SLOPE FIELD - TI 83 Plus

Introduction

This program plots the slope field for the differential equation in the form $\frac{dy}{dx} = f(x,y)$.

If you have not used one of the programs posted on this website before, you should read through the information in the Intro to Programming section first.

If you have a TI Connectivity Cable, you can download the program SLOPEF.8xp

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The Program

```
:ClrDraw                {ClrDraw is in DRAW under Draw}
:FnOff                  {FnOff is in VARS under Y-Vars}
:7*(Xmax-Xmin)/83→H     {Xmax, Xmin are in VARS under Window} {The arrow is STO}
:7*(Ymax-Ymin)/55→K     {Ymax, Ymin are in VARS under Window}
:1/(0.4*H)^2→A
:1/(0.4*K)^2→B
:Xmin+0.5*H→X           {X is X,T button}
:Ymin+0.5*K→Z
:1→L                    {The 1 is a one}
:Lbl 1                  {Lbl is in PRGM under CTL}
:1→J
:Z→Y
:Lbl 2
:Y1→T                   {Y1 is in VARS under Y-VARS}
:1/√(A+B*T^2)→C         {√ is the square root button.}
:T*C→S
:Line(X-C,Y-S,X+C,Y+S)  {Line is in DRAW under Draw}
:Z+J*K→Y
:IS>(J,8)               {IS> if in PRGM under CTL}
:Goto 2                 {Goto is in PRGM under CTL}
:X+H→X
:IS>(L,12)
:Goto 1
```

Running the Program

You will need to enter a function $f(x,y)$ into Y_1 and adjust the WINDOW accordingly before running the program. You can use the X,T button for X and the ALPHA button for Y.