Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cartesian Calculator Project ($C^{2}P$)

 **Directions:** Create at least ten unique functions that form the shape of a real-life object, drawing, or picture. Use at least one of each of the following types of curves: {polynomial, trigonometric, exponential, logarithmic, and conic} **(50 points)**. All of these functions must be solved explicitly for $y$ (**10 points**). After you have created a sketch of the functions, create a finalized product on graph paper of your overall design (**15 points)**. Color your finalized product **(5 points)**. Graph your design using your graphing calculator (**15 points**). Write the domain of each function below in interval notation (**5 points**).

 **Calculator Input:**

|  |  |
| --- | --- |
| TI-84 | TI-nspire |
| $$y\_{1}=\left(-x^{2}+4\right)\left(x>-2\right)\left(x<2\right)$$To type the $<$ or $>$ symbols, press $2ND$ then press $MATH$. | $$f1\left(x\right)=piecewise\left(-x^{2}+4,x>-2 and x<2\right)$$To type the < or > symbols, press $ctrl$ then press $=$. |

 **Functions:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Function** | **Domain** | **Function** | **Domain** |
| $$y=$$ |  | $$y=$$ |  |
| $$y=$$ |  | $$y=$$ |  |
| $$y=$$ |  | $$y=$$ |  |
| $$y=$$ |  | $$y=$$ |  |
| $$y=$$ |  | $$y=$$ |  |
| $$y=$$ |  | $$y=$$ |  |
| $$y=$$ |  | $$y=$$ |  |
| $$y=$$ |  | $$y=$$ |  |
| $$y=$$ |  | $$y=$$ |  |
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| $$y=$$ |  | $$y=$$ |  |

