Mathematician _____

Picture Project

Objective: To show to that you can graph and write equations of conic sections and functions in a coordinate plane without the use of technology.

Part 1

1. Create a design on graph paper (cartoon character, sports object, etc. – Be creative!). Your design can use conic sections (circle, ellipse, hyperbola, parabola) or functions (linear, absolute value, cubic, cube root, rational, exponential, logarithmic). Your design should fill the entire grid space.

   You are NOT allowed to copy any project already created (i.e., one you find on the internet) as this will be an Honor Code violation. However, you may take a regular picture from online (for example, Munch's "The Scream"), and try to simulate it.

2. Complete the provided table by filling in the information for each graph in your design. Vertical and horizontal lines will be on a separate table. Show all work on a separate sheet of paper. Number your work according to the equation number. Work must be neat, organized, and easy to read.

3. Turn in your design, equation tables, and work by **Thursday, May 3**.

   Projects submitted late will be penalized one letter grade for each day that they are late. If you are not present at school on the due date, see that your project is submitted early or that someone else brings it for you, or it will be counted late. This is a required project and counts as a test grade.

Good Luck, Enjoy, and Be Creative! ☺

Rubric:

Part 1

Scale	**Criteria**	**Possible Points**
Draft Design	All conics and functions are drawn accurately. Design fills the entire grid space. Equations are incorporated into design. few some most all	10
Variety of Equations	Uses 7 types of equations at least twice, excluding horizontal and vertical lines. 1 2 3 4 5 6 7	20
Correctness of Equations	Equations match draft. Equations are accurate. All work is shown.	30
Number of Equations	At least 30 equations, excluding horizontal and vertical lines. 1-20 20-24 25-29 30+	10

Circle
Ellipse
Hyperbola
Parabola
Linear
Abs. Value
Cubic
Cube Root
Rational
Exponential
Logarithmic

Mathematician _____

Equation Chart

(excluding vertical and horizontal lines)

Equation #	Type of Equation	What it Creates in Design	Equation
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			

Equation #	Type of Equation	What it Creates in Figure	Equation
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			

Equation #	Type of Equation	What it Creates in Figure	Equation

Vertical and Horizontal Lines Equation Chart

Equation	Restrictions

Equation	Restrictions