Using Grapher on Macs to draw Slope Fields.

Suppose that we want a computer generated slope field for the differential equation \( y' = y - t \)

1. Go to a Mac that’s not too old and find Grapher under the Applications -> Utilities Folder. Double-click to start it. Select 2D.

2. Under the Equation menu, select “New Equation From Template”. Choose “Vector Field” and “Explicit Cartesian”.

3. You will see the following formula bar:
4. In the blank spot on the top (where the cursor is in the picture) put a 1. In the second spot, put the formula for $y'$ (in this example it is $y-x$). Notice that you should use an $x$ rather than a $t$.

5. Hit return and you should see the slope field.
To Draw A Solution Curve to the DE.

6. Under the Equation Menu, go to “New Equation from Palette”. Select “Differential Equation” and choose “1st order implicit”

7. You will see:

8. You will need to enter both the DE and an initial condition, as in the next screenshot. In this screenshot we have entered the DE \( y' = y - x \) and the initial condition \( y(0) = -0.5 \)
9. Hit return, and you should see the solution curve. In the next screen shot, the solution curve is drawn on top of the slope field.