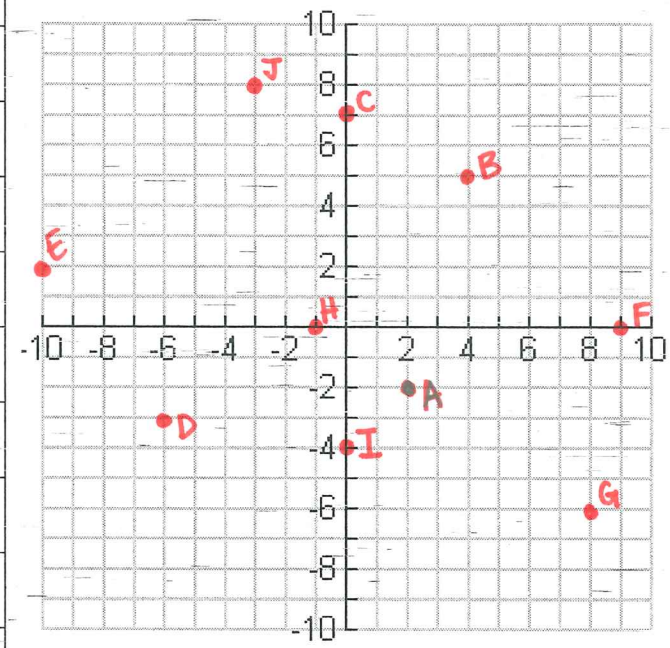
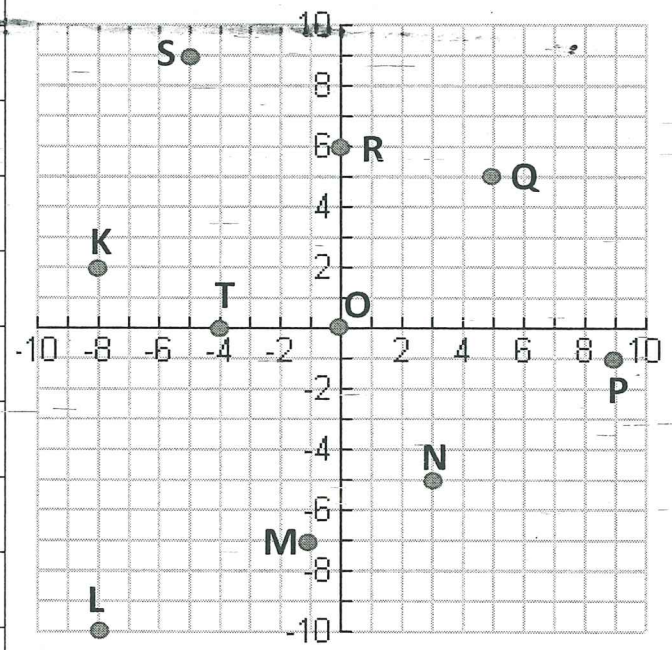
Key

I. **Plotting Points- Plot each of the points on the coordinate plane. Label each point with the corresponding letter.**

A. (2, -2)	
B. (4, 5)	
C. (0, 7)	
D. (-6, -3)	
E. (-10, 2)	
F. (9, 0)	
G. (8, -6)	
H. (-1, 0)	
I. (0, -4)	
J. (-3, 8)	

II. **Naming Points – In the spaces provided, write the correct coordinates of the point that corresponds with each letter.**

K. (-8,2)	
L. (-8,-10)	
M. (-1,-7)	
N. (3,-5)	
O. (0,0)	
P. (9,-1)	
Q. (5,5)	
R. (0,6)	
S. (-5,9)	
T. (-4,0)	

III. Simplify Expressions- Simplify each expression. Make sure to combine like terms!

1. $2^3 \bullet [3(5)+8\div 4]$ $2^3 \cdot [15+2]$ $2^3 \cdot [17]$ $8 \cdot [17] = \boxed{136}$	2. $-3p-4t-5t-2p$ $\boxed{-5p-9t}$
3. $8-(5-x)$ $8-5+x$ $\boxed{3+x}$ or $x+3$	4. $3(2x-3(x-1))$ $3(2x-3x+3)$ $3(-x+3)$ $\boxed{-3x+9}$

IV. Evaluate Expressions- Plug in the value given to evaluate each expression. Your answer should be a number!

5. $10(t^2+t)$ for $t=-5$ $10((-5)^2+(-5))$ $10(25-5)$ $10(20) = \boxed{200}$	6. $-5\lvert k+1\rvert$ for $k=-10$ $-5\lvert(-10)+1\rvert$ $-5\lvert-9\rvert$ $\boxed{-45}$
7. $x^2-4x-12$ for $x=-2$ $(-2)^2-4(-2)-12$ $4+8-12$ $12-12 = \boxed{0}$	8. $\dfrac{(x+y)^2}{x-y}$ for $x=-12, y=4$ $\dfrac{((-12)+(4))^2}{-4} = \dfrac{(-8)^2}{-4} = \dfrac{64}{-4} = \boxed{-16}$

V. Solve Equations- Solve each equation.

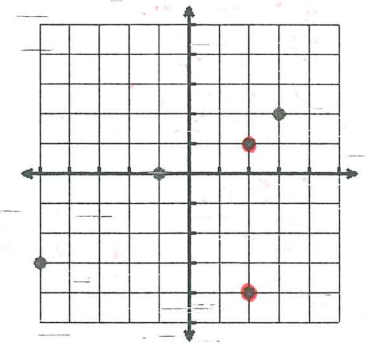
9. $5-v=3$ $-5 \quad -5$ $-v=-2$ $\dfrac{-v}{-1}=\dfrac{-2}{-1}$ $\boxed{v=2}$	10. $8m+1=7m-9$ $-7m \quad -7m$ $m+1=-9$ $-1 \quad -1$ $\boxed{m=-10}$
11. $-4(z+5)+2=14$ $-4z-20+2=14$ $-4z-18=14$ $+18 \quad +18$ $\dfrac{-4z}{-4}=\dfrac{32}{-4}$ $\boxed{z=-8}$	12. $-y+3y+7y=2y+14$ $9y=2y+14$ $-2y \quad -2y$ $\dfrac{7y}{7}=\dfrac{14}{7}$ $\boxed{y=2}$
13. $\dfrac{t}{27}=\dfrac{4}{9}$ $\dfrac{9t}{9}=\dfrac{108}{9}$ $\boxed{t=12}$	14. $-(x-1)+10=-3(x-3)$ $-x+1+10=-3x+9$ $-x+11=-3x+9$ $+x \quad +x$ $11=-2x+9$ $-9 \quad -9$ $\dfrac{2}{-2}=\dfrac{-2x}{-2}$ $\boxed{x=-1}$

VI. Determine if the Relation is a Function- circle YES if the relation is a function (the x-values do not repeat) and NO if the relation is not a function.

15. $\{(2,1),(0,4),(-3,1),(8,5)\}$

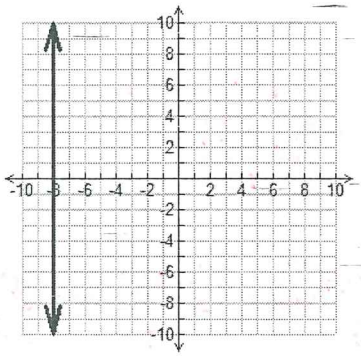
Function? YES or ___ NO

16.



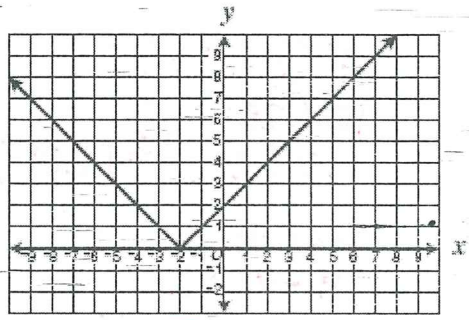
Function? ___ YES or NO

17.



Function? YES or NO

18.



Function? YES or NO

VII. Determine the Domain & Range of Each Relation.

23. $\{(5,-1),(8,2),(-4,3),(-4,-4)\}$

Domain: $\{-4,5,8\}$

Range: $\{-4,-1,2,3\}$

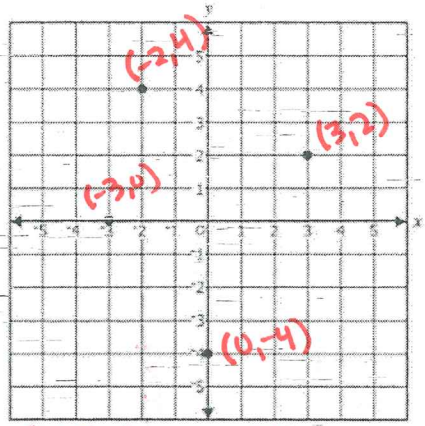
24.

X	-2	0	4	7
Y	6	-8	2	0

Domain: $\{-2,0,4,7\}$

Range: $\{-8,0,2,6\}$

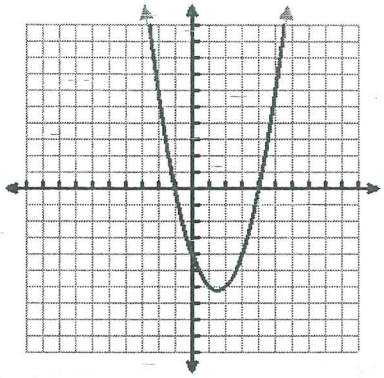
25.



Domain: $\{-2, 0, 3\}$

Range: $\{-4, 0, 2, 4\}$

26.



Domain: $\{x \mid x = \mathbb{R}\}$

Range: $\{y \mid y > -6\}$

VIII. Determine the X- & Y- Intercept(s)- Find the x- and y- intercept of the function. Intercepts should be written as ordered pairs.

27. $y = 3x + 5$

$y = 3x + 5$
$0 = 3x + 5$
$-5 \quad -5$
$\frac{-5}{3} = \frac{3x}{3}$ $\boxed{x = \frac{-5}{3}}$

$y = 3x + 5$
$y = 3(0) + 5$
$y = 0 + 5$
$\boxed{y = 5}$

X-Intercept(s): $(-\frac{5}{3}, 0)$

Y-Intercept: $(0, 5)$

28. $2x + 3y = 6$

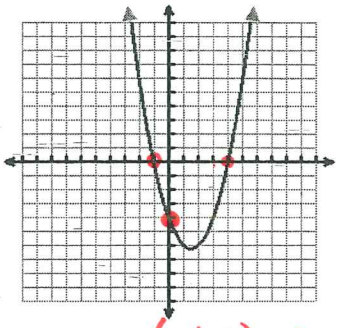
$2(0) + 3y = 6$
$0 + 3y = 6$
$\frac{3y}{3} = \frac{6}{3}$
$\boxed{y = 2}$

$2x + 3(0) = 6$
$2x + 0 = 6$
$\frac{2x}{2} = \frac{6}{2}$
$\boxed{x = 3}$

X-Intercept(s): $(3, 0)$

Y-Intercept: $(0, 2)$

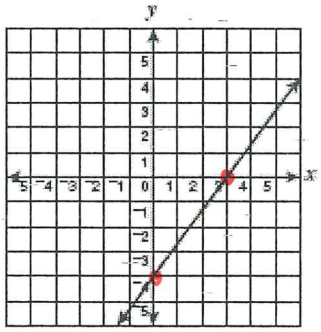
29.



X-Intercept(s): $(-1, 0) + (4, 0)$

Y-Intercept: $(0, -4)$

30.



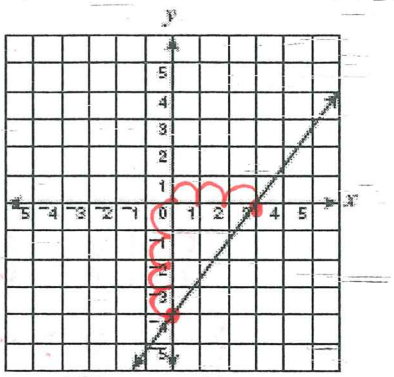
X-Intercept(s): $(3, 0)$

Y-Intercept: $(0, -4)$

IX. Determine the Slope of a Line- Find the slope of the line using the given information.

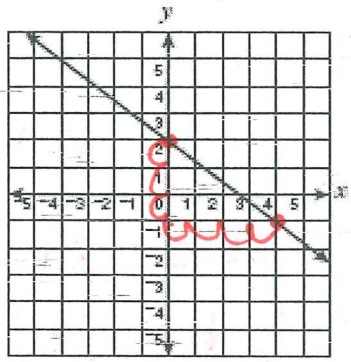
Remember: When given points, the slope formula is: $m = \frac{y_2 - y_1}{x_2 - x_1}$

31.



$m = \frac{4}{3}$

32.



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

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

$m = \frac{4}{3}$

34. $4x - 6y = 12$

$-4x \quad -4x$

$\frac{-6y}{-6} = \frac{-4x}{-6} + \frac{12}{-6}$

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

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

35. (5, 6) (9, 8)

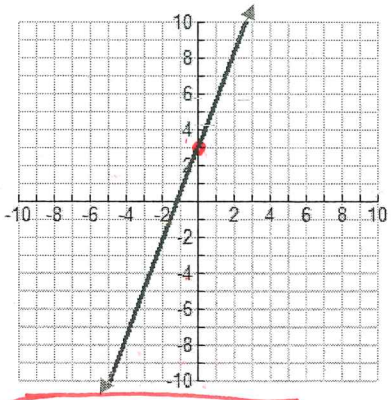
$m = \frac{8-6}{9-5} = \frac{2}{4} = \frac{1}{2}$

36. (-9, 13) (2, -10)

$m = \frac{-10-13}{2+9} = \frac{-23}{11}$

X. Write the Equation of a Line- Given the information provided, write the equation of the line in slope-intercept form (y = mx + b)

37.

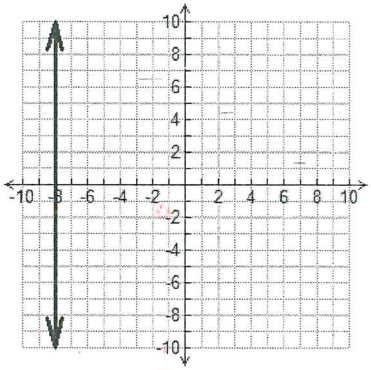


$m = \frac{5}{2}$

$b = 3$

$y = \frac{5}{2}x + 3$

38.



$x = -8$

39. The line passes through: (1, 2) (-1, -4)

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-4-2}{-1-1} = \frac{-6}{-2} = 3$

$y = mx + b$

$2 = (3)(1) + b$

$2 = 3 + b$

$-1 = b$

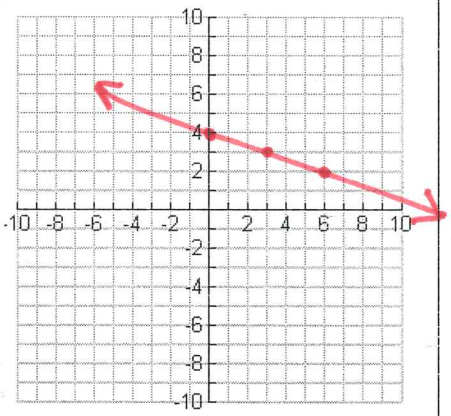
$\boxed{y = 3x - 1}$

40. The line has a slope of 3 and a y-intercept of -5.

$\boxed{y = 3x - 5}$

XI. Graph Lines- Graph each line on the coordinate plane provided. You should have at least 2 points on your graph.

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

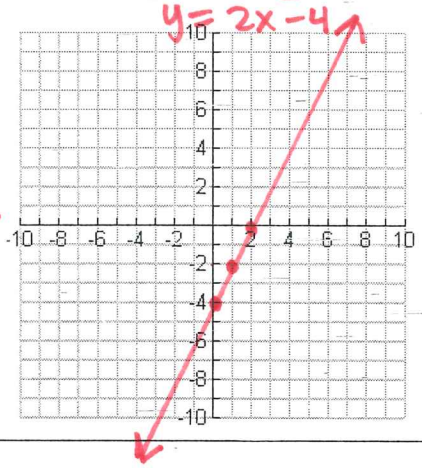


42. $4x - 2y = 8$

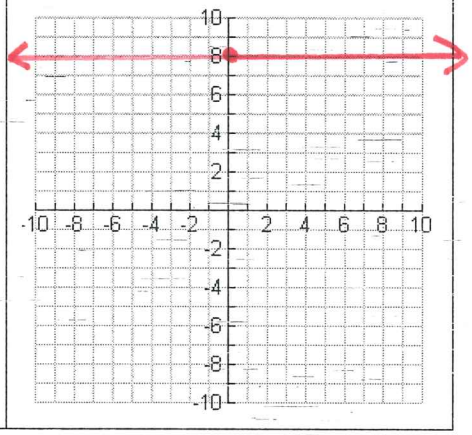
$-4x \quad -4x$

$\frac{-2y}{-2} = \frac{-4x + 8}{-2}$

$y = 2x - 4$

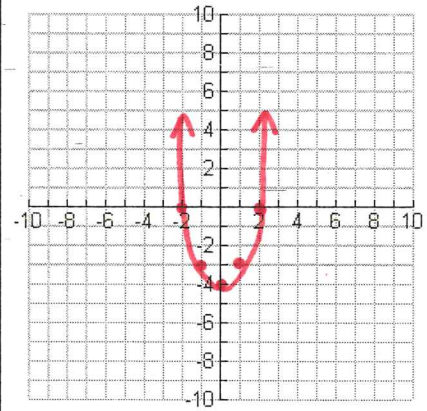


43. $y = 8$

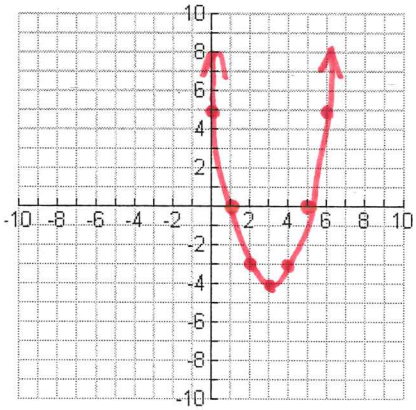


XII. Graph Quadratics- Graph each quadratic function on the coordinate plane provided. You should have at least 5 points on your graph. Graphs should be in the shape of a parabola!

47. $y = x^2 - 4$



48. $y = x^2 - 6x + 5$



49. $y = -2x^2$