Integrated Math II Project: Graphing
Equations and Inequalities

Materials:

1. www.desmos.com

Description:

In this project you will have the opportunity to explore your creative side while still learning and practicing math. You will use the concepts of _Linear Equations, Exponential Equations, Quadratic Equations,_ and _Inequalities_ to create some kind of picture. Each of your drawings should have a unique design to it, it should be shaded using the inequalities, and have some meaning to it. Each picture will be required to have a minimum integration of 3 of each type of equation mentioned above as well as their respective inequalities for the shading.

Procedure:

On a separate sheet of paper create a basic layout of what you would like to create. Think along the lines of a very basic coloring sheet. Recall that you are required to use three types of equations only (Linear – straight lines, exponential – sort of stretched out J's or L's, and Quadratics – U's or upside down U's), but you may put other equations in as needed you just have to ask for the basic equations or explore them online. Take the project one line at a time and ask questions as you have them. You can share the project through Desmos with me at any time for help. Good Luck!

Project Due Date: _____

Project Notes

General Equations that you will use:

    Linear:

$$y = mx + b;$$
where:

    m = slope
    b = y-intercept

    Exponential :

$$y = ab^{(x\,-\,h)} + k$$
where:

    h = horizontal movement,
        - implies movement to the right
        + implies movement to the left
    k = vertical movement
        - implies movement down
        + implies movement up

    Quadratic:

$$y = a(x - h)^2 + k$$
where:

    h = horizontal movement,
        - implies movement to the right
        + implies movement to the left
    k = vertical movement
        - implies movement down
        + implies movement up

Inequalities: you are going to use the same equations as what you provided above, but change the sign to an inequality symbol ($<$, $>$, $\leq$, or $\geq$).

Parameters (AKA: Restrictions) on the equations will maintain the shading to a certain desired area. See the following link on the website:
https://www.youtube.com/watch?v=dnz_Ez5PlfI

Names: _____   **Date:** _____

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*** Attach this sheet with your final project when turning it in! ***

Equations		Total Points Received		Inequalities		Total Points Received
Linear Equations	*10 Points Per Line* Equation Form $y = mx + b$			**Linear Equations**	*10 Points Per Inequality* Repeat of the linear equations provided or additional linear inequalities w/ restrictions.	
Exponential Equations	*10 Points Per Line* Equation Form $y = a(b)^{x-h} + k$			**Exponential Equations**	*10 Points Per Inequality* Repeat of the exponential equations provided or additional exponential inequalities w/ restrictions.	
Quadratic Equations	*10 Points Per Line* Equation Form $y = a(x-h)^2 + k$			**Quadratic Equations**	*10 Points Per Inequality* Repeat of the quadratic equations provided or additional quadratic inequalities w/ restrictions.	

Final Grade	Total Points from Equations	Total Points from Inequalities	Total Points	Comments on your project:
	90 Pts	90 Pts	180 Pts	