

Slope Field Program (TI-82)

This program draws the slope field for the differential equation $\frac{dy}{dx} = f(x, y)$.

Name=SLOPES	<i>Where To Find The Commands</i>
:ClrDraw	2nd Draw
:FnOff	2nd Y-VARS, On/Off,
:7(X _{max} - X _{min})/83 → H	VARS, Window; → is on STO key.
:7(Y _{max} - Y _{min})/55 → K	
:1/(0.4H) ² → A	
:1/(0.4K) ² → B	
:X _{min} + 0.5H → X	
:Y _{min} + 0.5K → Z	
:1 → I	
:Lbl P	Prgm
:1 → J	
:Z → Y	
:Lbl Q	
:Y ₁ → T	
:1/√(A + B * T ²) → C	
:T * C → S	
:X → U	
:Y → V	
:Line(U - C, V - S, U + C, V + S)	2nd Draw
:V + K → Y	
:IS > (J, 8)	
:Goto Q	Prgm
:U + H → X	
:IS > (I, 12)	Prgm
:Goto P	Prgm

To run this program:

1. Enter $\frac{dy}{dx} = f(x, y)$ as $Y_1 = f(X, Y)$.
2. Choose an appropriate WINDOW.
3. Run the program.
4. To get rid of previously drawn slope field, press "ClrDraw" (from the DRAW menu) or change the WINDOW.