Program for Time Series (TI-92)

This program plots solutions $x(t)$, $y(t)$ to the system of differential equations

\[
\frac{dx}{dt} = f(x, y) \\
\frac{dy}{dt} = g(x, y)
\]

The functions $f(x, y)$ and $g(x, y)$ are input during the running of the program; the window must be set beforehand.

 insurg(1)
 >Prgm
 >setMode(“Graph”, “FUNCTION”)
 >PlotsOff
 >ClrDraw
 >ClrG R a h
 >ClrIO
 >FnOff
 >Local $x, y, t, h, u, v, w$
 >Request “Enter $f(x, y) =$”, $f den$
 >Request “Enter $g(x, y) =$”, $f num$
 >Input “Initial $x =$”, $x$
 >Input “Initial $y =$”, $y$
 >Input “Step size =”, $h$
 >Text “Press ON to stop”
 >Define $f(x, y) =$ Func
 >expr($f den$)
 >EndFunc
 >Define $g(x, y) =$ Func
 >expr($f num$)
 >EndFunc
 >0 → $t$
 >Lbl $p$
 >$x + h * f(x, y) → u$
 >$y + h * g(x, y) → v$
 >$t + h → w$
 >Line $t, x, w, u$
 >Line $t, y, w, v$
 >$u → x$
 >$v → y$
 >$w → t$
 >Goto $p$
 >EndPrgm