ALGEBRA II JOURNAL
Linear Equations

1. a) In a function, each _____ is paired with _____ .

   b) You can determine whether a <u>graph</u> is a function by using the _____ .

   c) You can determine whether a set of ordered pairs is a function if _____

   _____ .

2. a) The domain of a function is the set of _____ .

   b) The range of a function is the set of _____ .

3. a) The function notation "$f(x)=$" represents the same thing as _____ in regular notation.

   b) If you find $f(-5)$ and get a result of 8, what does that represent in terms of a graph? _____

   _____

4. Slope is defined to be _____ .

5. How can you most quickly find the slope of a line in each of the following situations?
   a) a graph_____

   b) given two points _____

   c) given an equation in slope-intercept form _____

6. Given a linear equation in standard form, the x-intercept can be found by _____
   while the y-intercept can be found by _____ .

7. The best way to graph a line in the form $Ax + By = C$ is _____
   _____ while the best way to graph a line in the form $y = mx + b$

   is _____ .

8. (a) When modeling a real-world situation which contain two sets of data, you should find its linear
       equation by _____ .

   (b) When modeling a real-world situation which contains an amount which varies over time and a
       fixed amount which does not change, you should find its linear equation by _____

       _____ .

9. (a) The r value given when performing a linear regression is called the _____
       _____ and is used to describe _____

       _____ .

   (b) The r^2 value given when performing a linear regression is called the _____
       _____ and is used to describe _____

       _____ .

10. When an x-coordinate is placed in a greatest integer function, the resulting y-coordinate is
    determined by finding _____ .

11. Given a piecewise function with 4 pieces, you would find $f(8)$ by using _____
    _____ to determine into which piece 8 should be substituted.

12. Important Rules, Formulas, Etc.
    List the following rules, formulas, or steps. <u>When giving formulas, be sure to indicate what each part of the formula represents</u>.

    <table>
    <tr><td colspan="2" align="center">Key</td></tr>
    <tr><td>$m=$</td></tr>
    <tr><td>$b=$</td></tr>
    </table>

    a) Slope-intercept form of a line _____

    b) Point-slope formula _____

    c) Slope and equation of a horizontal line _____

    d) Slope and equation of a vertical line_____

    e) Slope of perpendicular lines _____ Slope of parallel lines _____

    f) List the transformation rules for graphing and write an example ***equation*** of each ***by placing numbers*** in the proper location in the function $f(x) = |x|$.

Transformation	Rule	Example using $|x|$
Move down c units		
Move left c units		
Reflect over x-axis		
Change slope		
Move right c units		
Reflect over y-axis		
Move up c units		

    g) Graph each of the following: $f(x)=6$, $f(x)=x$, $f(x)=|x|$, and $f(x)=[x]$.

Attach the purple sheet of instructions for linear regression to this journal!