Problem M3 #1

\[ y' = ty \]

Perform the following tasks:

a) Print out the direction field for the differential equation with the display window defined by \( t \in [-5, 5] \) and \( y \in [-5, 5] \). You might consider increasing the number of field points to 25 in the `dfield` window setting dialog box. On this printout, sketch with a pencil as best as you can the solution curves through the initial points \((t_0, y_0) = (0, 0), (-2, 0), (-3, 0), (0, 1)\) and \((4, 0)\). Remember that the solution curves must be tangent to the direction lines at each point.

b) Use `dfield` to plot the same solution curves to check your accuracy. Turn in both versions.

(Hint: if you use the java script version of `dfield`, in order to input the initial conditions, you have to go into your browser’s menu bar and look for “Solution” and then “Keyboard Input of Initial Value”.)