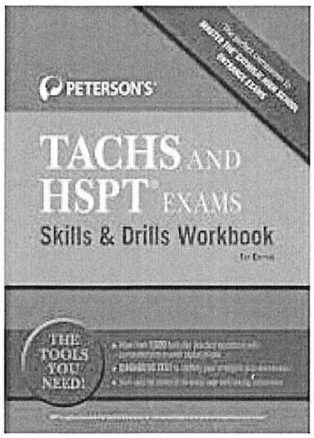
Dear 8th Gr. Parents and Guardians,



Over the summer, it is extremely important for your child to prepare for the HSPT (high school placement test). Your child is taking home a practice book so he/she may practice daily. Please be sure that your child completes each section of the HSPT book weekly and keeps up with assignments. Upon returning to school, students will continue to review in class before taking the HSPT test in January 2024.

. The following tasks need to be completed at home:

- ***Introduction to reading questions: Reading comprehension drills 1, 2, and vocabulary.***
- ***Written expression and language***
  - *Spelling drills*
  - *capitalization and punctuation drills*
  - *Usage drills*
  - *Comprehension and written expression drills*
- ***HSPT Verbal Skills***
  - *Analogies*
  - *antonym drills*
  - *synonym drills*
  - *verbal logic drills*
  - *verbal classification drills.*
- ***MATHEMATICS***
  - *Introduction to math questions*
  - *Math drill 1 (If your child needs additional help in the math section, he/she may use Khan Academy or*
  - *Math drill 2 IXL, or quickmath.com)*
- ***Quantitative Skills***
  - *Introduction to quantitative skills and ability questions.*
  - *HSPT quantitative skills drill*

The online assignments will consist of verbal skills, reading comprehension, written expression, and usage. Try to stay on target and complete each section practice as well as each of the tests of the HSPT by the following dates:

- *Friday, June 30th*
- *Friday, July 7th*
- *Friday, July 14 th*
- *Friday, July 21st*
- *Friday, August 28th*
- *Friday, August 4*

After taking the practice test for each section, submit a screenshot of the test with the score to the new reading class. Please enroll in the HSPT class. Here is the code **u6hawrv**

These are only suggested dates. You may work at your own pace.

Thank you for a great year. May God continue blessing us with such a beautifully engaged community!

Sincerely,

Junior High Teachers

Name:_____ **Grade:** 8th **Date:**_____

- ☐ #2 pencils AND erasers
- ☐ blue or black pens
- ☐ red pens
- ☐ green pens (for correcting SCIENCE work)
- ☐ (4) white-out tapes (No liquid)
- ☐ (3) highlighters (YELLOW ONLY)
- ☐ Thin and thick Markers
- ☐ Crayons
- ☐ (1) pair of scissors
- ☐ (2) glue sticks
- ☐ (2) Scotch Tape Magic Refill for tape dispenser (6th grade only)
- ☐ (1) package of 4 Post-Its (any color)
- ☐ Pencil Pouch
- ☐ (2) reams of paper:
    - ➢ 2 white printer paper
- ☐ (1) regular folder for daily use (Homework & Paperwork)
- ☐ 1 pack of Sharpies
- ☐ (6) different-colored notebooks for the different subjects
    - ➢ Red Composition – RELIGION,
    - ➢ Green Composition– SCIENCE
    - ➢ Blue Composition- Literature,
    - ➢ Purple Composition-ENGLISH,
    - ➢ Black Composition- SOCIAL STUDIES
    - ➢ Graphing Notebook Spiral - MATH
- ☐ (2) boxes of facial tissue (like "Kleenex," etc.)
- ☐ (2) rolls of paper towels
- ☐ (2) containers of Clorox Cleaning Wipes
- ☐ Earphones (compatible with iPad cases)
- ☐ $5 for Homework Planner (ALL STUDENTS)
- ☐ 1 set of watercolors
- ☐ $20.00 in an envelope with student's name on it for Book Purchase (6th GRADE ONLY)

Parent Signature:_____

BIG Ideas Entering Algebra 1

You should be able to:

A. Apply the order of operations to integer computations.

B. *Add, subtract, multiply and divide integers.*

C. *Work with fractions.*

D. *Simplify algebraic expressions.*

E. *Solve equations that contain multiple steps (including fractional coefficients).*

F. *Create algebraic equations from verbal expressions.*

G. *Evaluate expressions.*

H. *Find the slope of a line*

I. *Graph linear equations*

J. *Solve linear inequalities*

A. You should be able to: Apply the Order of Operations to integer computations. Refer to video tutorials at http://www.khanacademy.org/

Evaluate the following expressions without a calculator using Order of Operations. (PEMDAS)

1. $4 \cdot 12 + 8 - 10 \div 5$

2. $8(3+4) - 3 \cdot 2 \div (12-9)$

3. $\left(5^2 + (12-8)^2\right) - 17$

Insert sets of parentheses to make the following equation true. Then work through Order of Operations to support your answer.

4. $7 + 14 \div 9 - 6 = 7$

B. You should be able to: Add, subtract, multiply and divide integers. Refer to video tutorials at http://www.khanacademy.org/

Simplify the following expressions without a calculator. Show work when necessary.

5. $27-12=$ _____

6. $-13-9=$ _____

7. $27-100=$ _____

8. $-15-(-18)=$ _____

9. $-10\cdot(-3\cdot 6)=$ _____

10. $(-5)^2=$ _____

11. $-44\div 4=$ _____

12. $\frac{-12}{-4}=$ _____

13. $81\div(-9)=$ _____

C. You should be able to: Work with fractions. Refer to video tutorials at http://www.khanacademy.org/

Simplify the following without a calculator, make sure to show all of your work.

14. $\frac{3}{2}\cdot\frac{6}{5}\cdot\frac{15}{30}=$ _____

15. $\frac{3}{5}+\frac{5}{8}+\frac{1}{4}=$ _____

16. $\frac{3}{4}\div 8=$ _____

17. $\frac{5}{4}-\frac{2}{3}=$ _____

18. $\frac{1}{2}\cdot\frac{5}{8}\cdot\frac{4}{5}=$ _____

19. $-\frac{16}{9}\div 8=$ _____

20. $-\frac{3}{8}\div\frac{3}{4}=$ _____

21. $5-\frac{2}{3}=$ _____

D. You should be able to: Simplify algebraic expressions. Refer to video tutorials at http://www.khanacademy.org/

Simplify the following algebraic expressions. Show all work.

22. $-2(3x+2)=$ _____

23. $3(2x-3)+(x-5)=$ _____

24. $4(3x-2)-(5x-6)=$ _____

25. $\frac{3}{4}(4x+12)=$ _____

E. You should be able to: Solve equations. Refer to video tutorials at http://www.khanacademy.org/

Solve the following equations. Show all work.

26. $x+12=62$

27. $48-x=23$

28. $x-2=14+6$

29. $13x=195$

30. $6y-11=25$

31. $8=\frac{x}{5}$

32. $\frac{x}{42} = \frac{6}{7}$

33. $3x + 7 = 2x - 1$

34. $-8 + 7x - 2 = 3x + 4 + 2x$

35. $-2 - 3(1 - x) = 4(-2x + 7)$

36. $-\frac{1}{2} - \frac{5}{6}x = \frac{3}{4}$

F. You should be able to: Create algebraic equations from verbal expressions.
Refer to video tutorials at http://www.khanacademy.org/

Write an algebraic equation for each. Then, solve each equation showing all work.

34. Three times a number, increased by 4, is 25. What is the number?

35. A number divided by .6 is 14. What is the number?

36. One third of a number is equal to 24. What is the number?

37. Eight less than twice a number is twenty. What is the number?

Write an algebraic equation for each of the following. Then solve each percent problem showing all work.

38. What number is 35% of 140?

39. 52 is 13% of what number?

40. 154 is what % of 175?

Solve the following word problems by setting up an algebraic equation. Then, solve the equations showing all work.

41. A $180 leather jacket is going on sale for a 25% discount. How much will the jacket cost on sale?

42. Mike bought 3 CD's at a cost of $13.99 for each CD. What will he pay in total including a 7% sales tax?

G. You should be able to: Evaluate expressions.
Refer to video tutorials at http://www.khanacademy.org/

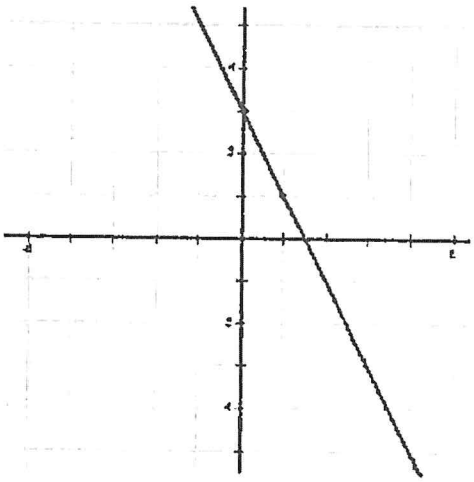
43. **Complete the following table by evaluating each expression for the given values.**

Expression	$x=4$	$x=-3$
$3x+1$	$3(4)+1=13$	$3(-3)+1=-8$
x^2		
$2x$		
$x+6$		

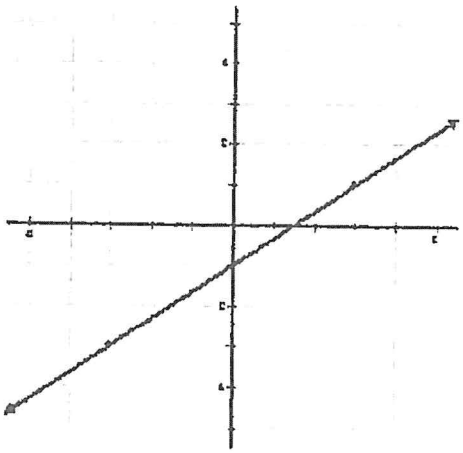
H. You should be able to find the slope of a line.

Refer to video tutorials at http://www.khanacademy.org/

44.) Find the slope of the line depicted in the graph below.



45.) Find the slope of the line depicted in the graph below.



46.) Find the slope of the line passing through (2, 4) and (5, 3).

47.) Find the slope of the line passing through (-2, -5) and (2, 3).

48.) Find the slope of the line passing through (-3, 4) and (2, 4). Based on your answer, what kind of line is this?

I. You should be able to graph linear equations.

Refer to video tutorials at http://www.khanacademy.org/

Directions:

PROCEDURE 1:

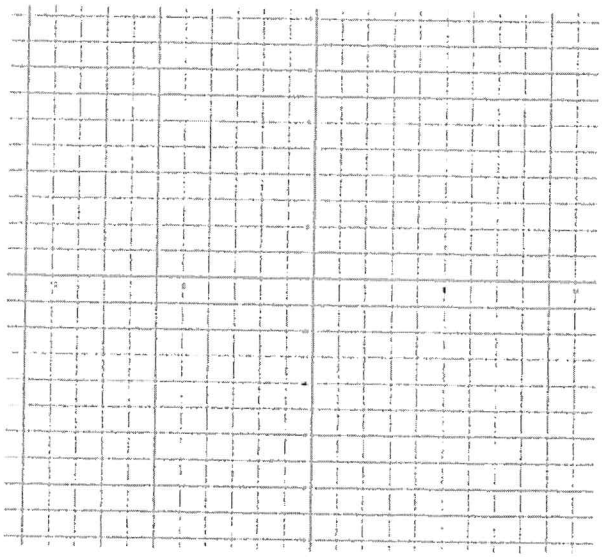
1. Put the equation in slope-intercept form ($y = mx + b$).
2. Identify the y-intercept (b).
3. Plot the y-intercept.
4. Identify the slope of the line (m).
5. Use the slope to graph more points. Use $m = \frac{rise}{run}$
6. Draw the line.

OR USE PROCEDURE 2: Set up a table of values and graph ordered pairs.

Note:

- Horizontal lines are written as $y = c$, where c is a real number. To graph, plot the y-intercept $(0, c)$ and draw a horizontal line through that point.
- Vertical lines are written as $x = c$, where c is a real number. To graph, plot the x-intercept $(c, 0)$ and draw a vertical line through that point.

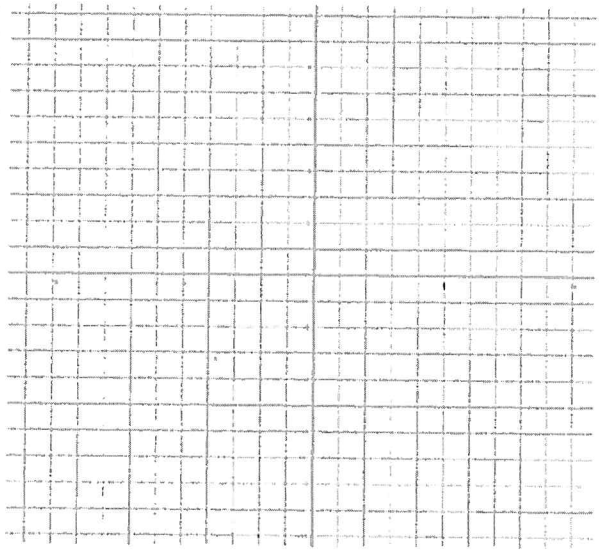
49.) $y = 2x + 3$



$m =$ _____

$b =$ _____

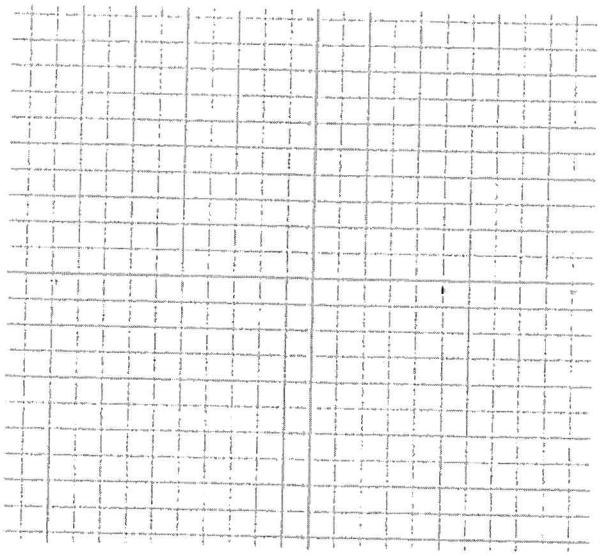
50.) $y = \frac{1}{3}x - 4$



$m =$ _____

$b =$ _____

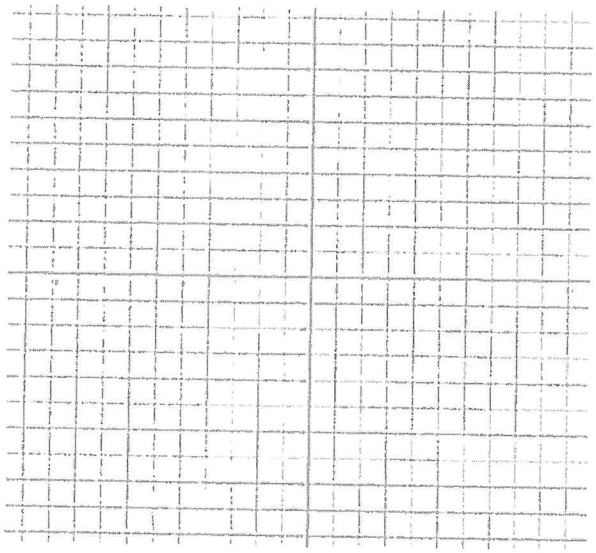
51.) $2x+3y=12$



$m=$ _____

$b=$ _____

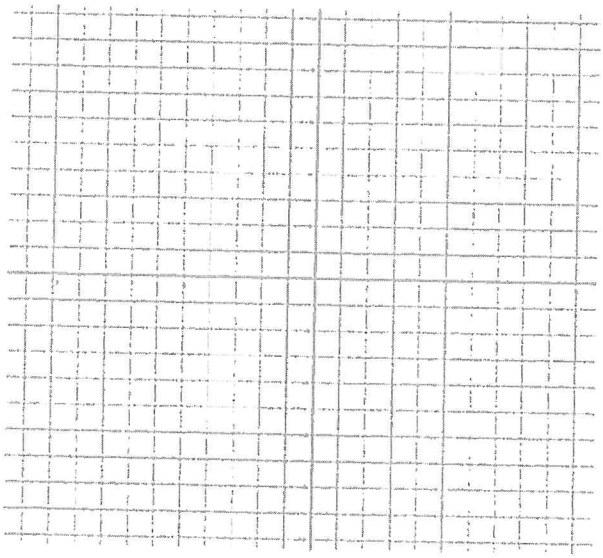
52.) $-4x=2y-8$



$m=$ _____

$b=$ _____

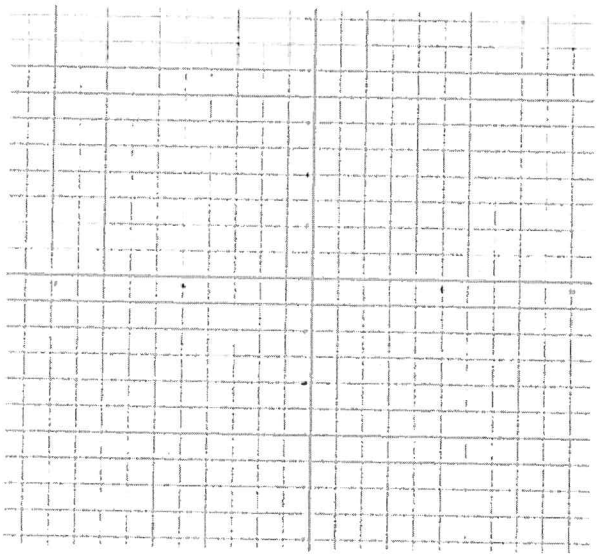
53.) $y=-\frac{3}{2}x+5$



$m=$ _____

$b=$ _____

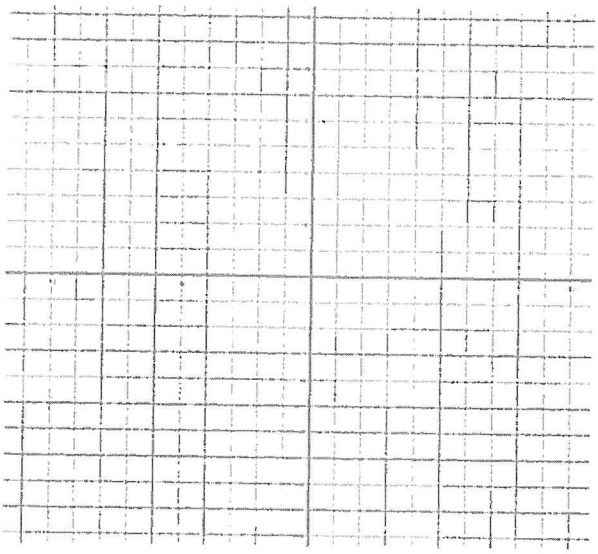
54.) $y=x$



$m=$ _____

$b=$ _____

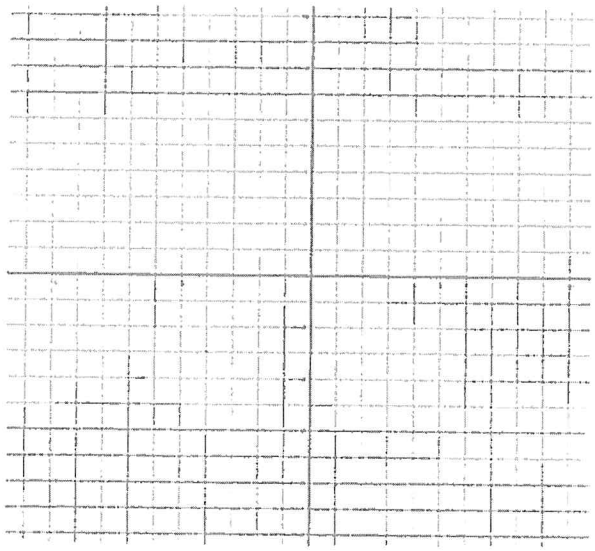
55.) $y = -x - 1$



$m =$ _____

$b =$ _____

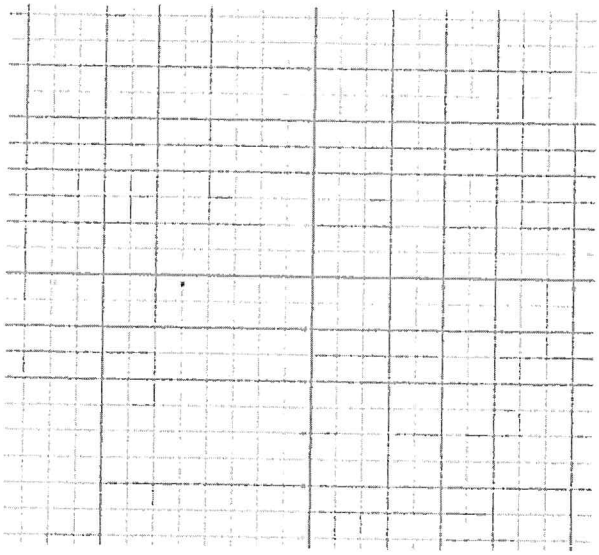
56) $y = 2$



$m =$ _____

$b =$ _____

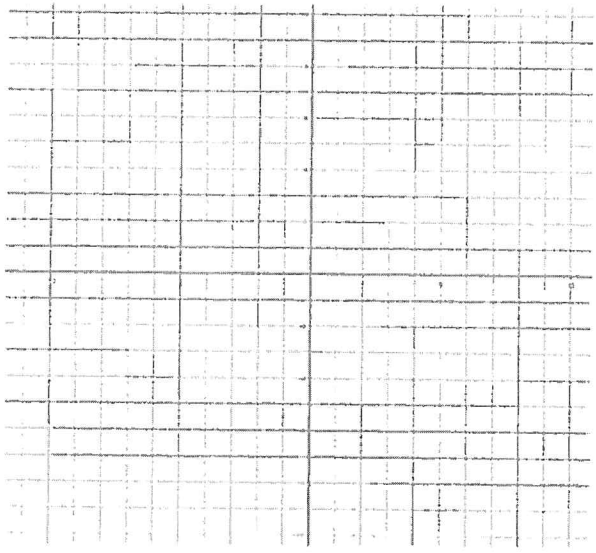
57.) $y = -6$



$m =$ _____

$b =$ _____

58.) $x = 3$



$m =$ _____

$b =$ _____

Answers to ALGEBRA I summer packet

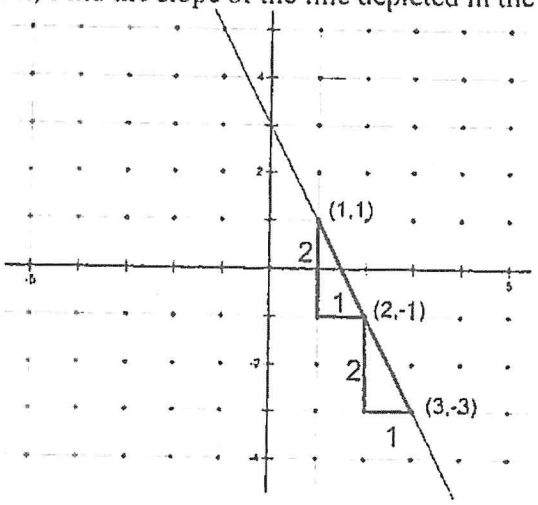
1) 54
2) 54
3) 24
4) (7+14)÷(9-6)=7
5) 15
6) -22
7) -73
8) 3
9) 180
10) 25
11) -11
12) 3
13) -9
14) 9/10
15) 59/40
16) 3/32
17) 7/12
18) ¼
19) -2/9
20) -1/2
21) 13/3
22) $-6x-4$
23) $7x-14$
24) $7x-2$
25) $3x+9$
26) $x=50$
27) $x=25$
28) $x=22$
29) $x=15$
30) $y=6$
31) $40=x$
32) $x=36$
33) x = -8
34) x = 7
35) x = 3
36) x = -3/2 OR x = -1.5
34) $3x+4=25$; $x=7$
35) $n\div0.6=14$; $n=8.4$
36) $1/3n=24$; $n=72$
37) $2x-8=20$; $x=14$
38) 49
39) 400
40) 88
41) $180(0.75)=x$; $x=\$135$

42) $3(13.99)+0.07(3(13.99))=x$; $x=\$44.91$

43) (see table below)

16	9
8	-6
10	3

44.) Find the slope of the line depicted in the graph below.



-First, choose a point to start at.

-Let's start at (1, 1). We count the change in the y-direction, then the change in the x-direction.

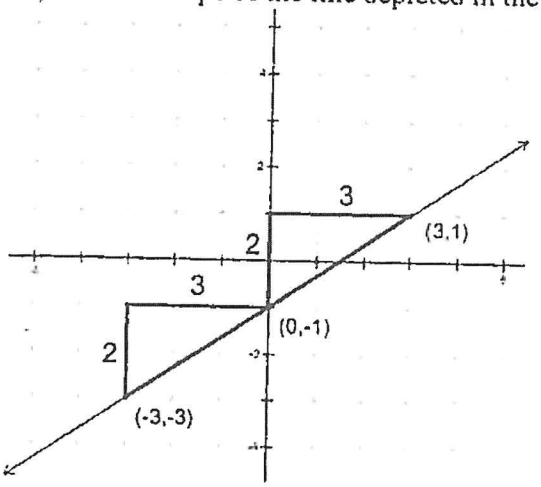
-From (1, 1), we go DOWN 2 units, then RIGHT 1 unit to get to our next coordinate (2, -1).

-Notice if we go DOWN 2 units and RIGHT 1 unit again from (2, -1), we land at our next coordinate, (3, -3).

*Remember, the slope of a line is the change in y divided by the change in x.

-Therefore, the slope of this line is $\frac{-2}{1}$ or -2.

45.) Find the slope of the line depicted in the graph below.



-Again, we start by choosing a point to begin with.

-Start at (-3 ,-3).

-From (-3, -3) we move UP 2 units and RIGHT 3 units to (0, -1).

-So, our change in y is **positive 2** and our change in x is **3.**

-Therefore, our slope is $\frac{2}{3}$.

-Notice if we go UP 2 units and RIGHT 3 units from (0, -1), we land at our next coordinate, (3, 1).

-The slope is the same for the whole line.

46.) Find the slope of the line passing through (2, 4) and (5, 3).

We find the slope between 2 points algebraically by using the slope formula:

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$ *(or the change in y divided by the change in x)*

Here, we have $\begin{matrix}(x_1, y_1) & (x_2, y_2)\\ (2,\ 4) & (5,\ 3)\end{matrix}$ *So,* $m = \frac{3-4}{5-2} = \frac{-1}{3}$.

The slope is negative one third.

47.) Find the slope of the line passing through (-2, -5) and (2, 3).

Again, we find the change in y over the change in x using $m = \frac{y_2 - y_1}{x_2 - x_1}$.

So, $m = \frac{3-(-5)}{2-(-2)} = \frac{8}{4} = \frac{2}{1} = 2$.

The slope of this line is positive 2.

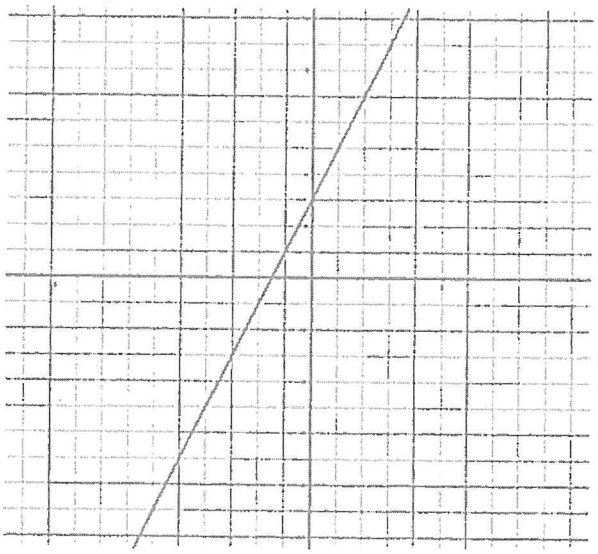
48) Find the slope of the line passing through (-3, 4) and (2, 4). Based on your answer, what kind of line is this?

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

So, $m = \frac{4-4}{2-(-3)} = \frac{0}{5} = 0$.

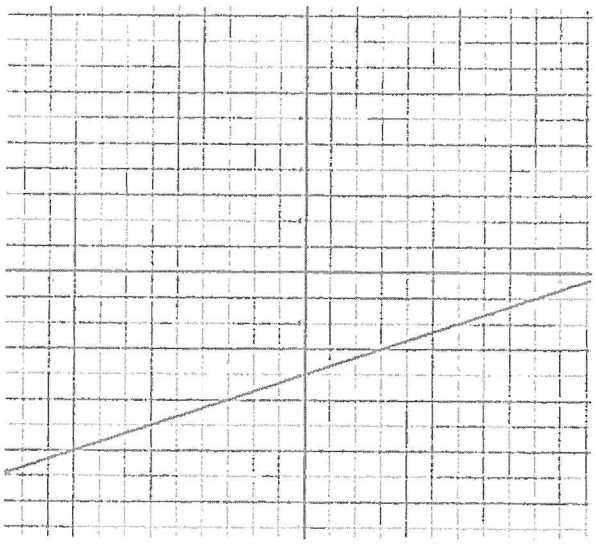
The slope of this line is positive 0.
A line with a slope of zero has no change in y, meaning the line is ***horizontal.***

49.) $y = 2x + 3$



$m = 2$
$b = 3$

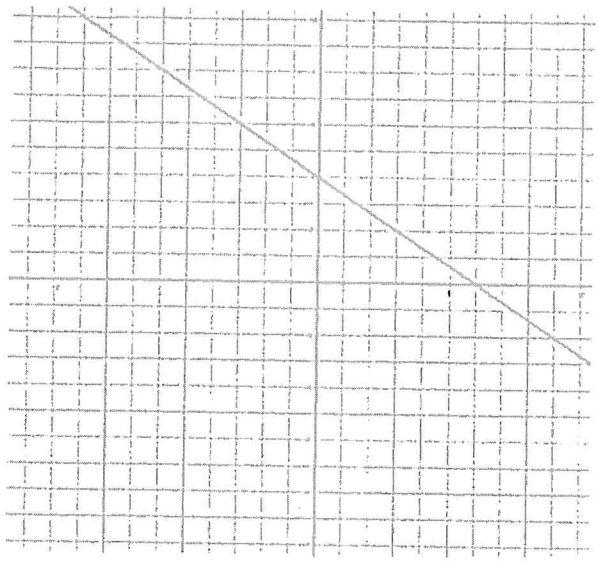
50.) $y = \frac{1}{3}x - 4$



$m = \frac{1}{3}$
$b = -4$

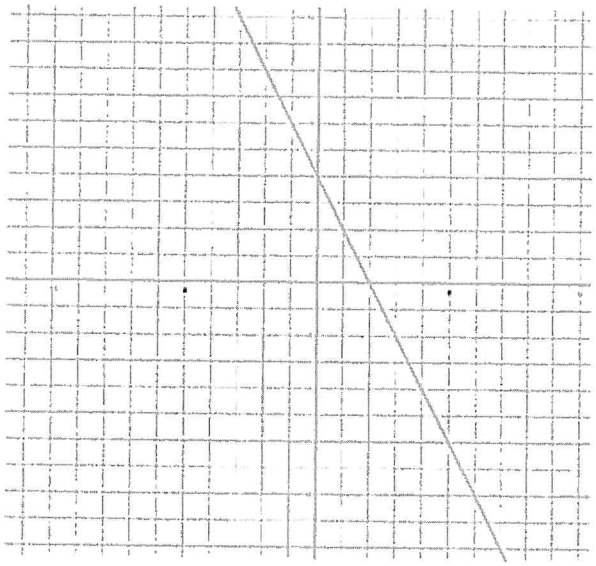
51.) $2x + 3y = 12$ $\quad y = -\frac{2}{3}x + 4$

52.) $-4x = 2y - 8$ $\quad y = -2x + 4$



$m = -\frac{2}{3}$

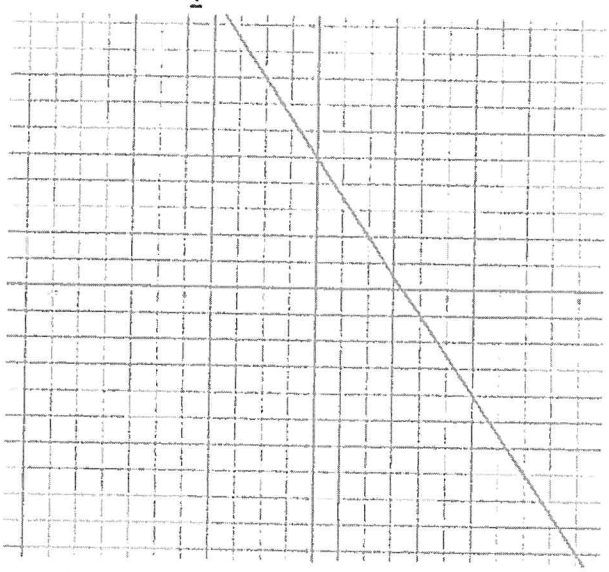
$b = 4$



$m = -2$

$b = 4$

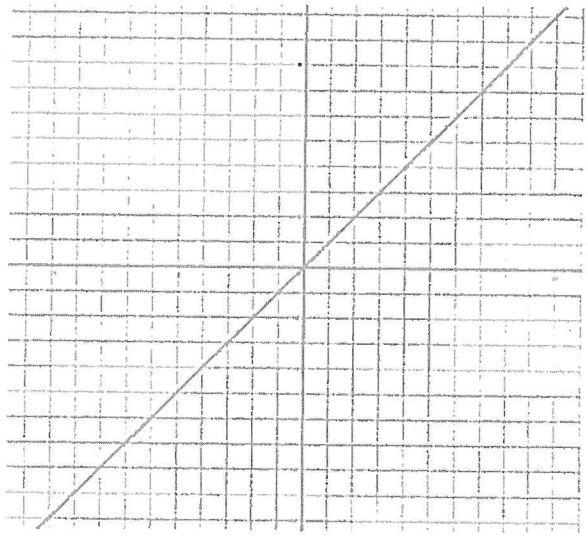
53.) $y = -\frac{3}{2}x + 5$



$m = -\frac{3}{2}$

$b = 5$

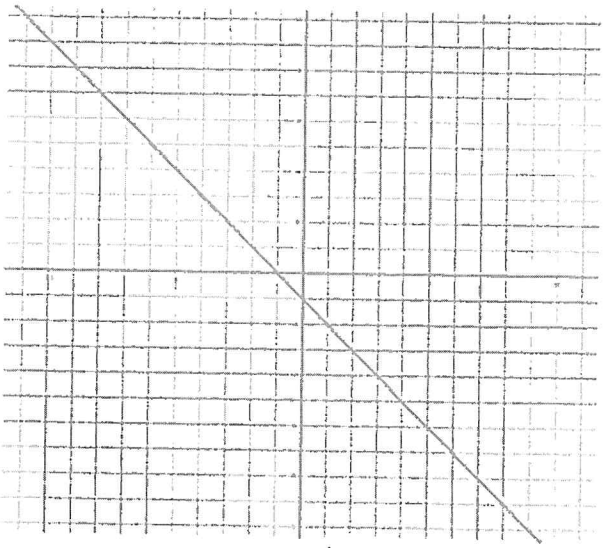
54.) $y = x$



$m = 1$

$b = 0$

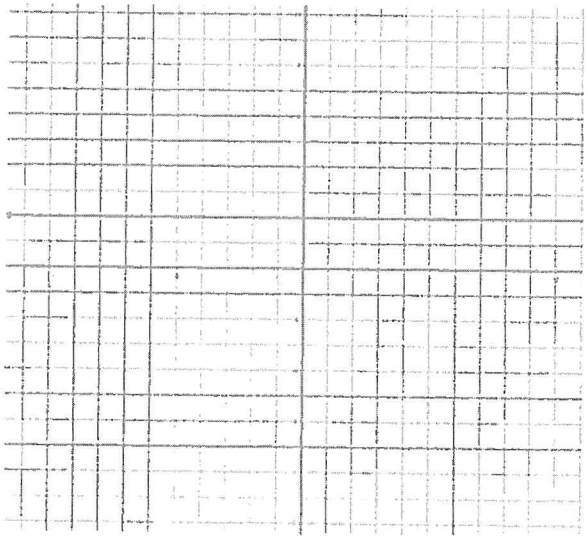
55.) $y = -x - 1$



$m = -1$

$b = -1$

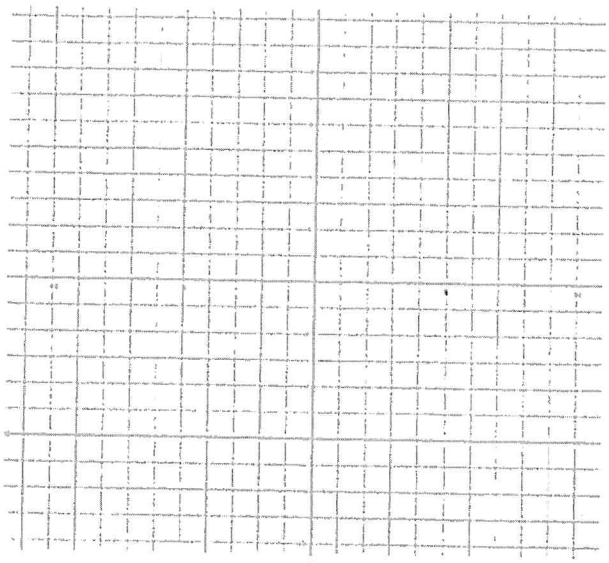
56.) $y = 2$



$m = 0$

$b = 2$

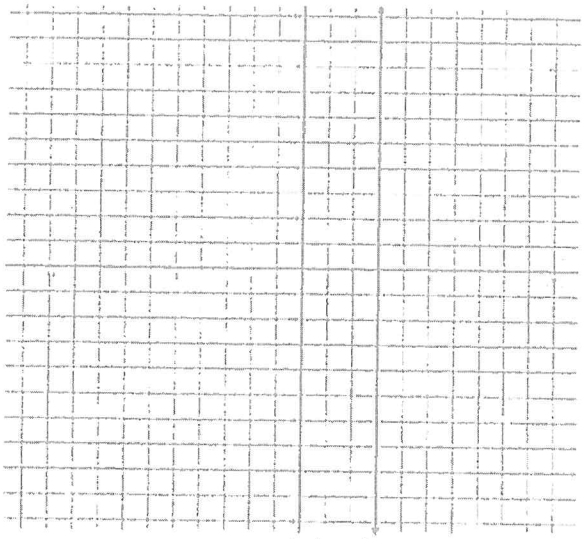
57.) $y = -6$



$m = 0$

$b = -6$

58.) $x = 3$



$m = undefined$

$b = none$