

Differential equations on the ClassPad 330A+.

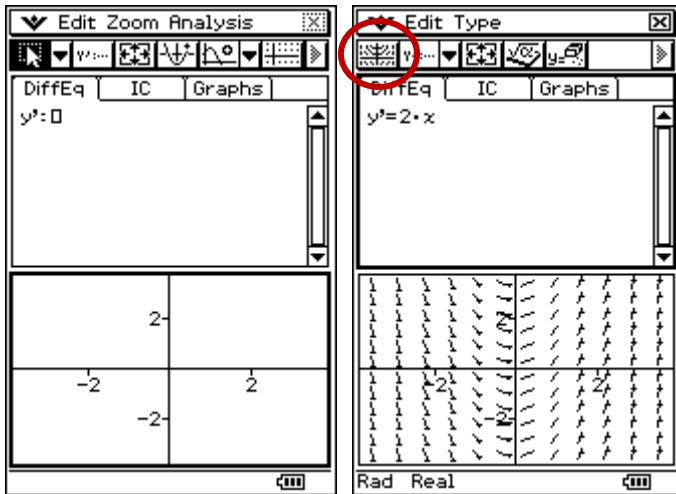
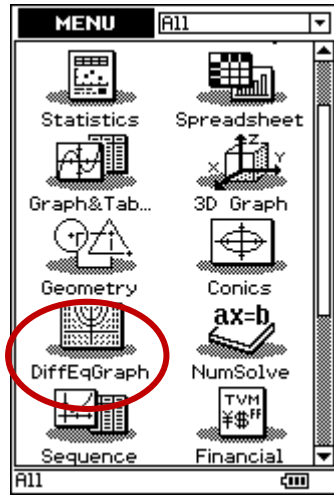
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A differential equation is an equation that involves the derivatives of a function as well as the function itself.

From the Main Menu...enter the **DiffEgraph** icon

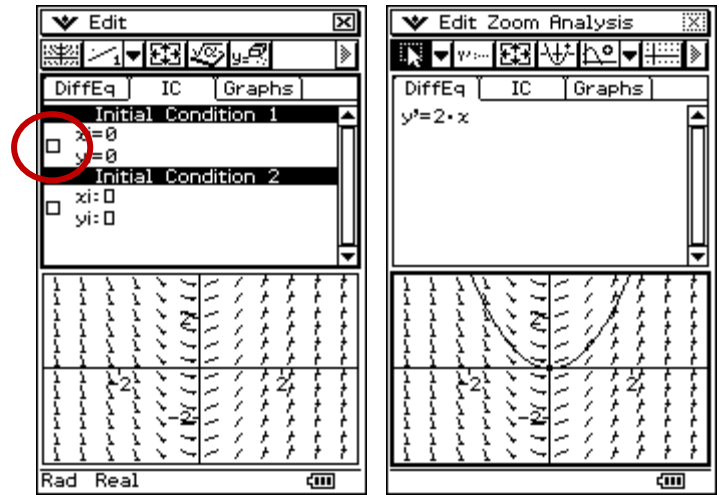
Example 1: Suppose you want to view the possible solutions of:

$$\frac{dy}{dx} = 2x, \text{ with the initial conditions } (0, 0)$$

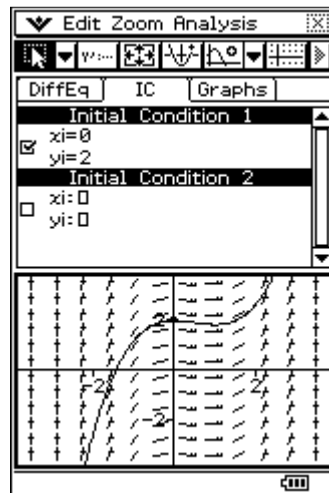
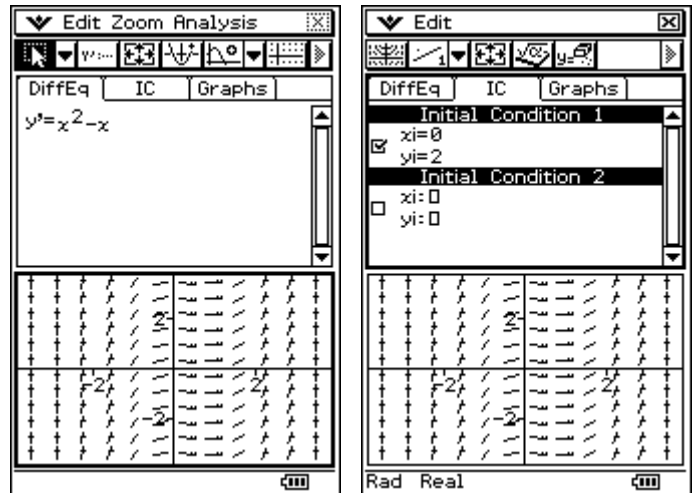


Type in the expression '2x', on the left of the working box [□]. Tap the stylus over the **directional field** icon positioned on the top left of the screen (circled). The ClassPad gives a picture of the gradient at coordinate points. This **directional field** is a graphical representation of the solutions to this first-order differential equation. It is achieved without solving the differential equation analytically. The representation may be used to qualitatively visualize solutions, or to numerically approximate the solutions.

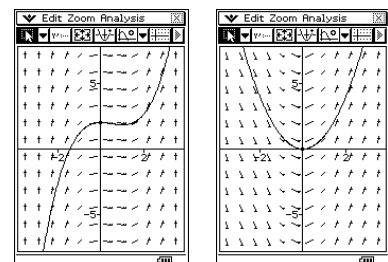
With the initial conditions entered $x_i = 0, y_i = 0$ and placing a tick in the box by tapping the stylus in the small box [□] on the left (circled) in the IC window, the unique solution is drawn over the directional field.



Example 2: $\frac{dy}{dx} = x^2 - x$, initial conditions (0, 2)



Resizing gives a full screen view on the ClassPad.



For further tips, more helpful information and software support visit our websites

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