DESMOS Graphing Art Project

1. You must create an electronic picture using the graphs of <u>at least 30 different equations</u> representing the functions named below.

2. This is an individual project.

3. Your work of art will be saved on DESMOS and emailed to me with your name and Period

4. In addition to the electronic submission, you must turn in the following handout.

5. Late submissions will result in a 30% deduction.

6. Your picture must include **at least one of each** of the following:

- A linear function (none vert/horiz)
- A horizontal/vertical line
- A quadratic function
- A cubic function
- An absolute value function
- A rational function

- An exponential
- A logarithmic function
- A radical (square root or cube root) function
- A conic section (circle, ellipse, or hyperbola)
- A trig. function

7. Your picture must include functions that show each of the kinds of transformations we have talked about:

- A vertical shift
- A horizontal shift
- A vertical compression

- A vertical stretch
- A reflection over x- or y-axis.

How to create your graph: BE SURE NOT TO CLOSE YOUR TAB AS YOU ARE WORKING!

1. Type www.desmos.com in as your web address or download the app.
2. Tap "Launch Calculator."
3. Save your progress and close your browser every time you stop working on your graph or move to another portable.
4. Create an account.
5. Type the equations of your functions into the expressions bar on the left. **Note**: In order to get a cube root or logarithm function, you must hit the "functions" button. You can get single points just by typing in the coordinates ( )
6. To move your graph view, drag or pinch and drag to zoom.
7. If you only want to show a part of your function, use {braces} to restrict your domain and/or range.
8. If you want a different color, hit the gear and then tap the colored circle to change it.
9. Save frequently by naming your graph and hitting the green disk on the upper left.
10. Once you are completely done with your graph be sure to save then hit the share button (green arrow in the upper right) and email it to turn it in.

Student: _____ Period: _____ Date: _____

After you finish your graph, complete and turn in the following:

Type of Function, conic	Sketch its general shape (Parent Function)	List your equation of this type(in function form if it's a function)
Linear (none vert./horiz)		
Horizontal/ Vertical line		
Quadratic		
Cubic		
Absolute value		
Radical (Square or cube root)		
Rational		
Exponential		
Logarithmic		
Conic (circle, ellipse, hyperbola)		
Trig. (sine, cosine, tan,..)		
Other		

Fill out the following for your transformations. *Example: For Vertical Translation, y = |x| + 1, translated up 1 unit*

Type of Transformation	List ONE of your equations that demonstrates this transformation	Describe the transformation (from the parent graph) in words
Vertical translation		
Horizontal translation		
Vertical stretch		
Vertical compression		
A reflection over x- or y-axis		

Scoring Guide for Algebra 2H Graphing Project
General
___ At least 30 functions(and conic sections) graphed that create a picture **(4 points)**
___ Creativity **(8 points)**
Required Types of Functions and Conic Sections are Present On Graph & Described in Table.
Functions must be in Function Form and Conics must be in Standard Form: (2 pts each)
___ A linear function
___ A horizontal or vertical line
___ A quadratic function
___ A cubic function
___ An absolute value function
___ A radical function
___ A rational function
___ An exponential function
___ A logarithmic function
___ A trig. function
___ A Conic section
Required Transformations Present & Correctly Described in Table (2 pts each):
___ A horizontal shift
___ A vertical shift
___ A vertical compression
___ A vertical stretch
___ A reflection over the x-axis or y-axis
Exceeds basic requirement (2 pt):
___ Graph includes another type of function

Total _____ points out of 46