GRAPHING ART PROJECT

Directions/Requirements

1. Using graph paper, draw a picture containing graphs of lines, absolute values, parabolas, circles, semicircles, arcs, etc. The main object in the drawing must fill up a major portion of the supplied graph paper. The drawing must be approved by your teacher.

2. Your drawing must include at least three non-vertical/non-horizontal lines, one function parabola, one non-function parabola, two circles or non-parabolic conics, one function absolute value, one non-function absolute value and two sinusoidal, exponential, or higher degree polynomial.

3. You must shade at least two areas of your drawing and include the correct inequalities on your equation list sheet (see #5).

4. Domain and range restrictions may be determined by solving systems of equations or by using the graphics calculator to graph the functions and find points of intersection. If these points are not integers, specify them to the nearest hundredth.

5. An equation list sheet must be completed. Equations that have to be “rearranged” for the TI-83/84 program (see #6) must be stated in their original graphing form on the equation sheet. This also applies to non-function graphs. In order to obtain the points given for the equations/inequalities listed, they must be in the correct form with correct D/R restrictions on the list sheet and appear correctly in the TI-83/84 program.

6. You will also type your drawing as a program in the TI-83/84 calculator using the following window: [-23.5,23.5] by [-15.5,15.5]. Program labels (Lbl) for each equation must coincide with the equation sheet number of that equation.

7. You must hand in two copies of your drawing. One a rough copy of your final picture with the different parts numbered to coincide with the equation list sheet numbers. The other is an un-numbered final copy that has been outlined in a black fine-tip marker.

8. You will be granted three consults about your project. For each additional consult you will be charged a 2 point deduction. A consult is defined as a 10 minute or less session to answer questions specific to your project or resolve problems associated with your project. There will also be 2 designated workdays (1 before school and 1 after school that are free). Errors that can be resolved during class time that are less than 2-3 minutes will not be considered a consult. Meetings before or after school no matter what length will be considered consults. Be wise in scheduling your consults.

Evaluation

You will receive an evaluation sheet to fill out. The project is worth 100 points. A maximum deduction of 5 points will be made for missing requirements (1 point for each requirement not met).

Timetable

1. Teacher approval of the drawing. Due on _______________________.
2. A rough draft picture with graph pieces numbered and at least ten of the equations determined. Due on _______________________.
3. The final drawing, all equations in proper form, the TI-83/84 program and the completed evaluation sheet. Due on _______________________.
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Hints/Trouble Shooting

1. The drawing must contain one main object filling up the majority of the dot graph paper. The entire dot paper graph represents your calculator screen. Objects drawn too small barely show up on the calculator. The graph paper can be turned sideways for longer objects. When put in the calculator, the screen will be turned sideways to look at the picture. You must still write the equations using the longer x-axis.

2. “My program got deleted.” will not be an acceptable excuse for late work. Back up your program on at least two friends’ calculators.

3. Trouble shading; check that they have the lower boundary first in the shade command. Also check that both boundaries have the same restrictions.

4. Do not do your equation list sheet until you have your program finished. I do not want them coming back messy from erasing. Do the equations on a piece of paper and save the equation sheet for your final copy.

5. Many of the errors in your program are caused by too many or too little parenthesis.

6. Graph an equation in the “y =” section of their calculator first to see if it is correct before entering it into your program.