Algebra II Honors – Conic Sections Graphing Project 40 points DUE: WEDNESDAY 5/25(A) and 5/26(B)

Task: Using the website <u>https://www.desmos.com/</u> create a picture using conic sections and any other graphs you desire.

Directions:

- Go to <u>https://www.desmos.com/</u> and create an account.
- Create a picture using at *least* one of *each* of the Conics Sections listed:
 - Parabola both forms: $(x-h)^2 = 4p(y-k)$ AND $(y-k)^2 = 4p(x-h)$
 - o Circle
 - o Ellipse

• Hyperbola- both forms: $\frac{(x-h)^2}{a^2} - \frac{(y-k)^2}{b^2} = 1 \text{ AND } \frac{(y-k)^2}{a^2} - \frac{(x-h)^2}{b^2} = 1$

Bottom Line: Your picture must contain at least SIX equations.

You may, but are not required to, also use:

- Linear functions
- o Absolute Value functions
- Polynomial functions
- Square Root/Cube Root Functions
- Exponential/Logarithmic Functions
- Semicircle Functions
- Trigonometric Functions
- Any other function from the Library of Functions

You may need to restrict the domain or range of each curve to create your desired picture.

- Print your project from desmos.com. HIGHLIGHT the 6 required equations.
- Display your project (PICTURE AND ALL EQUATIONS) in a creative fashion on a 14" by 22" poster board (half a typical poster board). Make sure to put your name on the FRONT of your project.
- PRINT 1 Copy of "Conics Project Rubric." (see page 2 below) DO NOT FILL OUT!
- PRINT <u>2</u> Copies of the Peer Review WKST (see page 3 below) DO NOT FILL OUT!

Every element in your picture must be represented by an equation.

Have fun and be creative! Up to 5 bonus points will be awarded to those students who go above and beyond.

Conics Project Rubric

Name:_____



Peer Review WKST

| Project Completed By: | Evaluator's Name: |
|-----------------------|-------------------|
| | |

Requirements

| Did the student include at <i>least</i> one of each required conic section? Are the equations graphed accurately? (Check | | | <i>t</i> one of re the (Chec | Did the student include a domain for every equation listed? Are the domains accurate? Make comments below if the | |
|--|---|-----|------------------------------------|--|----------------------------|
| yes | or no.) | | | | student has made an error. |
| | | YES | NO | | |
| | Parabola: | | | | |
| | $(x-h)^2 = 4p(y-k)$ | | | | |
| | Parabola: | | | | |
| | $\left(y-k\right)^2 = 4p\left(x-h\right)$ | | | | |
| | Circle | | | | |
| | Ellipse | | | | |
| | Hyperbola: | | | | |
| | $\frac{(x-h)^2}{a^2} - \frac{(y-k)^2}{b^2} = 1$ | | | | |
| | Hyperbola: | | | | |
| | $\frac{(y-k)^{2}}{a^{2}} - \frac{(x-h)^{2}}{b^{2}} = 1$ | | | | |
| I | | | | | |

Aesthetic Nature

Comment with your opinion of the aesthetic nature of the project you are grading.

Grader's Recommendations

Are there any revisions to be made to make this project better? How can the student improve their project to earn bonus points?

Very Creative Examples <u>Side Note</u>: These examples below may NOT include all the requirements of this project. These samples are purely for ideas ONLY!

