Assignment: Excel – VBA – Parametric Grapher

Objective: Make an interactive parametric graphing utility through the use of VBA programming in Excel.

Directions:

- Inputs
  - An arbitrary function (examples: $\begin{cases} x(t) = \cos(t) \\ y(t) = \sin(t) \end{cases}$, $\begin{cases} x(t) = .1t\cos(t) \\ y(t) = .1t\sin(t) \end{cases}$)
  - xmin
  - xmax
  - ymin (If a number is entered it should use the number, if it is blank Excel should automatically adjust this.)
  - ymax (If a number is entered it should use the number, if it is blank Excel should automatically adjust this.)
  - tmin
  - tmax
- Output
  - Graph the function using an xyscatterplot
  - The graph must update if any changes are made to any of the inputs
- Other things to include
  - Make a comment in the macro that you are the author.
  - Include appropriate comments and organization (use of tab) in the VBA code.
  - In a cell in the spreadsheet, write a short description of what the spreadsheet does and that you are the author.
- Email
  - The file must to be named *YourlastnameParametric*.xls (no spaces)
  - The subject must be "*Yourlastname – ParametricB2*" or "*Yourlastname – ParametricB3*"
  - Email it to evans@scienceandmathacademy.com
  - You should cc yourself a copy
- Extra features
  - Make the number of points that are graphed an input.
  - Make the type of graph an option (line-connected xyscatterplot or curve-connected xyscatterplot)
  - If an equation is entered incorrectly a warning is given.

Grading Rubric

- Correctly emailed it to Mr. Evans and used the correct subject name and file name. (Note: If you do not follow the email instructions, Mr. Evans may not receive your assignment or will not see it when downloading it from my email.) *2 points*
- When you enter the function the x & y values of the function are calculated. *15 points*
- The xmin and xmax automatically adjust the x-axis properly. *5 points*
- The ymin and ymax automatically adjust the y-axis properly. *5 points*
- All values change as you change t-min and t-max
- Appropriate use of comments are used in the code. *3 points*
- Overall functioning of the project. *5 points*