International Leadership Charter High School **Date: _____**

Algebra 1

Grade 9

Winter packet

Name: _____

Instructions:

This packet will be graded.

Please complete and submit this packet on January 3,2024

Solve the following exercises. Show all your work.

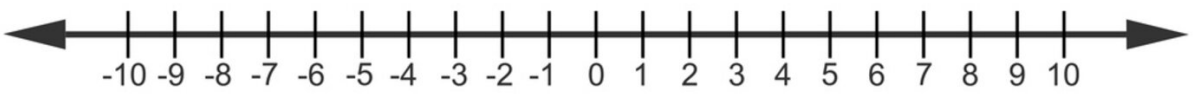
1.Evaluate the expression $-3 \cdot |x + y|$ for $x = -1$ and $y = 4$.

2.Use substitution or elimination method to solve the system of equations:

$$\begin{cases} \boldsymbol{2x - 3y = 0} \\ \boldsymbol{x + y = 5} \end{cases}$$

3.Solve the inequalities and graph the solution set.

$a)\ 3x - 6 \leq 15$



b) $6x - 7 > 2x + 17$

4.Write an equation of the line containing (2, -3)

a) parallel to $2y + x = 5$

b) perpendicular $2y + x = 5$

5. Tell whether the ordered pair is a solution of the equation.

a) $-7x - 4y = 1$;(- 3 , - 5)

b) $-5y - 6x = 0; (-6, 5)$

6. Solve the equations:

a) $3(x-5)=18x$

b) $5x-2(4x+3)=9$

7. At a bakery, one customer pays $5.67 for 3 bagels and 4 muffins. Another customer pays $6.70 for 5 bagels and 3 muffins. Find the cost in dollars of one bagel and the cost in y of one muffin at the bakery. (Write a system of equations and solve it)

8. Find the slope of the line that passes through the points.

a) (2, 1) and (8, 4)

b) (-2, 7) and (0, -1)

9. Write an equation of the line that passes through the point (- 2, - 6) and has a slope of 2.

10. Determine which lines, if any, are parallel or perpendicular. Explain why.

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

b) $y = \frac{3}{5}x + 1 \; and \; 5y = 3x - 2$

c) $y = 3x + 6 \; and \; 3x + y = 6$

11. Tell whether the ordered of pair is a solution of the inequality.

a) $4x - 7y > 28; (-2, 4)$

b) $\frac{2}{5}x + y \geq 2; (1,2)$

12. Tell whether the linear system has one solution, no solution, or infinitely solution.

a) $15x - 3y = 12$

$y = 5x - 4$

b) $4x - y = -4$

$-8x + 2y = 2$

13. The domain of a function $y = 12 - 2x \; is$ 0, 2, 3, 4, and 5. Make a table for a function, then identify the range of the function.

14. Tell whether the pairing is a function. If not, explain why.

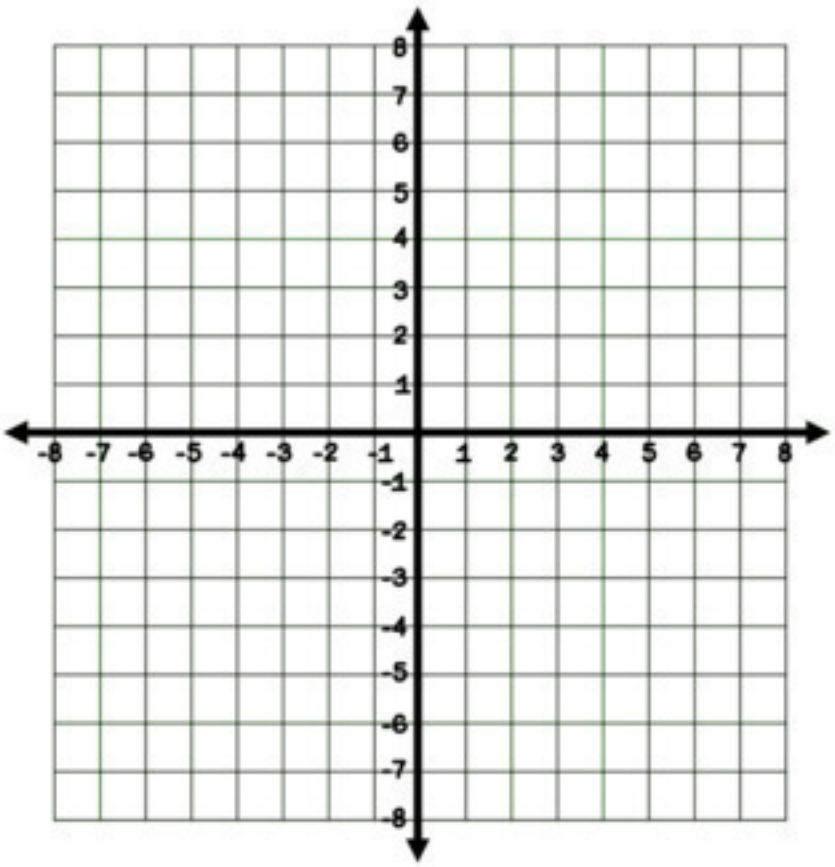
X	5	6	7	11
y	1	2	3	7

X	4	6	9	6
y	1	3	6	4

15. Graph the system of linear inequalities.

$$y < -2x + 3$$

$$y \geq x - 3$$



b) Is the ordered of pair (4, -1) a solution of the system? Explain your answer.