Algebra RH
Graphing Linear Equations Review

Vocabulary:

coordinate plane	y-coordinate	x-intercept	perpendicular
x-axis (abscissa)	ordered pair	y-intercept	opposite reciprocal
y-axis (ordinate)	quadrants	slope	domain
x-coordinate	function	parallel	range

What should I be able to do?

- Know and understand the definition of a function and be able to determine if a set of ordered pairs, mapping diagram, table of values or a graph represents a function.
- Graph linear equations using 3 methods (table of values method, intercept method, slope-intercept method)
- Determine algebraically if a point is a solution to an equation
- Graph horizontal and vertical lines
- Find the slope of a line from a graph (rise/run)
- Determine the slope of a line using the slope formula
- Associate a line with a positive slope, negative slope, zero slope or undefined slope
- Determine if lines will intersect, be parallel or perpendicular
- Identify the slope and y-intercept when an equation is written in y = mx + b form
- Write the equation of a line in slope-intercept and point-slope form given a graph or written information
- Graph a linear function with a restricted domain and range

Equations and Formulas

x = a (equation of a vertical line)
y = b (equation of a horizontal line)

y = mx + b (slope-intercept form of a linear equation)
$y - y_1 = m(x - x_1)$ (point-slope form of a linear equation)

$m = \frac{y_2 - y_1}{x_2 - x_1}$ *or* $m = \frac{rise}{run}$ *or* $m = \frac{\Delta y}{\Delta x}$ (slope formula)

Practice Problems

Graph the following linear equations using a table of values.

1. y - 2 = x

2. y - 3x = -4 #2, use the domain [-2,5]

Graph the following linear equation using the intercept method.

3. 2(x – 2y – 6) = 0

Graph the following linear equations using the slope-intercept method.

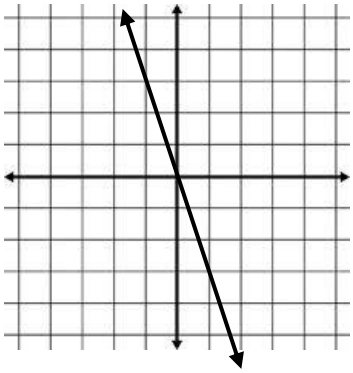
4. $x - 6 = 2y$ 5. $-x = y$ 6. $-x - 3y = 0$

On the same set of axes, graph the following horizontal and vertical lines.

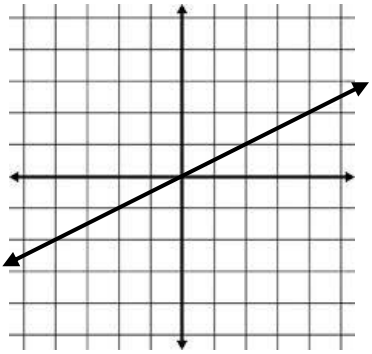
7. $x = -2$ 8. $y = 5$ 9. $x = 6$ 10. $y = -3$

11. Write an equation for each of the following lines

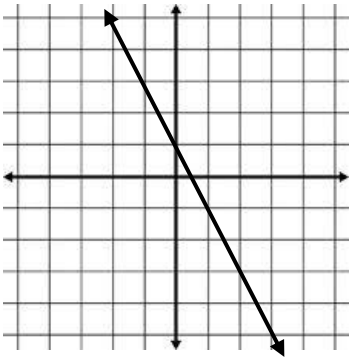
a.



b.



c.



12. Identify the slope and y-intercept of each equation.

a. $2y - 3x = 6$ b. $y = -5$ c. $\frac{1}{2}x = 2 - \frac{1}{4}y$

13. Find the slope of a line that runs through the following points.

a. (3,4) and (-2,14) b. (-6,-2) and (4,-2)

14. Find the value of p given the slope of a line is -4 and that line passes through (2,-4) and (6,p)

15. Write two equations for any two parallel lines.

    Write an equation of a line that is parallel to the y-axis

    Is the x-axis parallel or perpendicular to the y-axis?

    Determine if $2y - x = 6$ and $-2x - y - 4 = 0$ are parallel, perpendicular or neither.

16. Can all three methods of graphing be used to graph $y = \frac{2}{3}x$? Explain.
    Is the point (4.7, 3) on the line?

17. (a) Graph a graph of a line with an x-intercept of 2 and a y-intercept of -1.

    (b) What is the equation of this line?

18. Write the equation of a line that passes through the points (-1,1) and (3,-1).

19. Write the equation of a line that is perpendicular to the graph of $2x - y = 4$ and has an x-intercept of -4.

20. In interval notation, identify the domain and range of the linear equation shown at right.

    Domain: _____

    Range: _____