

CIRCLES FOR A FACE PROJECT

GOAL: To draw a face using semi-circle equations.

BENEFIT: Earn a three-point credit towards a quiz with the lowest score. (This is an end of term lifesaver!)

DUE DATE: Monday, March 28, 2011 (No extensions.)

RULES:

At this juncture, you only need to key in semi-circle equations since we have only been using the calculator for one-variable equations with the “Y-function.”

1. Create a chart of your own semi-circle equations. You should have at least 10 equations.
2. Explain how you manipulated the equations to create the face you designed.
Example: Elaborate on how you made it look sad, grouchy, or happy; how you made it wink; how you made the eyes bigger or smaller; and/or how you added glasses or other accessories on the face.
3. Provide a reasonable sketch of the face with your equations.
4. The following is Mrs. Crespo’s chart of the equations she created to make the female face. You can use this as a guide.

Function	Drawing
$Y_1 = -\sqrt{-8x^2 + 90}$	chin
$Y_2 = \sqrt{-6x^2 + 69 - 2}$	head
$Y_3 = -\sqrt{-(x - 1.5)^2 + .75}$	right upper lid
$Y_4 = -\sqrt{-(x + 1.5)^2 + .75}$	left upper lid
$Y_5 = -\sqrt{-(x - 2)^2 + 1.5} + 0.9$	right lower lid
$Y_6 = -\sqrt{-(x + 2)^2 + 1.5} + 0.9$	left lower lid
$Y_7 = -\sqrt{-x^2 + 0.4} - 3.5$	nose
$Y_8 = -\sqrt{-x^4 + 1} - 5.5$	mouth
$Y_9 = \sqrt{-(x + 1.9)^2 + 1} + 1$	left eyebrow
$Y_{10} = \sqrt{-(x - 1.9)^2 + 1} + 1$	right eyebrow



TI-89 Sketch of a Female Face

Questions you may want to ponder on:

- a. What’s the difference between the equations that draw specific parts on the right and left?
- b. What makes the chin upward and the head downward?
- c. What makes the nose bigger or smaller?