ALGEBRA 2 – CONICS SECTIONS PROJECT

Here is your task for the conic sections unit:

Make a picture which incorporates conic sections

That's it. No catch. No tricks. Your job is use the Desmos calculator as a tool to graph equations, forming them into a picture of your choosing. This is your chance to combine your keen mathematical skills with your creative side. This project has very few restrictions, but here are the guidelines you need to follow for picture creation and submission. You will work in teams of **TWO.**

- Use the Desmos online calculator to create your picture. This will allow you to save your work as you go along, then share your final product as a link. You will want to consider restricting domains and/or ranges of your equations.
- Your final drawing must incorporate the 4 conic sections in a meaningful way. You may also consider using lines and graphs of other functions you have learned (or not learned yet!).
- When your picture is complete on Desmos click the SHARE button **copy the link** and send it **AND** your non-linear screenshot to **sumertom@aaps.k12.mi.us**.

How you will be graded. This project will be worth a total of 100 points. The attached rubric breaks down the point values into 3 main categories:

- Conic section graph with interval notations in folders by graph type - using all 4 conic graphs. 85 points
- Math work: to demonstrate your understanding of systems of equations involving conics, locate instances in your picture where graphs intersect, and solve algebraically for their intersection. Provide a screen capture of the area, with intersections "clicked" on Desmos. For this part, you must complete two systems:
    - A line intersecting with a conic
    - A conic intersecting with a conic. 15 points
- TURN IN - email a link to your graph along with the attached screenshot of your non linear system. (SHIFT-COMMAND-4 on Mac, Print screen button on PC)

CONIC SECTION PROJECT – RUBRIC Name:_____

Part 1 – The Product - **MULTIPLIED BY 3.75 - FOR 75 PTS**

The final product features all 4 conic sections prominently

5 4 3 2 1 0

Use of domain restrictions

5 4 3 2 1 0

Sophistication of use of conics in your picture

5 4 3 2 1 0

Overall effect

5 4 3 2 1 0

Part 2 – Conic systems - **MULTIPLIED BY 1.5 - FOR 15 PTS**

A linear-quadratic system relating to the picture is shown and solved.

5 4 3 2 1 0

A quadratic-quadratic system relating to the picture is shown and solved.

5 4 3 2 1 0