Name: _____ Score: _____ out of 100

Folder Check Algebra : Final Review

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Name on all pages. _____

Pages 1-2 Notes Unit 1 _____

Pages 3-4 Worksheet Unit 1 _____

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Worksheet Policy

-0 All Questions Done

-1 More than Half Done

-2 Only Groupwork Q's

-3 Less than Half Done

-4 Blank/Absent

Notes Policy

-0 All boxes filled

-1 One Empty Box

-2 Two Empty Boxes

-3 Less than Half Done

-4 Blank/Absent

Games 1 ___   Games 4 ___
Games 2 ___   Games 5 ___
Games 3 ___

Name: _____

Activator and Video	**New Vocabulary (1 of 4)**
New Vocabulary (2 of 4)	**New Vocabulary (3 of 4)**

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper

1 – 2 –
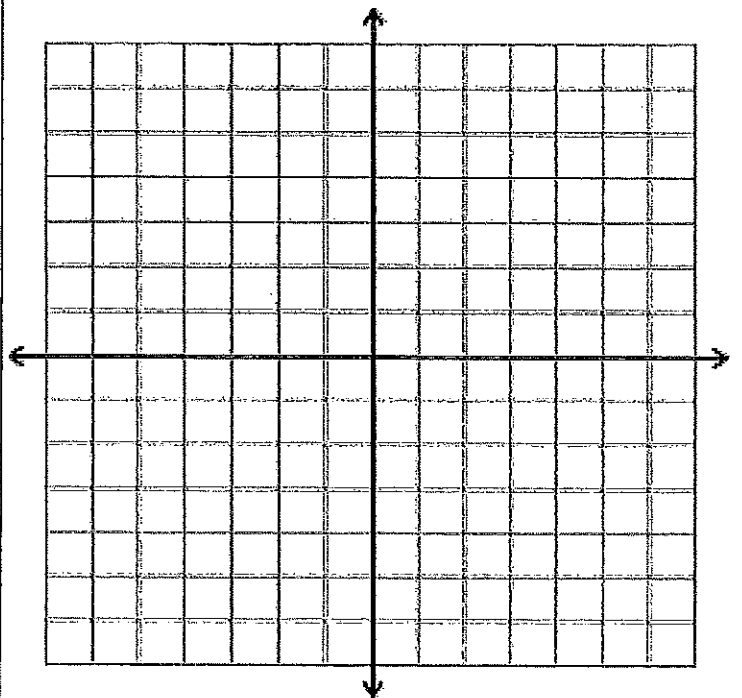
Name: _____

Study Guide

PART I QUESTIONS: Answer all questions in this part. **Make sure you show all of your work.**

1. Which of the following is equivalent to $4(6x + 7)$

2. Which of the following is the value of the expression $\dfrac{-3+x}{4}$ when $x = -9$

3. If the expression $2 + 5x$ is equal to 42 for some value of x. Does $x = 8$?

4. Is binomial $-7 + 2x$, equivalent $2x - 7$?

5. Fill in the blank $3x + x + \underline{\quad} = 9x$

6. The sum of $6-x$ and $4x-1$ is

7. Which of the following equations illustrates the distributive property and commutative property?

$$-2(x) = -2x \qquad\qquad -2 + x = x - 2$$

8. Which of the following is $3(-6x)$

9. The expression $2(x) + 5x + 3$ is equivalent to each of the following

10. When written in simplest form the expression $4(-6x + 7) + 3(8 - x)$

$$- \;\; 3B \;\; -$$

Name: _____ $\boxed{1B}$

PART II QUESTIONS: Answer all questions in this part. **Make sure you show all of your work.**

11. Find the Sum of $-2x$ with $8x$ in simplest form.

12. If n represents a number, simplify the expression. $-4(n-5)$

13. Which of the following is equivalent to the expression $\dfrac{8+x}{2}$ when $x = -4$

PART III QUESTIONS: Answer all questions in this part. **Make sure you show all of your work.**

14. Which of the following properties justifies the equivalence: Define the answer.

$$3 + n = n + 3 \qquad \text{and} \qquad 6(x) = 6 \cdot x$$

If
15. $4x - 7 = -5$ for some value of x, is it true when $x = -3$? Show substitution.

___ , x does ___ equal -3

b/c the last equation is

___ 4A ___ Not ___ .

16. Of the following, which are equivalent?

$$7 - n = n - 7 \quad \text{OR} \quad 3(x + 4) = 3x + 12$$

17. Combine like teRms foR the expression $\quad -3x - 5x + 7$

PART IV QUESTION: Answer the question in this part **. Show your work.**

18. What is following step to simplify the expression?

Expression $\quad -3(4x - 1) + 7(5x - 2)$

Step #1 $\quad -12x + 3 + 35x - 14$

19. Simplify the problem above.

— 4B —

Name: _____ Unit # __2__ Lesson # __Review__

Activator and Video

New Vocabulary (1 of 4)

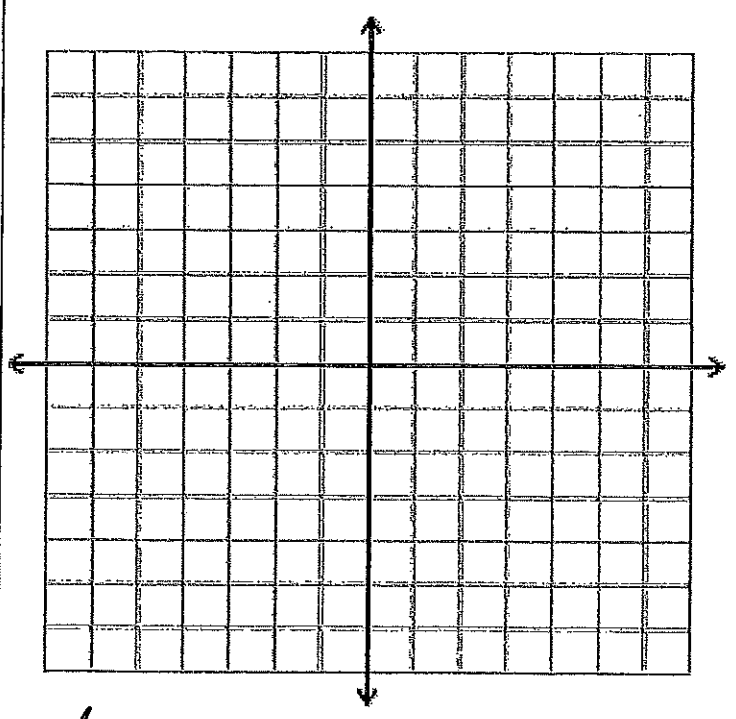**New Vocabulary (2 of 4)**

New Vocabulary (3 of 4)

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper

Name: _____

UNIT #2 Study Guide
Algebra 1

$$2A$$

PART I QUESTIONS: Answer all questions in this part by writing the choice of the appropriate answer in the blank beside the problem. Please show all of your work.

1. Which of the following values of x is a solution to the equation $4(x-3) + 8 = 68$

2. Solve the two step equation $\dfrac{x}{-4} + 5 = -7$

3. Write yes/no for the inequalities when $x = -2$.
$$x < -4 \quad \text{or} \quad x > -4$$

4. Two times the sum of a number, n, and 4 is at Most 20 Which of the following inequalities properly models this statement? Write this statement.
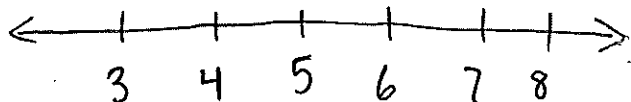
$<$ means _____

$>$ means _____

$\leq$ means _____

$-7A-$
$\geq$ means _____

5. Max correctly starts solving the linear equation $3(x+7) = -9$ writing $x+7 = -3$ Which of the following properties justifies what Max wrote?

$$x + 7 = -3$$

6. Which of the following graphs shows the solution set to $3x - 7 > 8$

Graph the solution

open circle
or
Closed circle

why ?

3 4 5 6 7 8

Circle: greater than   OR   Less than

_____

7. The value $x = 8$ is a solution to each of the following, except which?

$$x - 4 > 3x \qquad \text{OR} \qquad 2(x+3) = 4x - 10$$

8. Plato was saving $10 each week in order to have enough money for a phone that costs $150. If his father started him off with $20 which of the following is the minimum number of whole weeks Plato will need to save? Write an equation and solve.

Name: _____ ☐ 2B ☐ Date: __Unit 2 Study Guide__

Algebra

9. The perimeter is given by the formula $P = 4x$. Solve for x in terms of P.

10. When a number, X is increased by 4, and then the result is multiplied by 6 is equal to 18. Write an equation and solve it to find the value of X.
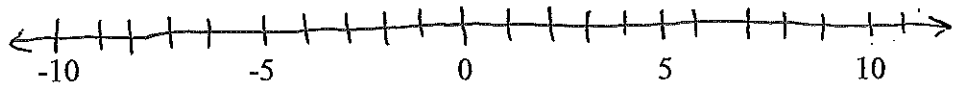
11. Justify your response, is the value $X = -4$ a solution to the inequality $5x - 3 > 6x$

12. Solve the following equation for x. Show the manipulations that lead to your final answer.

$$7(x + 2) - 3x + 4 = (x - 5) + (x - 3)$$

13. Algebraically solve the inequality $5x - 146 \leq -9(3x + 2)$

14. Graph the inequality from #13 on the number line.

15. Give a property of real numbers or a property of equality to justify each step in the solution of the equation shown below.

$$4x - 8 + 2x + 1 = 37$$

_____ Step 1

$$4x + 2x - 8 + 1 = -37$$

_____ Step 2

$$6x - 7 = -37$$

_____ Step 3

$$6x = -30$$

_____ Step 4

$$x = -5$$

16. Solve the following multistep equation. $-3x - 4 = -22$

Name: _____   Unit # __3__   Lesson # __Review__

Activator and Video

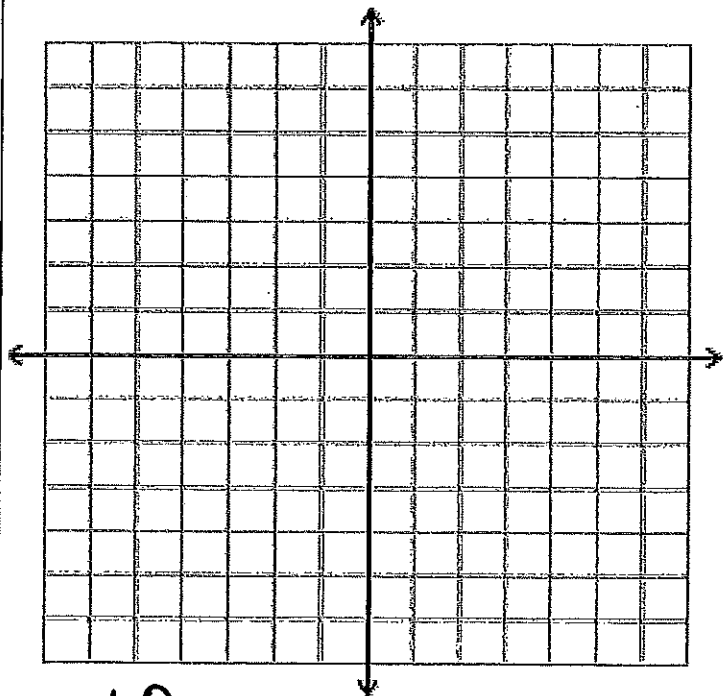### New Vocabulary (1 of 4)

New Vocabulary (2 of 4)

New Vocabulary (3 of 4)

Unit # 3   Lesson # Review

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper

Name: _____

PART I QUESTIONS: Answer all questions in this part. Show all of your work.

1. If $g(x) = 5x + 2$ and $f(x) = x - 4$ then which of the following is the value of $g(-6)$ and $f(-5)$?

   $g(\ ) = 5(\ ) + 2$

   $f(\ ) = (\ ) - 4$

2. If a function is defined by the formula $f(x) = \frac{1}{4}x - 2$ and its domain is given by the set $\{-8, -4, 0, 4\}$ which of the following sets gives the function's range?

   • Substitute

   $\{\underline{\quad}, \underline{\quad}, \underline{\quad}, \underline{\quad}\}$

   rAnge is y or f(x)

x	f(x)
-8	
-4	
0	
4	

   Substitute or use the calculator

3. The distance, d, that a car has traveled, as a function of time, t, is given in the table below. What is the average rate of change of the distance over the interval $4 \le t \le 10$ ← use these numbers

(y) d (miles)	0	119	150	271	332	468
(x) t (hours)	0	2	4	6	8	10

   • determine the distance and the number of hours during the given interval.

t	d
4	150
10	468

   —hours ——————> _ miles

   Divide $\frac{miles}{hours}$ to get mph ↑ miles per hour

4. For the function $h(x)$ shown graphed below, over which of the following intervals is $h(x) = 0$

   $h(x) = |x - 1| - 2$

   $h(x) = 0$ Line

   $\underline{\quad} \le X \le \underline{\quad}$

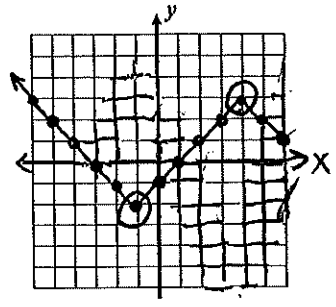 $(\frac{\quad}{x}, \underline{0})$ $(\frac{\quad}{x}, \underline{0})$

-11A-

5. For the function defined by $f(x) = \begin{cases} 3x-1 & x < 5 \\ 3x-1 & x \geq 5 \end{cases}$, which of the following represents the value of $f(6)$?

$$f(\quad) = 3(\quad) - 1$$

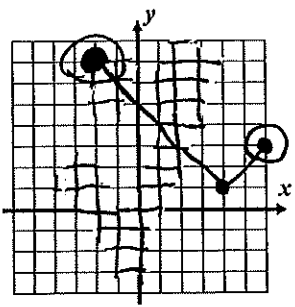6. For function $g(x)$ graphed below, over which of the following intervals is $g(x)$ increasing

$(\underline{\quad}, \underline{\quad})$
and
$(\underline{\quad}, \underline{\quad})$

from left to right
the graph should
go __up__

7. Given the graph of the function $f(x)$ shown below, which of the following intervals represents its domain

domain

$\underline{\quad} \leq x \leq \underline{\quad}$
Left   Right

$(\underline{\quad}, 7)$ $(\underline{\quad}, 3)$

define domain: _____

_____

what is the difference between
an open circle and a closed
circle? _____

8. A function is initially defined by the set of coordinate pairs $\{(-2,6),(-5,4),(7,-3)\}$. Which coordinate pair below, if added to this set, prevents the set from representing a function?

$(\dfrac{-2}{x}, \underline{\quad})$ add this
to create a non-function

Explain why? __-2 is repeated__

Define a non-function: it has repeating $\dfrac{\quad}{x \text{ or } y}$ Values.

9. If the function $h(x)$ is defined by $h(x) = 3x$ then which of the following values of x solves the equation $h(-12)$?

$h(\quad) = 3(\quad)$ Substitution problem

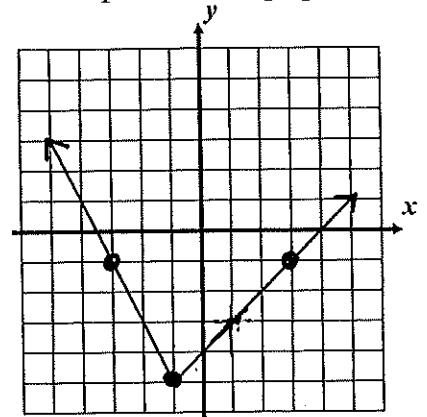$$h(\quad) = \underline{\quad}$$

$-118-$

Name: _____ Date: _Study Guide Unit 3B_

Algebra

PART II QUESTIONS: Answer all questions in this part. Show all of your work.

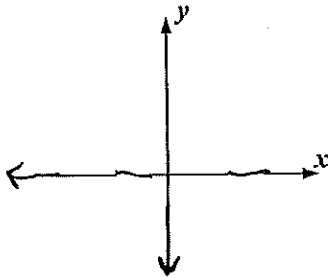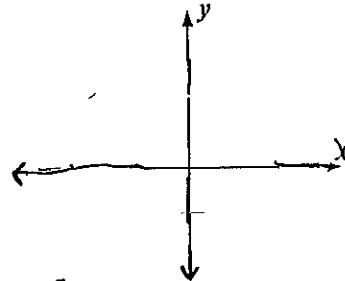10. The function $f(x)$ is shown on the graph. What point does f(-1) represent? Put this point on the graph.

$$(\frac{-1}{}, \underline{\quad})$$

11. What point(s) does the value of f(x) = -1 represent? Graph the point(s).

$$(\underline{\quad}, \frac{-1}{}) \text{ and } (\underline{\quad}, \frac{-1}{})$$

12-13. Do the following graphs represents functions? Explain how you arrived at your choice.

draw a non-function

Explain: ___X value repeats___

draw a function

Explain: ___X value doesn't repeat___

PART III QUESTIONS: Answer all questions in this part. Show all of your work.

14. Two functions, _____ and $g(x)$, are given below. Determine which of these functions has the greater average rate of change over the interval $1 \le x \le 5$

The average rate of change shows ...

Subtract then divide the two numbers

change ?

x	0	1	2	3	4	5	6
$g(x)$	0	2	4	8	16	34	68

change ?

X	$g(x)$
1	2
5	34

$$\underline{\quad} \left< \frac{}{} \right> \underline{\quad}$$

— 12A

15. Graph the piecewise function shown below on the axes provided. Which point below is on the graph?

$$f(x) = \begin{cases} -3x - 8 \end{cases} \text{ between } -4 \leq x \leq -2$$

x	f(x)
-4	
-3	
-2	
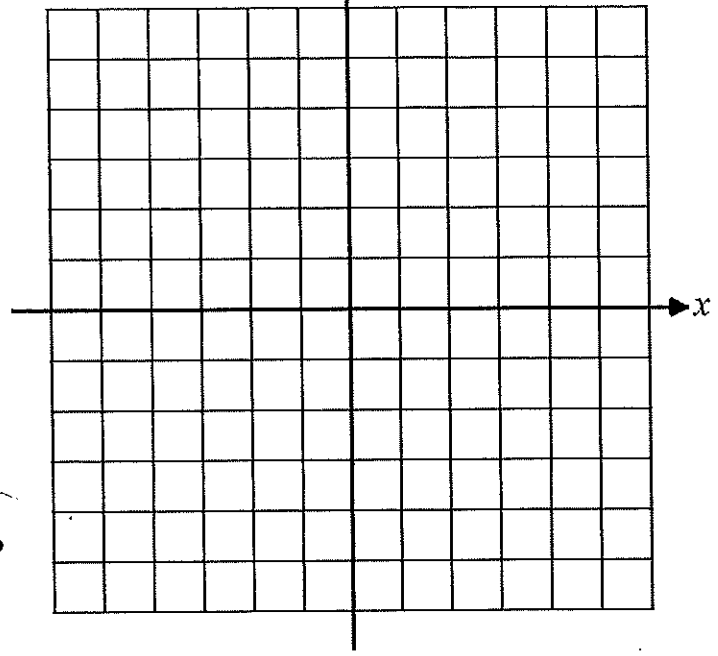
16. What is the value of f (-3) for this function?
Circle this point on your graph.

which point is on the x = -3 line?

(___ , ___)

PART IV QUESTION: Answer the question in this part. Show all of your work.

17. For the function $f(x)$ shown graphed below answer the following questions.
State the domain and range.

___ ≤ x ≤ ___   ___ ≤ f(x) ≤ ___

how far Left?   domain   how far right?   how Low?   range   how high?

18. What values of x solve the equation $f(x) = -1$
Circle points on your graph that justify your solution.

There are 3 x-values on f(x) = -1

$$x = \{ \underline{\quad}, \underline{\quad}, \underline{\quad} \}$$

x	y
	-1
	-1
	-1
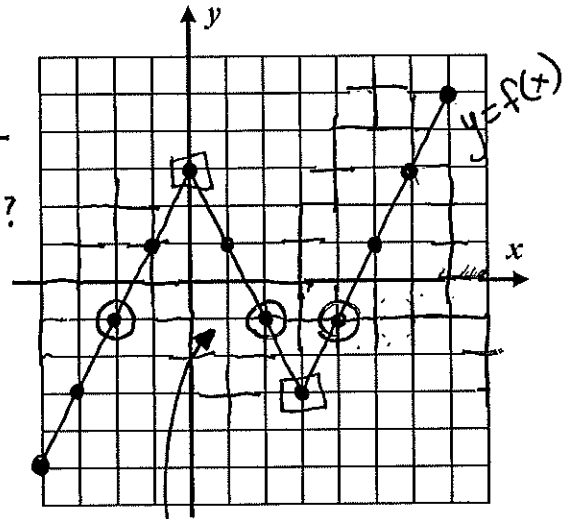
19. Give the intervals over which $f(x)$ is decreasing; and, circle the decreasing sections on the graph.

___ ≤ x ≤ ___

Left (Top of the hill)   right (Bottom of the hill)

decreasing interval

from Left to right it is going _____ .

$y = f(t)$

- 12B -

Name: _____

Activator and Video

New Vocabulary (1 of 4)

New Vocabulary (2 of 4)

New Vocabulary (3 of 4)

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper

- 14 -
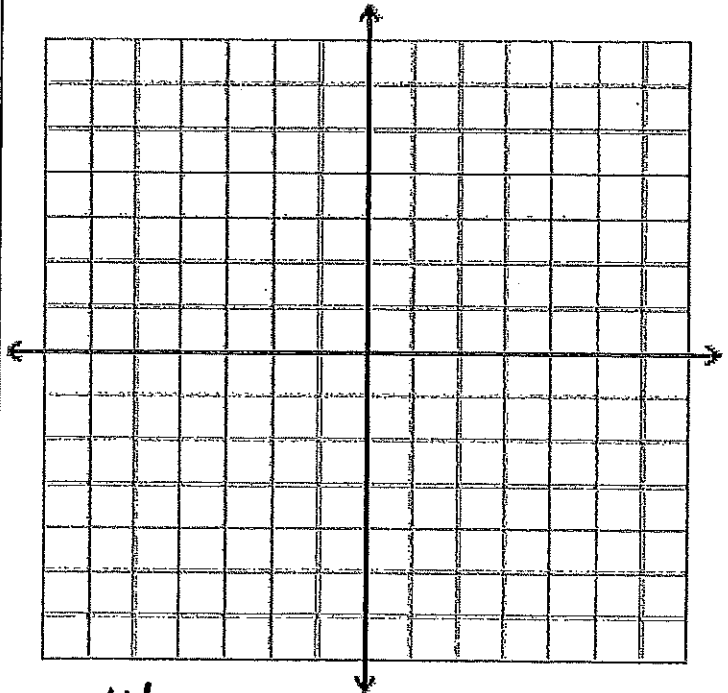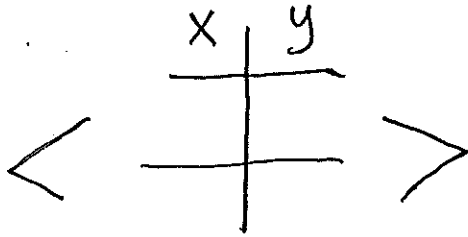
UNIT #4 Study Guide
COMMON CORE ALGEBRA I

PART I QUESTIONS: Show all of your work.

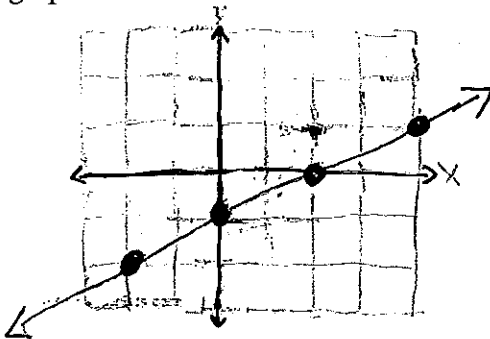1. Which of the following is the slope of the line that passes through the points $(-4, -6)$ and $(1, 9)$

$$X \mid Y$$

$$M = \frac{y \text{ change}}{x \text{ change}} = \frac{\square}{\square} = \underline{\quad}$$

2. Which equation could correspond to the graph of the linear function shown below?

$M = \underline{\quad} \leftarrow$ fraction

$B = \underline{\quad}$

$y = \underline{\quad\quad\quad}$

3. A wheel with a specific circumference will move 540 inches when rolled 20 times. How far will the same wheel move, to the nearest inch, in 9 rolls?

$y = MX$

$y = (\ )(\ )$

$y = \underline{\quad}$

X	Y
9	
20	540

$\underline{\quad}$ inches after 9 rolls.

$M = \dfrac{540}{20} = \dfrac{\text{in}}{\text{distance per roll}}$

4. A line with a slope of -3 passes through the point $(4, -5)$. Which of the following is the equation of the line?

$M = \underline{\quad}$

$B = \underline{\quad}$

$y = \underline{\quad\quad\quad}$

$y = MX + B$

$y = (\ )X + B$

− 15A −

5. A rental car company charges a base fee of $^{\#}25$ plus $29¢$ per mile driven. Which of the following equations models the charge y for renting a car based on the number of miles, X, driven?

$$M = \underline{\qquad}$$

$$B = \underline{\qquad}$$

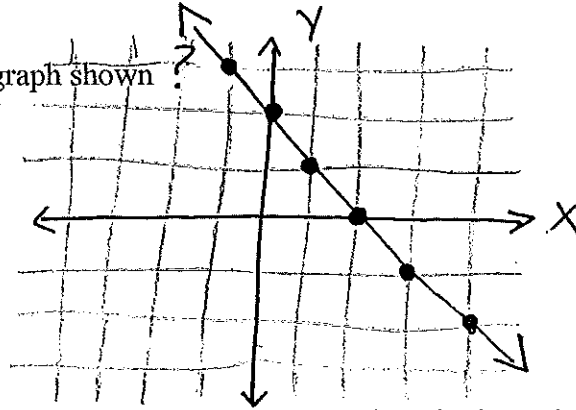$$y = \underline{\qquad\qquad}$$

6. Which of the following is the equation of the graph shown ?

$$M = \underline{\qquad}$$
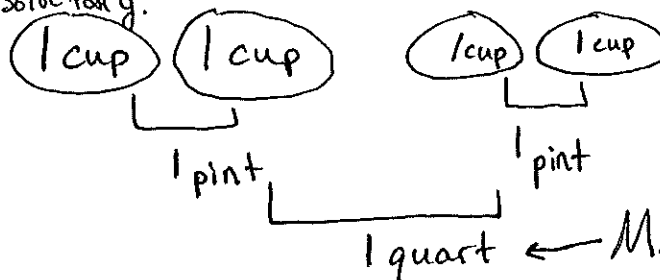
$$B = \underline{\qquad}$$

$$y = \underline{\qquad\qquad}$$

7. Charles is making a recipe that calls for 5 quarts of milk. Unfortunately, Charles only has a single cup measuring device. If there are two cups in a pint and two pints in a quart, then how many cups will Charles need for 5 quarts of milk? If $B = 0$, solve for y.

$x \nearrow$

$x \quad y = Mx + B$

$y = (\ )(\ ) + 0$

(1 cup) (1 cup)   (1cup) (1cup)

1 pint   1 pint

1 quart ← $M = \underline{\quad}$ cups

X	y
0	0
5	

8. Which of the following equations describes all points on a **vertical** line that passes through the point $(-4, 8)$
  ↖ only touches X

Vertical Line $X = \underline{\qquad}$

horizontal Line $y = \underline{\qquad}$

9. A sequence is defined by the rule. If $f(x) = 4x+2$ If $f(1) = 6$ then what does $f(7) = \underline{\qquad}$?

$$f(1) = 4(1) + 2$$
$$f(1) = 4 + 2$$
$$f(1) = 6$$

$- 15B -$

10. If graphed in the coordinate plane, would the line $y = 3x + 6$ pass through the point $(-5, -9)$ Explain how you arrived at your answer. _Use substitution._

Yes, because the last

equation is _____ .

11. An arithmetic sequence has a B term of 6 and a M term of 8. What is its 3rd term? Show how you arrived at your answer.

$B = \underline{\quad}$ $M = \underline{\quad}$

$f(\underline{\quad}) = \underline{\quad}$

X	f(x)
0	
1	
2	
3	

$)+\underline{\quad}$
$)+\underline{\quad}$
$)+\underline{\quad}$

PART III QUESTIONS: Show all of your work

12. As a large truck fills its gas tank, the volume of gas, in gallons, can be modeled with the linear function $y = 7.1x + 5$, where y is the volume of gas and x is the number of minutes it has been filling. Give a physical interpretation for both the 7.1 and 5 parameters in the linear model. Use appropriate units in your explanation.

7.1 is the _____ which is gallons per minute being fill

5 is the _____ which is the starting _____ .

13. Write the equation of the line that passes through the points $(5, 6)$ and $(3, 8)$ Express your answer in simplest $y = mx + b$ form.

X	y

$\underline{\quad} < \underline{\quad\quad} > \underline{\quad}$
y change
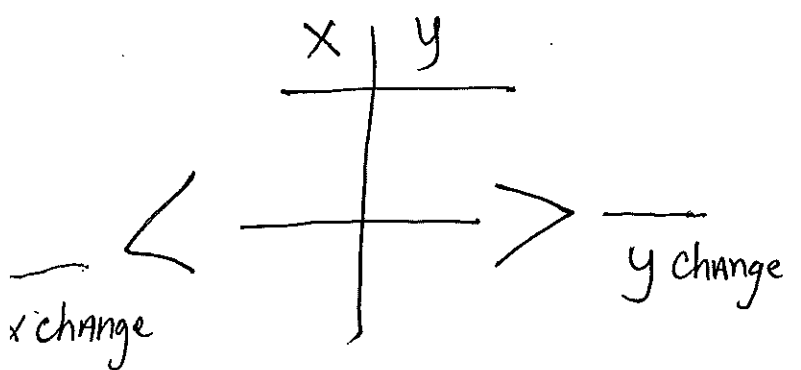
x change

$M = \dfrac{y\ change}{x\ change} = \underline{\quad}$

$y = Mx + B$

$(\quad) = (\quad)(\quad) + B$

$-16A- \quad \underline{\quad} = B$

get y by itself

14. Graph the line $y - 4x = -3$ on the axes provided.

$+4x \quad +4x$

X	y
0	
1	
2	
3	
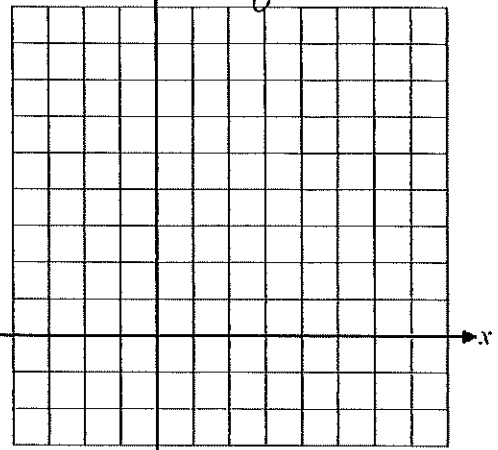
15. Use the graph from #14. At what value of y does the line have when x = 2. Show how you determined your answer.

Substitute

$$y - 4x = -3$$
$$y - 4(\ ) = -3$$

X	y
2	

16. A company produces boxes of DVD's at a rate of 80 boxes per hour. They begin to produce boxes when they first open for the day and after 4 hours have 573 boxes in stock. How many boxes were in stock when they opened?

$$y = Mx + B$$
$$y = (\ )x +$$
$$(\ ) = (\ )(\ ) + B \quad \text{Solve for B}$$

$M = 80$

$$y = 80x + \underline{\quad}$$

17. Use the same company from problem #16. Write a linear model for the amount of boxes, y as a function of the number of hours since they opened, x. Use your model to predict the number of boxes in stock at the end of 9 hours of work.

x Substitute

$$y = 80x + 253$$

_____ boxes will be at the company at the end of the day.

Name: _____

Activator and Video

New Vocabulary (1 of 4)
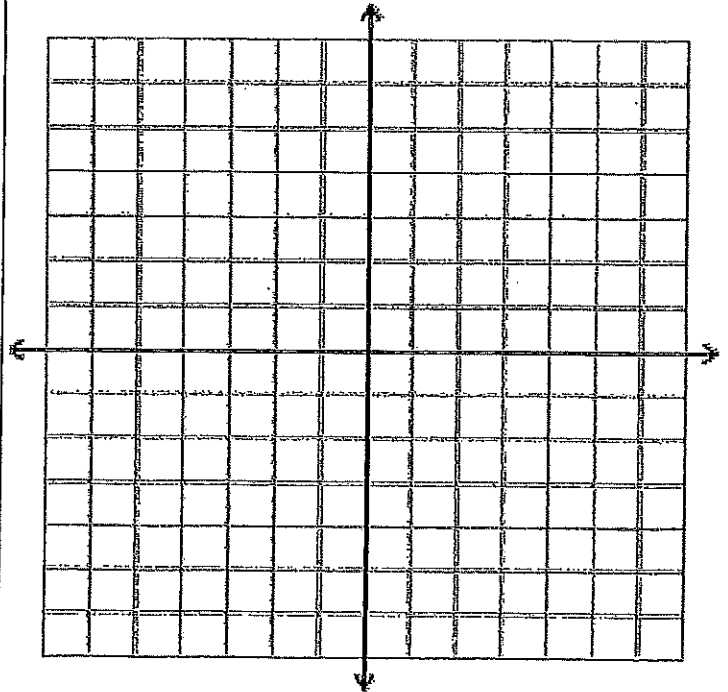
New Vocabulary (2 of 4)

New Vocabulary (3 of 4)

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper

COMMON CORE ALGEBRA I: UNIT #5 *Study Guide*
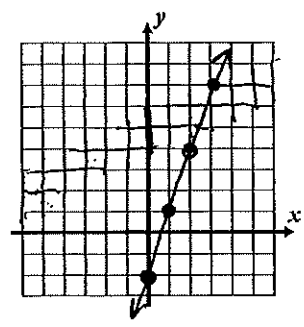
PART I QUESTIONS: **Show all of your work.**

1. Which of the following is the X-coordinate of the solution to the system shown below?

$$2x + 3y = 18$$
$$4x - 3y = 12$$

$X =$ _____

2. The line $y = 3x + 2$ is graphed. **Graph the other line $y = -x + 6$** Which of the following would be the

    y-coordinate of the solution when both lines are graphed?

    $y =$ _____

3. Which of the following equations would have a solution that is the same as the solution to the system?

    Solution

    $\left(\dfrac{6}{}, \underline{}\right)$

    (x, y)

    Substitute

    $4x + 7y = 38$ $x = 6$

    $4() + 7y = 38$

    Circle:

    yes / NO

4. Is $(4, 8)$ a solution to the system of equations? $y = 5x - 12$ $y = -3x + 20$

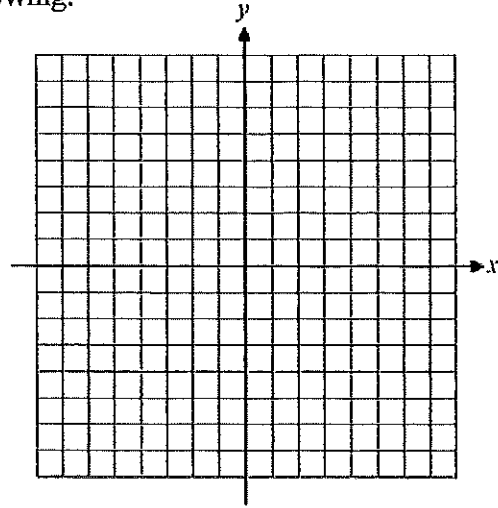| X	Y
3	
4	
5	

X	Y
3	
4	
5	

— 19A -

5. The : functions $f(x) = x + 3$ and $g(x) = \frac{1}{3}x - 1$ are shown.

The : solution to $f(x) = g(x)$ is which of the following.

Write the solution.

$\left(\dfrac{-6}{\uparrow} , \dfrac{-3}{\uparrow} \right)$

x value   y value

6. Which of the following points is a solution to the system of inequalities shown graphed below?

Write a solution

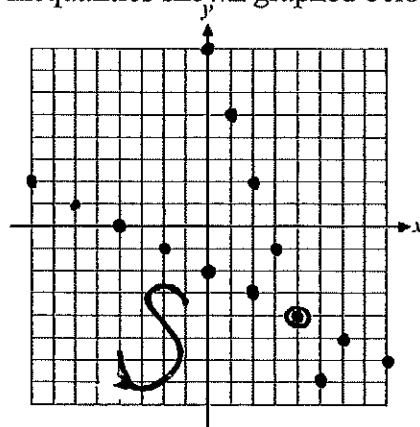$y \leq \dfrac{-1}{2}x - 2$

$y \overset{\angle}{=} -3x + 8$

$\left(\underline{\quad} , \underline{\quad} \right)$

Is this point in the double shaded?

_____

7. Which of the following is the value of y that solves the system of equations shown below?

$5x + 6y = 51 \qquad y = 2x$

$5x + 6(2x) = 51$

8. At what point do the lines $y = 2x - 5$ and $y = -2x + 3$ intersect? Show Mr. V the calculator.

x	y
1	
2	
3	

x	y
1	
2	
3	

$-19B-$

$\left(\underline{\quad} , \underline{\quad} \right)$

is the solution.

Name: _____ Date: ___Unit 5B___ S. Guide

PART II QUESTIONS: Show all of your work.

9. Find the value of x that solves the system shown below. Show the work that leads to your answer.

$$y = 3x \quad \text{and} \quad 2x + y = -30$$

$$2x + 3x = -30$$

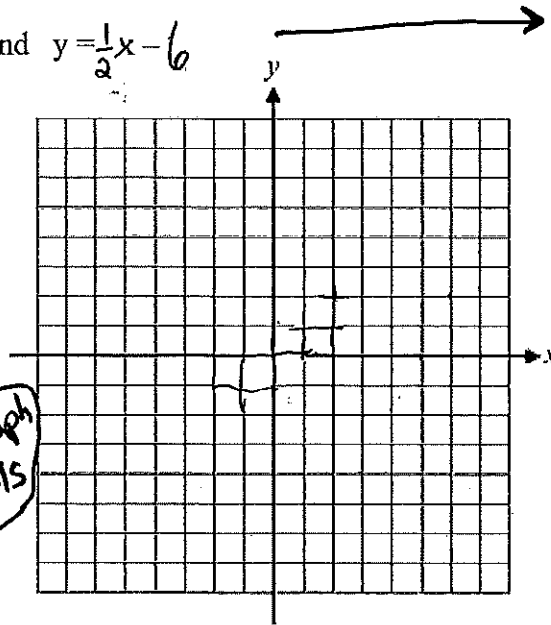10. Graph the system of equations. $y = \frac{-2}{3}x + 1 \quad$ and $\quad y = \frac{1}{2}x - 6$

$\boxed{Ctrl} \rightarrow \boxed{\div}$

to enter
fractions.

x	y
0	
3	
6	
9	

x	y
0	
2	
4	
6	
8	

11. What is the solution to #10?

intersection
of the
Lines

$\left(\underline{\quad}, \underline{\quad} \right)$

Don't graph
decimals

PART III QUESTIONS: Show all of your work.

12. Solve the following system of equations algebraically. for the solution.

$$5x + 2y = 20$$
$$-x - 2y = 4$$

$$5x + 2y = 20$$
$$5(\quad) + 2y = 20$$

The solution
is

$$\left(\quad , \quad \right)$$

$$x = \underline{\quad}$$

$$y = \underline{\quad} \quad -20A-$$
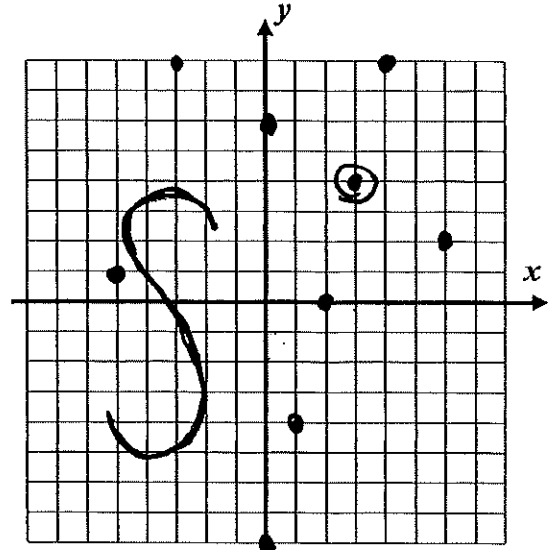
13. Sketch the graph to the system of inequalities shown below. Explain how to shade.

$y > 4x - 8$ and $y \leq \frac{-2}{3}x + 6$

dotted
OR
Solid

Shade Above
OR
Shade below

X	Y
0	
2	
4	

dotted
OR
Solid

Shade Above
OR
Shade below

X	Y
0	
3	
6	

Circle

14. Graph the point $(-5, 1)$ Is it a solution to the system?   Yes
OR
No

Is it in the double shaded? _____

15. The Poughkeepsie Drama Club is selling tickets to an upcoming play. They can sell 500 tickets. The adult tickets sell for $10 each and student tickets cost free. They would like to raise $3,000. If x represents the number of adult tickets and y represents the number of student tickets, answer the following.
Write a system of equations that models this situation.

_____ + _____ = _____

number   number   number
of   of   of All
adult   Student   tickets
tickets   tickets

_____ _____ + _____ _____ = _____

cost   number   Cost   number   Cost of
of   of   of   of   All
1 Adult Adult   1 Student Student tickets
ticket tickets ticket tickets

16. A party is thrown where 20 tables are used. Each table either sits 8 people or 10 people. A total of 170 people can be sat at the tables. If E represent the number of 8 person tables and T represents the number of 10 person tables, write a system of equations that models this situation.

_____ + _____ = _____

Number of   Number of   Total number
Eight person   Ten person   of
Tables   Tables   tables

_____ _____ + _____ _____ = _____

number   number   number number   Total seats
of   of   of   of   in the
Seats   Eight   Seats   Ten   room
per   person   per   person
one   Tables   one   Tables
eight   Ten
person   person
Table   Table

– 20B –