SLOPE FIELDS WITH THE TI-89/92/Voyage

Your TI-89 has the capability to draw slope fields. Follow the directions below to draw the slope field of the antiderivative of $f'(x) = 2x$.

(i) Press the `MODE` key and select `DIFF EQUATIONS` for the Graph mode in the dialog box that appears.

(ii) Display the `Y=` editor and move your cursor to the line y1′ =. Enter y1′ = 2t. Note: you use t instead of x as the independent variable in Differential Equations mode.

(iii) Within the `Y=` editor type $\diamond|$. A `GRAPH FORMATS` dialog box should appear. Set:
Coordinates = RECT
Grid = OFF
Axes = ON
Leading Cursor = OFF
Labels = OFF
Solution Method = RK, and
Fields = SLPFLD

(iv) Display the Window Editor and set:
t0 = 0
tmax = 2
tstep = .1
tplot = 0
xmin = -.2
xmax = 2
xscl = 1
ymin = -2
ymax = 2
xscl = 1.
ncurves = 0
diftol = .001
fldres = 20

(iv) Display the Graph screen.

To draw the graphs of the antiderivatives that satisfy $f(0) = 0$ and $f(1) = 1$:

(i) From the Graph screen that displays the slope field select F8.

(ii) Move the cursor to the point $(0, 0)$ and press `ENTER`.

(v) Select F8.

(iv) Move the cursor to the point $(1, 1)$ and press `ENTER`.

You can also set the initial condition in the `Y=` editor. Just set $yi1 = 0$ or $yi1 = 1$, for example. Setting your initial value in this manner allows you to use the TRACE function on your function.