

Euler's Method (TI-92)

This program plots solutions to the differential equation

$$\frac{dy}{dx} = f(x, y).$$

The function $f(x, y)$ is input by the user during the running of the program.

```

:euler()
:Prgm
:setMode("Graph", "FUNCTION")
:PlotsOff
:FnOff
:ClrDraw
:ClrGraph
:ClrIO
:Local x, y, h, u, v, p
:Request "Enter f(x, y) =", ff
:Input "Initial x =", x
:Input "Initial y =", y
:Input "Stepsize =", h
:Text "Press ON to stop"
:Define f(x, y) = Func
:expr(ff)
:EndFunc
:Lbl p
:x + h → u
:y + h * f(x, y) → v
:Line x, y, u, v
:u → x
:v → y
:Goto p
:EndPrgm

```

To see the solution curves superimposed on the slope field, comment out the lines :ClrDraw and :ClrGraph by putting @ in front of them. (@ is found under the Control menu or by typing **2nd** x.) Run slope() followed by euler().