (16, 6)$

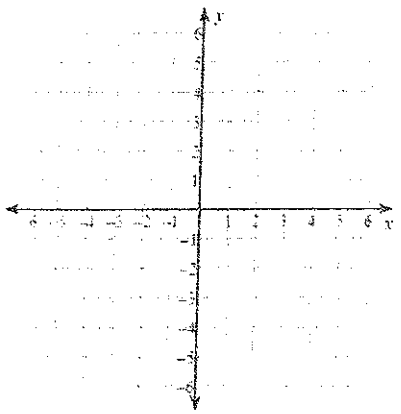
Given the slope (m) and y-intercept (b) write the equation of the line in slope intercept form.

1.) m = 2, b = 3

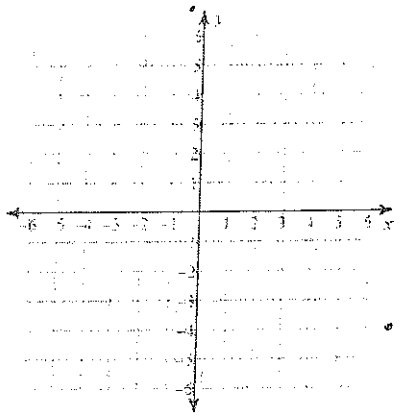
2.) m = -1/3, b = -6

3.) The line goes through (0, 3) and has a slope of -4

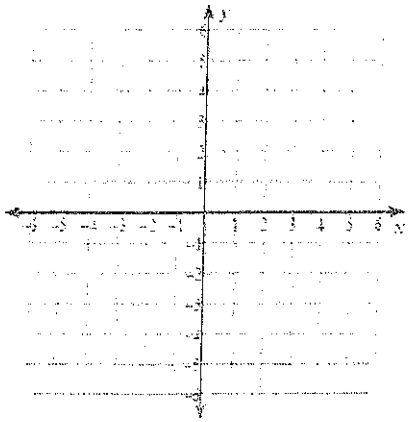
1) $y = 2x - 1$



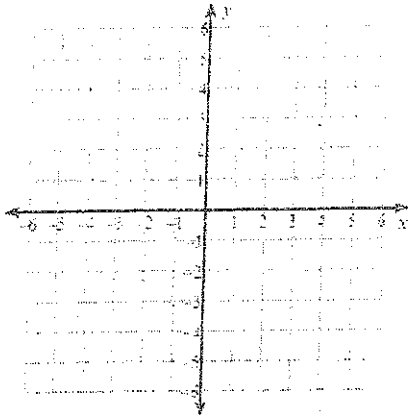
2) $y = -\frac{1}{4}x - 4$



3) $x = -3$



4) $y = -2$



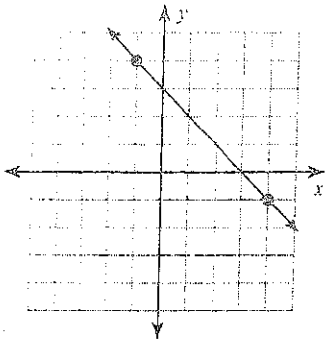
Algebra 1 Name_____ ID: 1

Linear Functions Homework

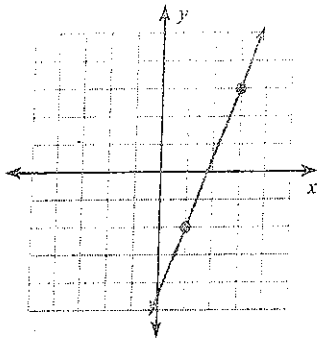
Date_____ Period____

Find the slope of each line.

1)



2)



Find the slope of the line through each pair of points.

3) $(18, -4), (13, 3)$

4) $(9, -17), (18, -2)$

5) $(10, 8), (19, -16)$

6) $(11, -20), (3, -2)$

Find the slope of each line.

7) $y = -\frac{7}{5}x + 4$

8) $y = -1$

Write the slope-intercept form of the equation of each line given the slope and y-intercept.

9) Slope = 4, y-intercept = –3

10) Slope = 10, y-intercept = 5

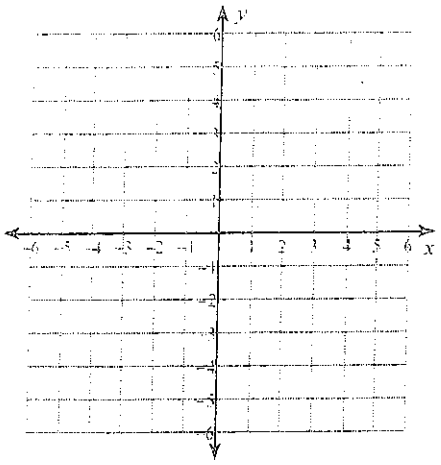
Write the slope-intercept form of the equation of each line. (HINT: Rearrange and solve for y)

11) $5x - 2y = -10$

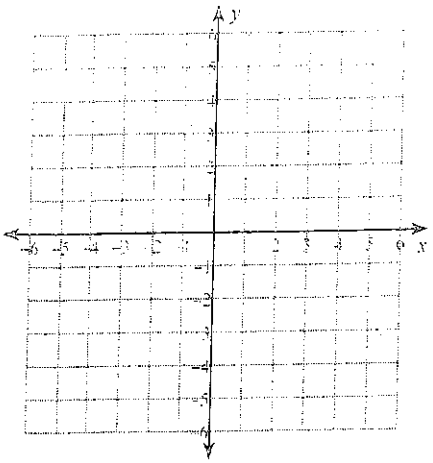
12) $2x - y = -7$

Sketch the graph of each line.

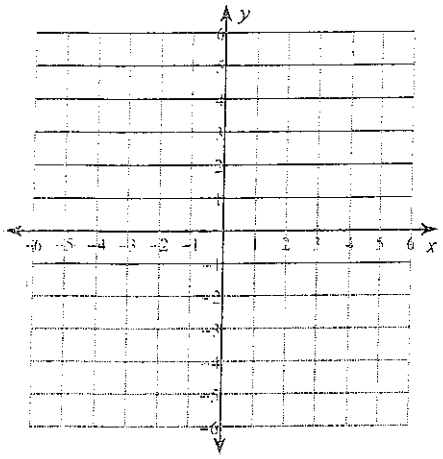
13) $y = -\frac{3}{2}x - 4$



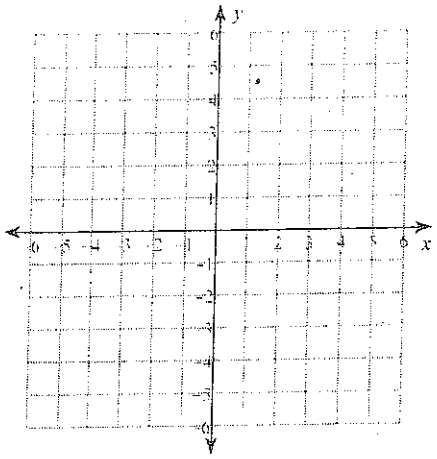
14) $y = \frac{4}{3}x + 1$



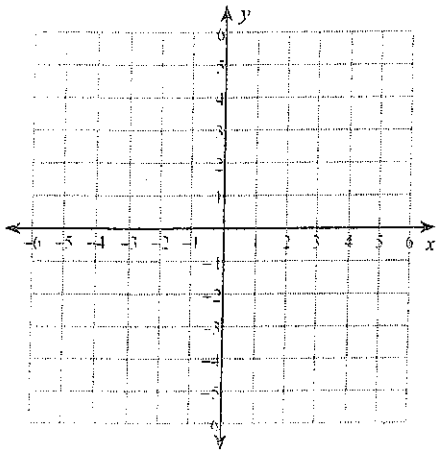
15) $y = x + 3$



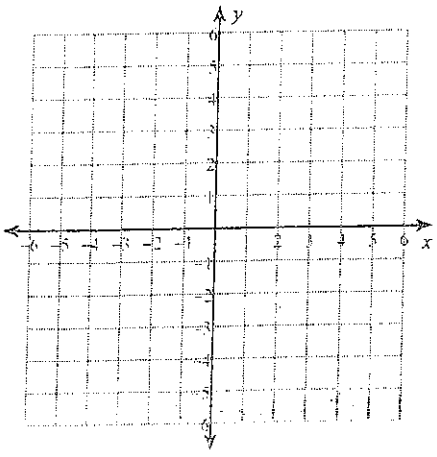
16) $y = -\frac{7}{4}x + 3$



17) $y = 2$



18) $y = -x$



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Linear Functions Notes

Properties of Slope:

Parallel Slopes:	Perpendicular Slopes:
_____ _____	_____
	_____

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

$$y - y_1 = m(x - x_1)$$

Give an equation in point-slope form that satisfies the given information.

1. Passes through (2, 3) and has slope of $-\frac{1}{2}$.

2. Passes through (-1, 4) and m = 4.

3. Passes through (0, 2) and has slope of -5/3.

4. Passes through (4, -2) and m = 0.

Give the slope of each of the following lines. Name a point on each line.

7. $y + 2 = 2/3\,(x - 4)$

8. $y - 3 = \frac{1}{2}\,(x - 3)$

13. $y + 2 = 1/3\,(x + 1)$
Point _____ Slope _____

14. $y + 1 = -\frac{1}{2}\,(x - 3)$
Point _____ Slope _____

Algebra 1 Name_____ ID: 1

Assignment Graphing Day 2 Date_____ Period____

Determine the slope of the lines Parallel and Perpendicular to the following functions.

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

2) $y = -x - 1$

3) $y = x + 2$

4) $y = 2x + 3$

Write the point slope form of the equation of the line through the given point with the given slope.

5) through: $(3, -3)$, slope $= -\frac{1}{2}$

6) through: $(4, 5)$, slope = 1

7) through: $(5, -4)$, slope $= -\frac{8}{5}$

8) through: $(-5, 4)$, slope $= -\frac{3}{5}$

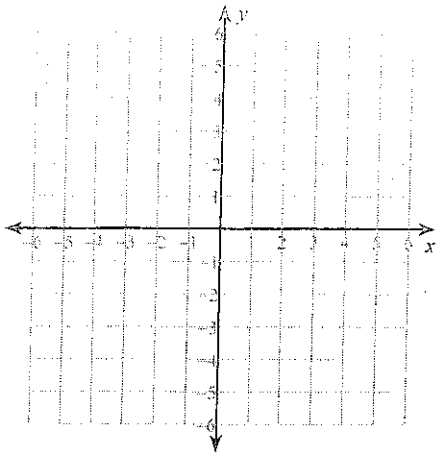
Determine a point and the slope of the following linear functions.

9) $y + 1 = -\frac{3}{4}(x + 4)$

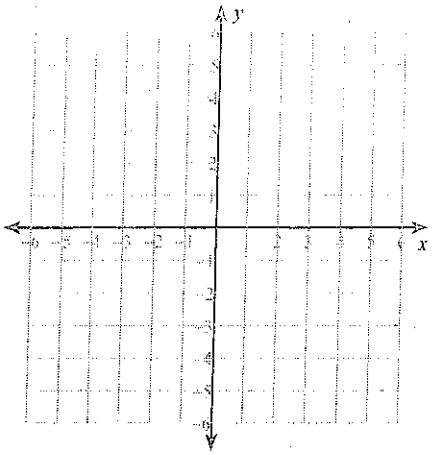
10) $y + 5 = -\frac{3}{4}(x - 4)$

Sketch the graph of each line.

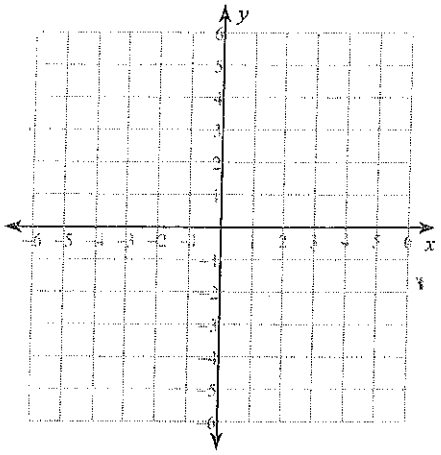
11) $y = 3x - 4$



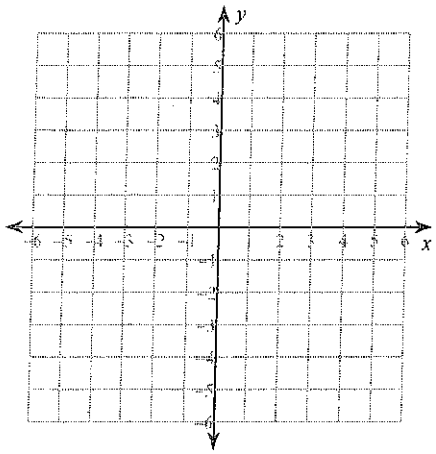
12) $y = -3$



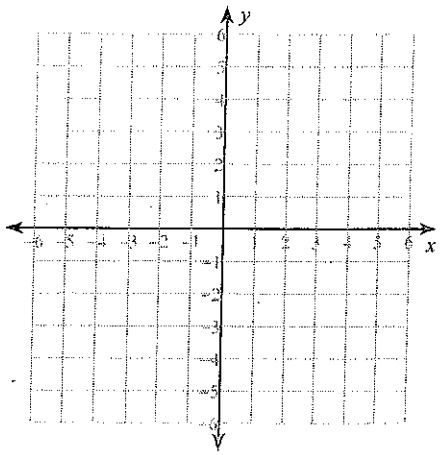
13) $y = \frac{3}{2}x + 4$



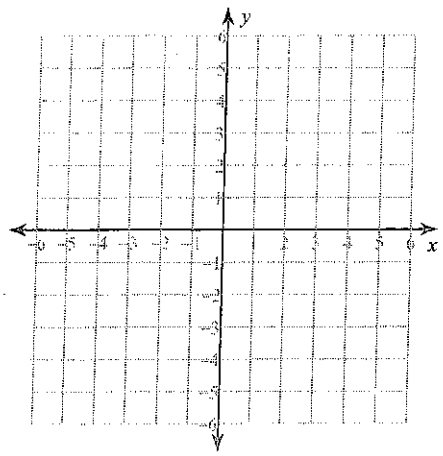
14) $y = -x + 2$



15) $x - y = 2$



16) $4x + 5y = 20$



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Graphing Systems of Equations - In Class Notes

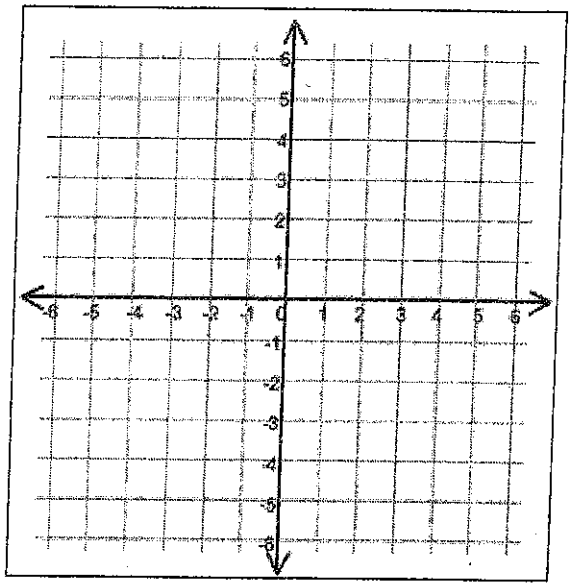
System of Equations - A set of two or more _____ that contain two or more _____.

Solution to a System of Equations - A set of values that make all equations in a system true.

Solve Each System by Graphing and Check Your Answer

y= 2/3x-4

y= -1/2x+3



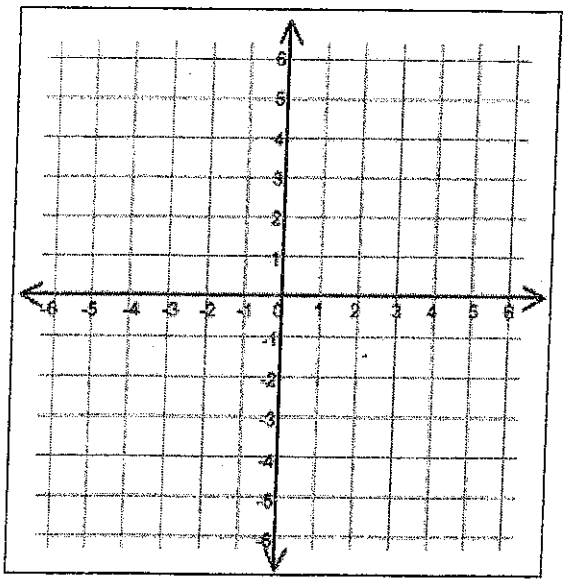
Check Your Answer

y= 2/3x-4 y= -1/2x+3

Solution = _____

y= 1/2x-1

y= x-3



Check Your Answer

y= 1/2x-1 y= x-3

Solution = _____

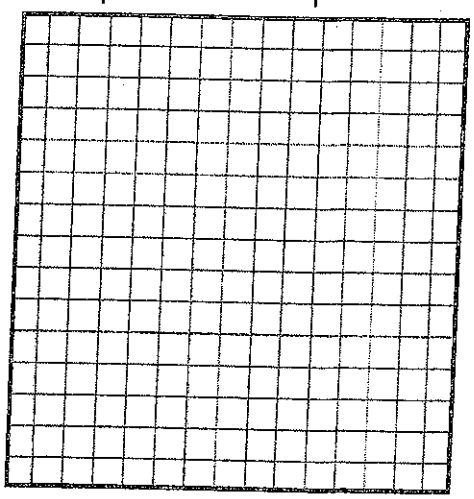
Graphing Systems of Equations - In Class Notes

Sarah and Josh are selling tickets to the school play. On the first day of selling Sarah sold 5 tickets and Josh sold no tickets. Each day after that Sarah sold 2 tickets and Josh sold 3 tickets. At how many days will they have sold the same amount of tickets?

_____ Days

Write Your Equations

Graph Your Equations



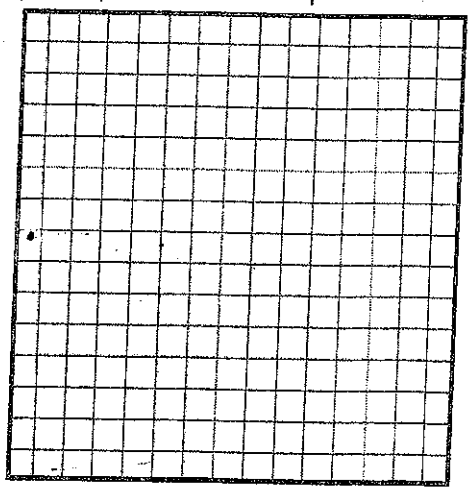
Check Your Answer

"The Place To Be Bowling" Bowling alley charges a $2 shoe rental fee and $3 per game.
"Bowling B' The Best" Bowling alley charges a $4 shoe rental fee and $2 per game.
For how many games will it cost the same to bowl at either alley?

_____ Games

Write Your Equations

Graph Your Equations



Check Your Answer

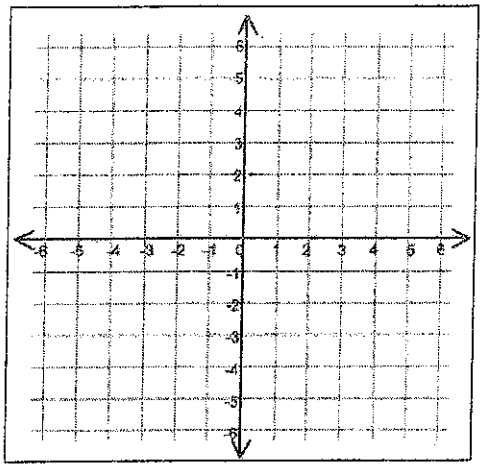
Graphing Systems of Equations - Homework

Name_____ Date_____ Score_____

Solve Each System by Graphing and Check Your Answer

$y = 3x-4$

$y = x+2$



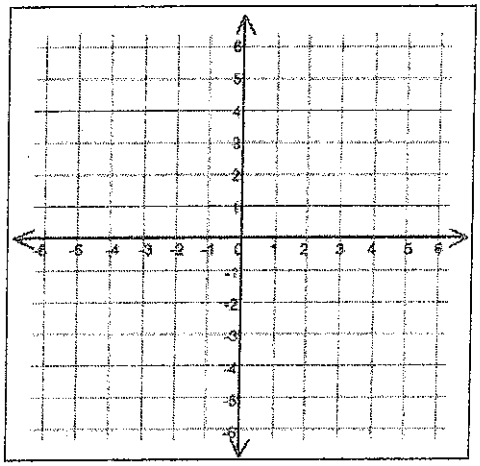
Check Your Answer

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

Solution = _____

$y = -x+2$

$y = -4x-1$



Check Your Answer

$y = -x+2$ $y = -4x-1$

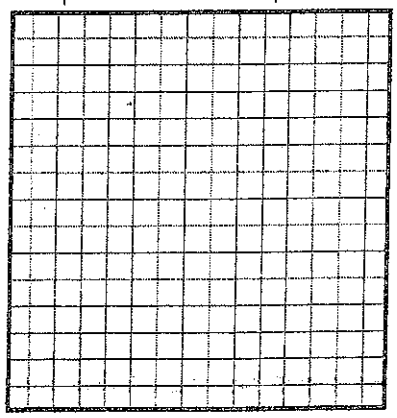
Solution = _____

Eric has already ran 5 miles and is continuing to run at a pace of 1 mile per hour. Jess has only run 2 miles and is continuing to run at a pace of 2 miles per hour. In how many hours will they have ran the same number of miles?

_____ Hours

Write Your Equations

Graph Your Equations



Check Your Answer

Algebra I: Solving Systems of Equations
Notes: Elimination Method

Name:_____

Goal: Add or subtract our equations in order to _____ a variable.

- Make sure to write equations vertically (stacked) in **standard form.**

To solve by Elimination:

Step 1	Choose a variable to eliminate (X or Y).
Step 2	Eliminate that variable by adding or subtracting one equation from another. (sometimes you have to multiply first)
Step 3	Solve the new equation.
Step 4	Plug in your answer to find the other variable.
Step 5	Check your answer.

- Three types of solutions: 1 solution, no solution, infinite solutions.
  What might those look like???

Consider the systems below:

1) $2x - 10y = 22$
   $-2x - 3y = 30$

2) $6x + 2y = 2$
   $9x - 2y = 28$

3) $4x + 3y = 17$
   $4x + 9y = 11$

4) $10x + 8y = -24$
   $-2x + 8y = 24$

5) $9x + 3y = -6$
$18x - y = 2$

6) $4x + 7y = -15$
$-8x - 14y = 10$

7) $-2x - 4y = -8$
$7x + 3y = 28$

8) $-3x - 4y = -26$
$-2x + 3y = 11$

9) $14x - 10y = -24$
$7x + 8y = 1$

10) $3x - 8y = 14$
$4x - 7y = 4$

Warm Up: Solve each system by elimination.

1) $-6x + 6y = -18$
$4x + 10y = -30$

2) $-9x - 3y = -9$
$2x - 5y = -15$

Solving System Word Problems:

1. Read each problem carefully
2. Define _____.
3. Write _____ equations.
4. Solve by _____.
5. Check by plugging in!

1) Yellowstone National Park is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 10 vans and 8 buses with 516 students. High School B rented and filled 2 vans and 8 buses with 404 students. Every van had the same number of students in it as did the buses. How many students can a van carry? How many students can a bus carry?

2) The school that Heather goes to is selling tickets to a choral performance. On the first day of ticket sales the school sold 3 senior citizen tickets and 7 student tickets for a total of $81. The school took in $147 on the second day by selling 14 senior citizen tickets and 7 student tickets. What is the price each of one senior citizen ticket and one student ticket?

3) Matt and Kayla are selling cookie dough for a school fundraiser. Customers can buy packages of white chocolate chip cookie dough and packages of oatmeal cookie dough. Matt sold 2 packages of white chocolate chip cookie dough and 10 packages of oatmeal cookie dough for a total of $198. Kayla sold 11 packages of white chocolate chip cookie dough and 10 packages of oatmeal cookie dough for a total of $279. What is the cost each of one package of white chocolate chip cookie dough and one package of oatmeal cookie dough?

4) The senior classes at High School A and High School B planned separate trips to New York City. The senior class at High School A rented and filled 10 vans and 12 buses with 528 students. High School B rented and filled 9 vans and 6 buses with 288 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?

5) Mary and Heather each improved their yards by planting rose bushes and ivy. They bought their supplies from the same store. Mary spent $140 on 7 rose bushes and 14 pots of ivy. Heather spent $60 on 11 rose bushes and 2 pots of ivy. Find the cost of one rose bush and the cost of one pot of ivy.

Solving and Graphing Inequalities Notes

Name:_____

Inequality Symbols

<	>	≤	≥

Write in symbols.

The most it will cost is $30.

You can have at least 3 of my Skittles.

Your quiz score is 92%.

Your age is less than 19 years.

Equations v. Inequalities?

$-2 = n - 4$ $-2 > n - 4$

***Special Rules to Remember:**

X or ÷ by a negative? $-2x > 8$

Solve and describe in words.

$2y - 5 < 7$ $-4.2m > 6.3$

Solve.

$\frac{a}{3} \leq 12$ $-5x - 3 > 12$ $x + 5 \geq 3$

Graphing Inequalities

There are three pieces to graphing:

1. Number Line ←+++++++→
2. Dot

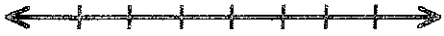
Sign	Dot
< and >	
≤ and ≥	

3. Shading ——————O

Graph.

$x > -2$

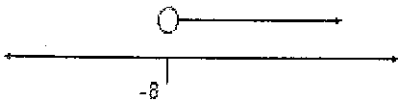
$x \leq 1$

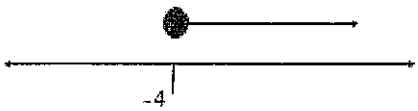


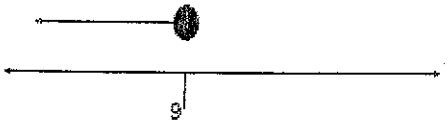
$-x - 11 \geq 23$

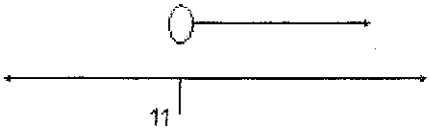
$-6 + 5x < 19$

Do you think you can write the inequality from the graph?



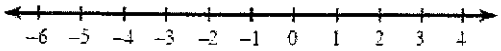




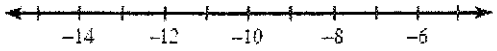


Practice:

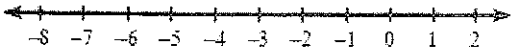
1) $-10(n + 8) \leq -40$



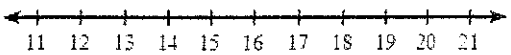
2) $7 + \frac{r}{10} \geq 6$



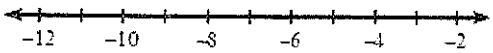
3) $-3 \leq -9b - 3$



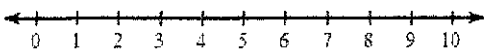
4) $-7 + 2r > 29$



5) $7(-3x + 7) < 154$



6) $6(4x + 1) \leq 150$

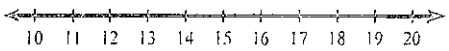


Algebra 1 Name_____ ID: 1

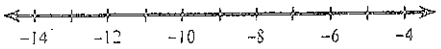
Assignment Date_____ Period____

Solve each inequality and graph its solution.

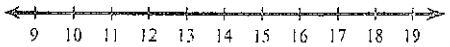
1) $\frac{x+8}{24} > 1$



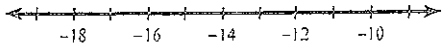
2) $70 \geq -9x + 7$



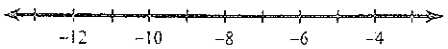
3) $-44 > 8 - 4p$



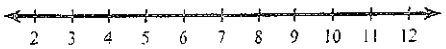
4) $\frac{x}{8} - 8 \geq -10$



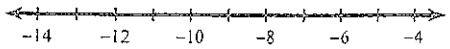
5) $-6(1 + 3m) > 120$



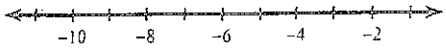
6) $186 \leq 6(3v + 7)$



7) $-5(-5 + 3v) > 130$

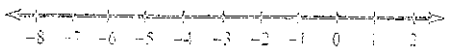


8) $-81 < 3(3m - 3)$



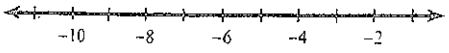
24

9) $-6(7-5a) < -222$

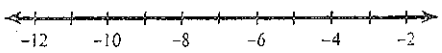


10) $3(-7x+3) > 114$

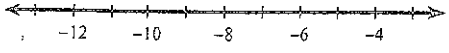
11) $118 < -8(x-6) - 6x$



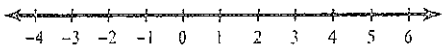
12) $-5(4v-8)+4 < 204$



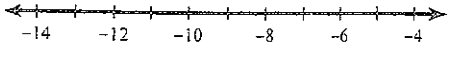
13) $200 \geq -5(7x-5)$



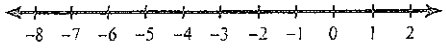
14) $-88 > -8(1-5x)$



15) $434 > 7(-1-8n) - 7n$



16) $-7(1+7n) < 287$



Algebra I
Graphing Linear Inequalities

Name:_____

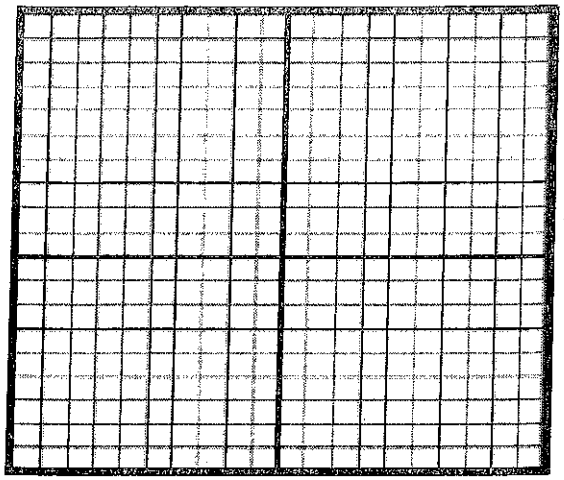
Step 1: Determine whether your line will be dashed or solid?
< or > means "dashed"
≤ or ≥ means "solid"

Step 2: Graph the line using y = mx + b

Step 3: Shade either above or below the dashed/solid line.
When equation is in y = mx + b form:
> or ≥ means above
< or ≤ means below

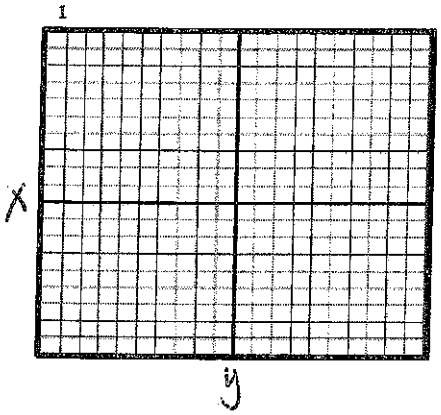
Step 4: Test a point to make sure you shaded the correct direction.

$y < -2x + 4$

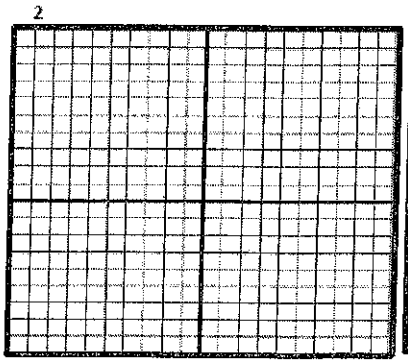


Graph the following inequalities.

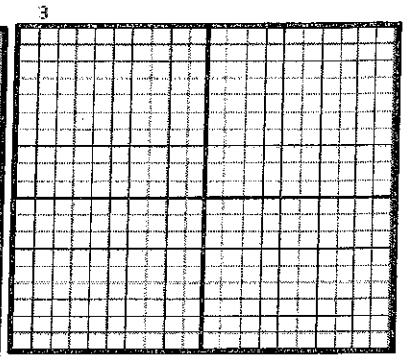
1) $y \leq -\frac{3}{5}x - 4$



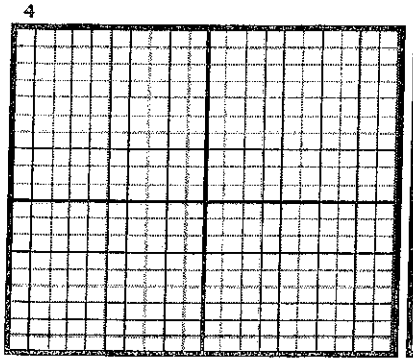
2) $y \geq 4x + 5$



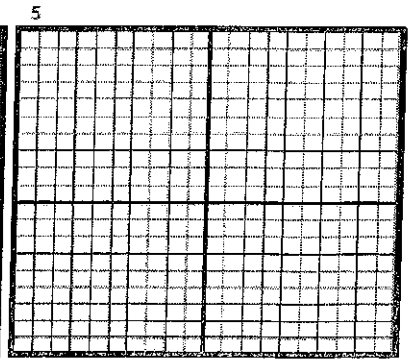
3) $y \leq \frac{7}{3}x + 3$



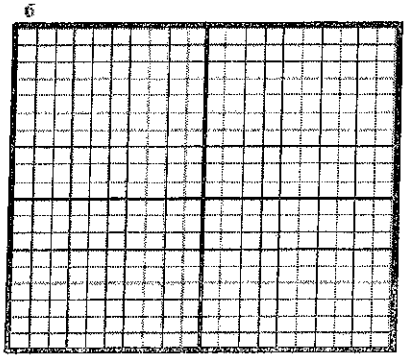
4) $y \geq 3x + 4$



5) $x - 5y < -15$



$5x + 4y > 4$



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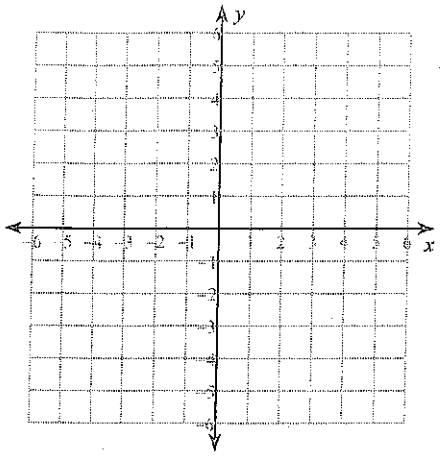
Algebra 1 Name _____ ID: 1

Graphing Inequalities Homework

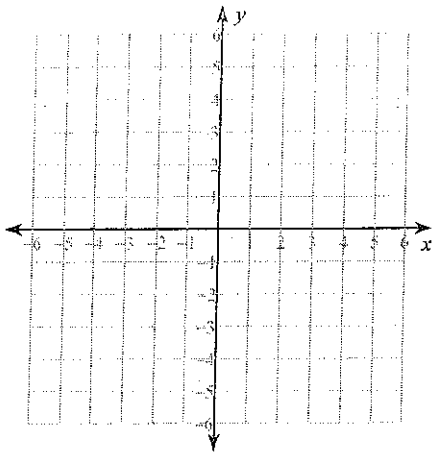
Date _____ Period ____

Sketch the graph of each linear inequality.

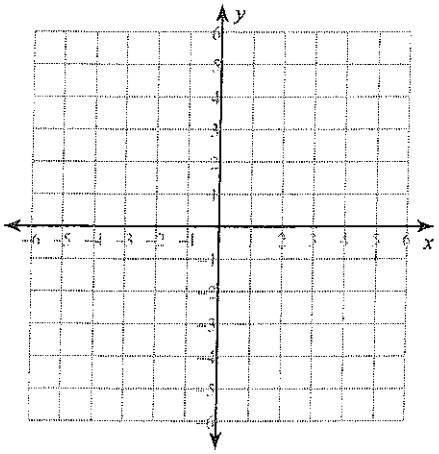
1) $y > -4x + 3$



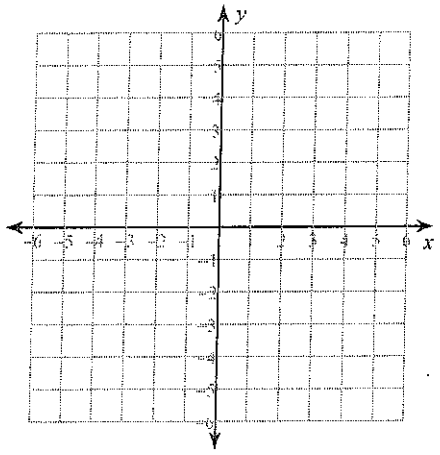
2) $y > \frac{1}{5}x - 1$



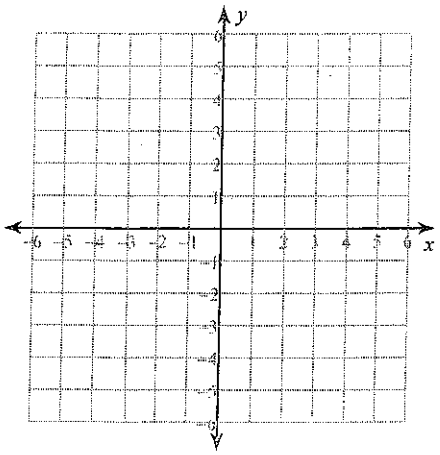
3) $y \leq 3x - 5$



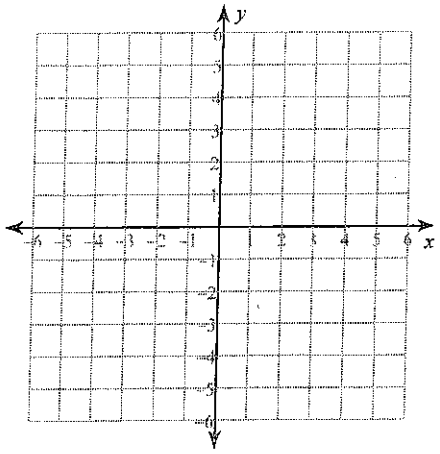
4) $y > 3x + 2$



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



6) $y \leq \frac{7}{5}x + 4$



Algebra I
Graphing Systems of Inequalities

Name:_____

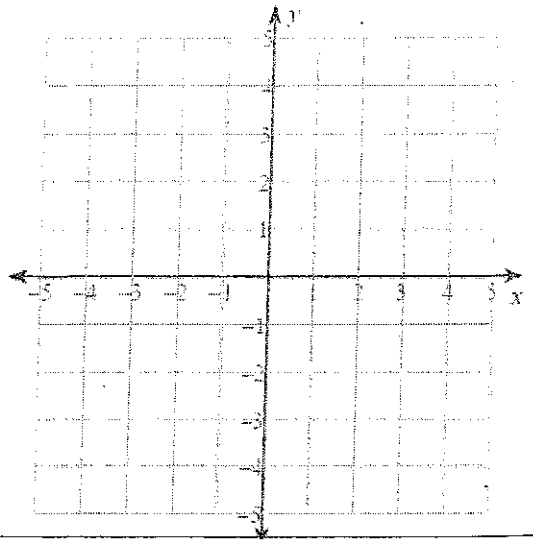
Step 1: Graph each inequality (Remember shading and dashed/solid lines).

Step 2: Find the intersection of the shaded region (Where the graphs overlap).

*Any point _____the shaded region is a _____ to the inequality.

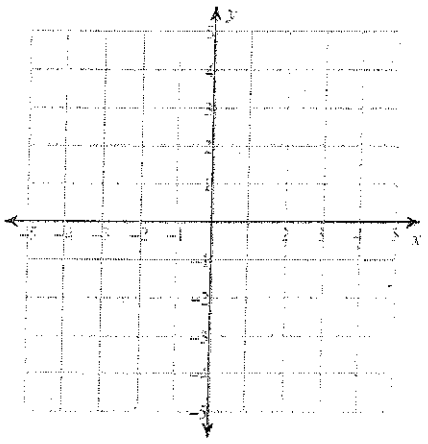
$y < -\frac{1}{2}x - 2$

$y \leq x + 1$



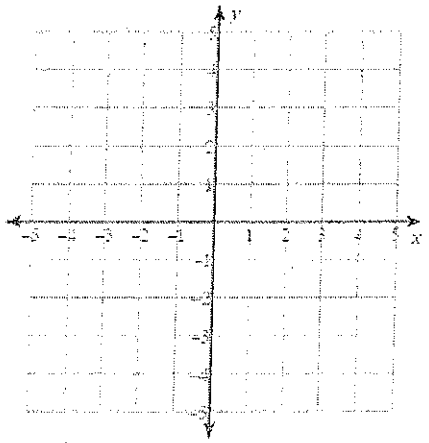
1) $y \geq 2x + 1$

$y < \frac{1}{2}x - 2$



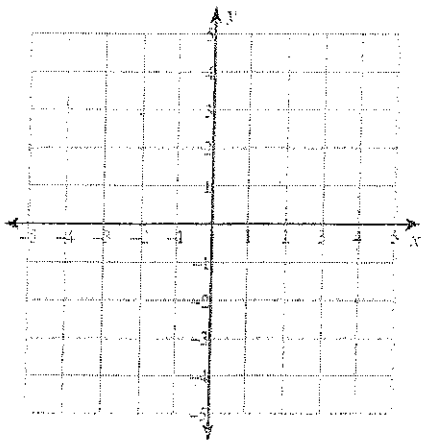
2) $y \geq -x - 2$

$y < 2x + 1$



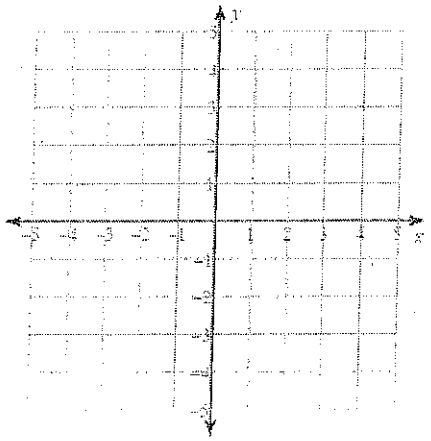
3) $y > -x + 1$

$y \geq -x - 3$



4) $y \geq \frac{2}{3}x + 1$

$y < 2x - 3$



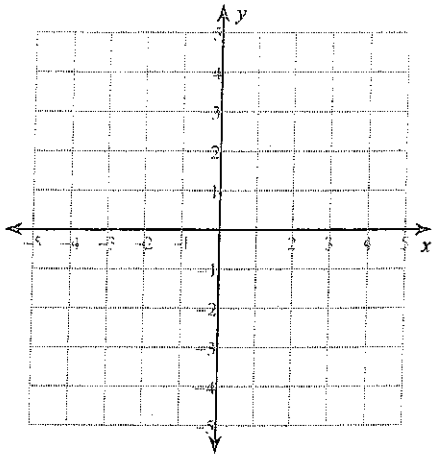
Algebra 1 Name_____ ID: 1

Graphing Inequalities Homework

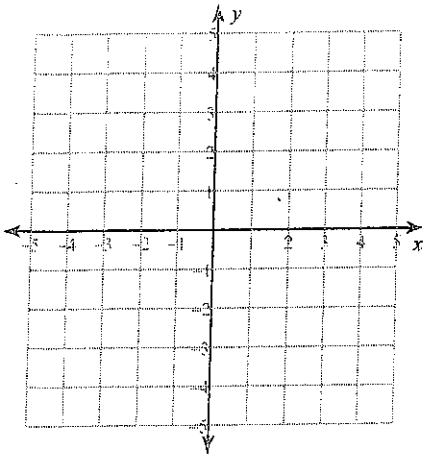
Date_____ Period____

Sketch the solution to each system of inequalities.

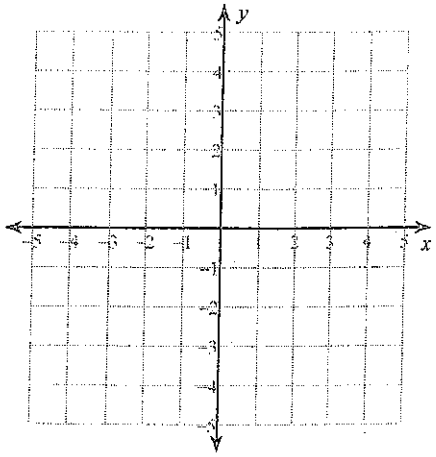
1) $y \leq 2x + 3$
$y \geq -2x - 1$



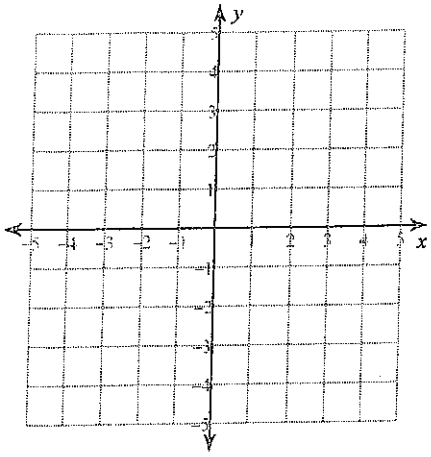
2) $y > -6x + 3$
$y \geq -3$



3) $y > -2x - 3$
$y \leq 3x + 2$

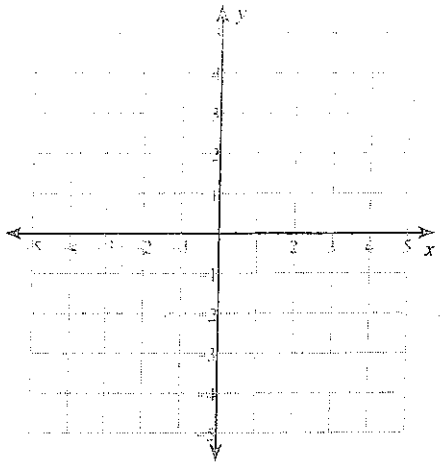


4) $y > \frac{1}{2}x + 1$
$y > -\frac{1}{2}x + 3$

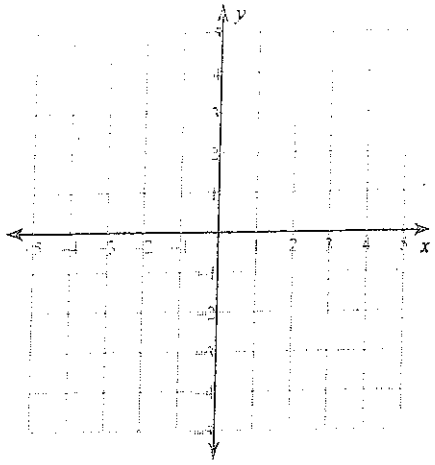


29

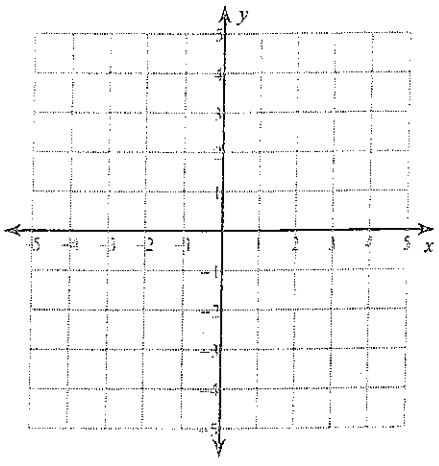
5) $y < 2x - 1$
$y \leq -x + 2$



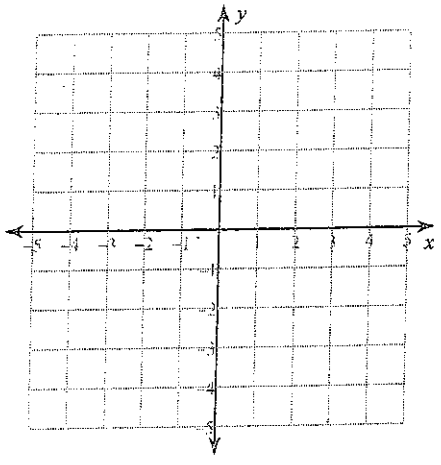
6) $y \geq \frac{3}{2}x + 2$
$y < -x - 3$



7) $y \leq 2x - 1$
$y \geq -2x + 3$



8) $y > \frac{1}{2}x + 1$
$y \geq \frac{3}{2}x - 1$



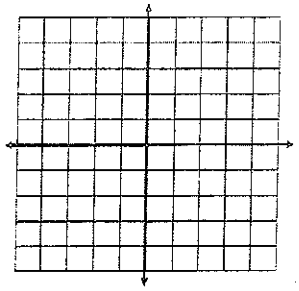
Algebra 1

Solving Systems of Inequalities in Context

Name _____

Date _____

Graph the system and name three points that would be considered <u>solutions</u> .



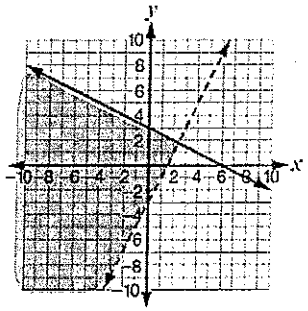
$y > -3x + 1$

$3x - 2y \leq 4$

3 possible answers _____ _____ _____

Definitely NOT answers _____ _____ _____

Tiffany's solution to a system of inequalities is shown below.
Can you write the two inequalities that she would have graphed to come up with this answer?



y _____

y _____

Examples of Systems of Linear Inequalities in Context

Frosty wants to purchase Christmas gifts for all his new friends. He has found an online deal to buy ornaments (x) for $8 each and stockings (y) for $10 each. He only has $100 to spend. Write an inequality to represent the number of items he could purchase.

_____

While he would like to purchase gifts for ALL his new friends, there are 6 kids that are his favorites for which he feels he MUST give gifts. Write an inequality for how many of each item he MUST buy. _____

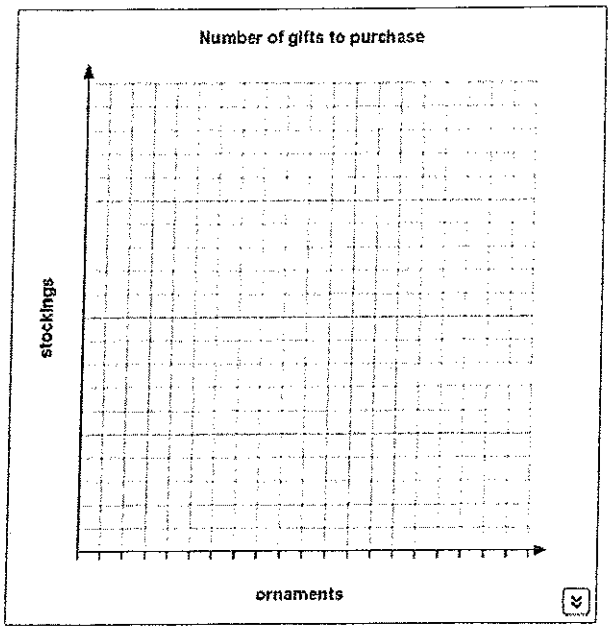
Write this system of inequalities in graphing form:

y _____

y _____

Why should this system ONLY be graphed in the first quadrant? Graph it.

Would it be possible for Frosty to purchase 5 of each item? Justify your answer.



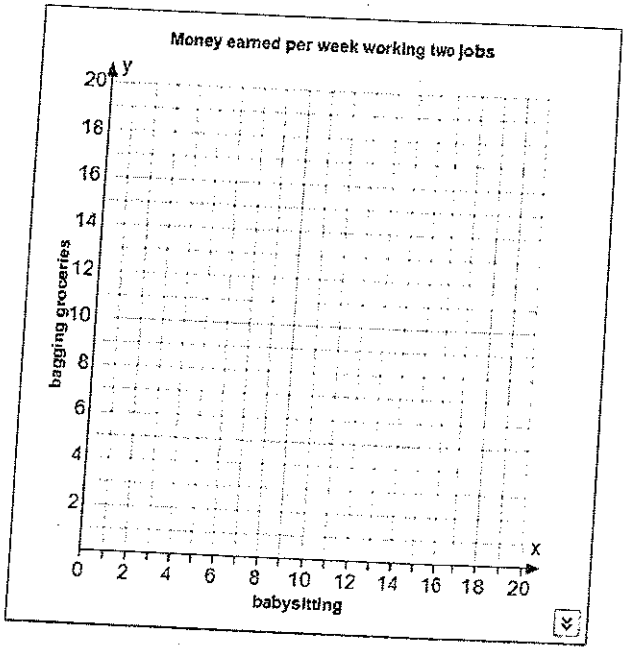
Suppose you have two jobs, babysitting, which pays $5 per hour, and bagging groceries, which pays $6 per hour. You can work no more than 20 hours each week, but you need to earn at least $90 per week. How many hours can you work at each job?

Let x = the number of hours babysitting
Let y = the number of hours bagging groceries
Write a system of inequalities to represent the situation. _____

Place each inequality in graphing form and graph.

y _____

y _____



How many hours can you work at each job?
(Give at least two possible solutions and explain.)

Ordered pair: _____
Explanation: _____

Ordered pair: _____
Explanation: _____

Jason is buying wings and hot dogs for a party. One package of wings costs $7. Hot dogs cost $4 per pound. He must spend less than $40. Write an inequality to represent the cost of Jason's food for the party.
Let x=# of packages of wings and y=# of pounds of hot dogs

_____

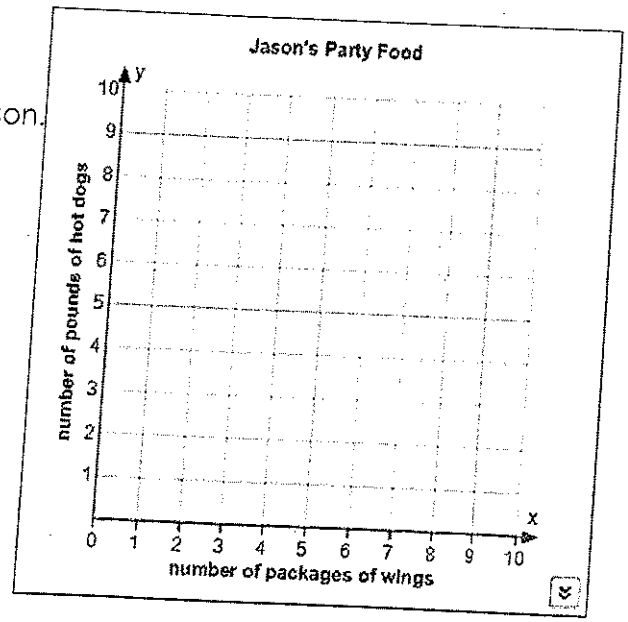
Jason knows that he will be buying at least 5 pounds of hot dogs. Write an inequality to represent this situation.

_____

Graph the system and give two possible solutions for Jason.

y _____

y _____



Solutions:

Ordered pair: _____
Explanation: _____

Ordered pair: _____
Explanation: _____