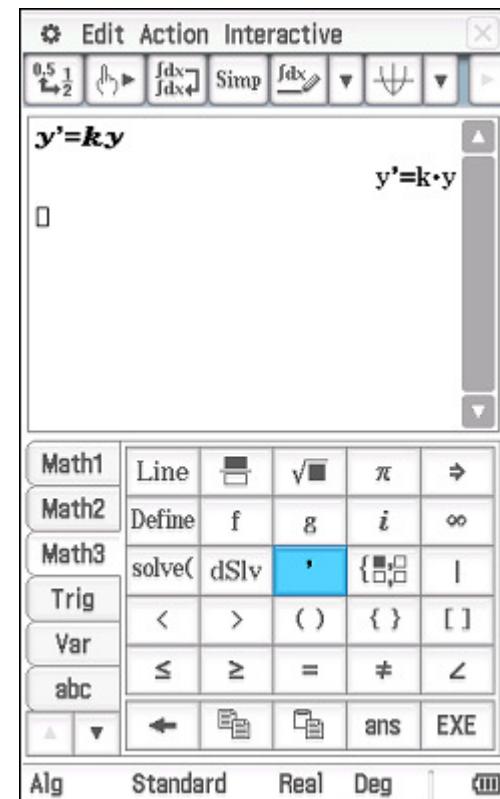


The number of people, y , is such that $y' = ky$. Originally there were 420 people. 2 weeks later this number had increased to 500.

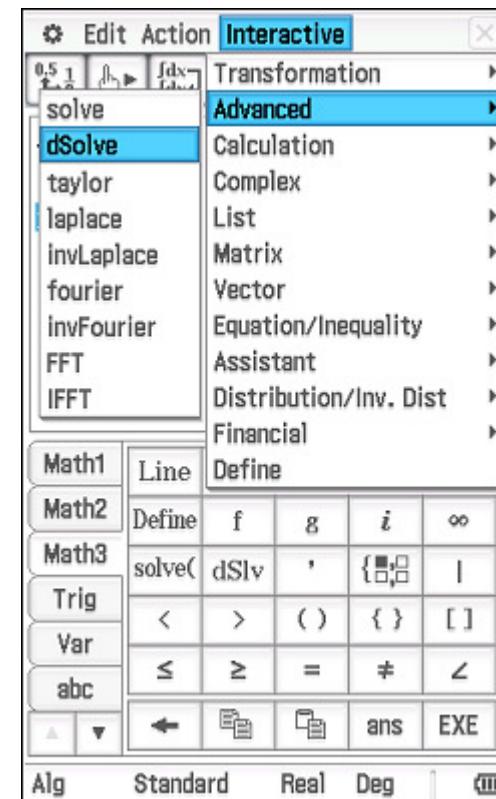
Determine k .

Enter the equation $y' = ky$ using the Math3 keyboard.



The screenshot shows the ClassPad II Math3 keyboard. In the equation entry field, the equation $y' = k \cdot y$ is entered. The Math3 keyboard is selected, and the numeric keys are visible at the bottom.

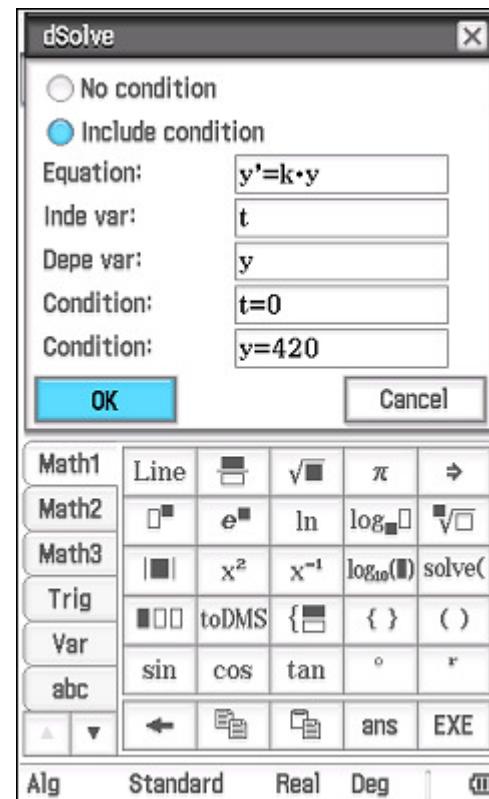
Select the equation and tap **Interactive**, **Advanced**, **dSolve**.



The screenshot shows the ClassPad II menu. The **Interactive** tab is selected. Under the **Advanced** category, the **dSolve** option is highlighted. The Math3 keyboard is visible at the bottom.

Tap **Include condition**.

Enter the data and tap **OK**.



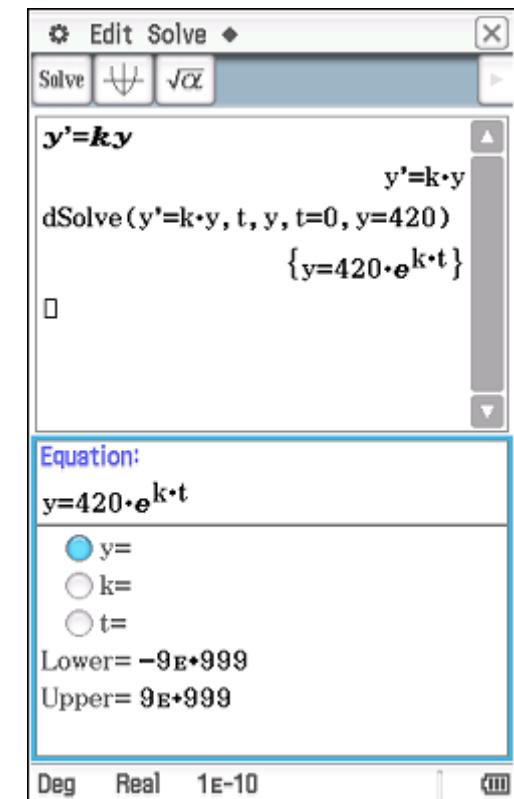
The screenshot shows the **dSolve** dialog box. The **Include condition** radio button is selected. The equation $y' = k \cdot y$ is entered in the **Equation** field. The independent variable t is selected in the **Inde var** field. The dependent variable y is selected in the **Depe var** field. The condition $t=0$ is entered in the **Condition** field. The condition $y=420$ is entered in the **Condition** field. The **OK** button is highlighted.

A solution is returned.

Open **NumSolve** in the bottom half of the screen.

Drag the solution into the equation entry area.

Tap **EXE**.



The screenshot shows the **NumSolve** dialog box. The equation $y' = k \cdot y$ is entered. The command $dSolve(y' = k \cdot y, t, y, t=0, y=420)$ is entered in the command line. The solution $\{y=420 \cdot e^{k \cdot t}\}$ is displayed. The **Equation** field shows the equation $y=420 \cdot e^{k \cdot t}$. The **Lower** and **Upper** fields are set to -9×10^9 and 9×10^9 respectively. The **Real** and **Deg** buttons are selected at the bottom.

Enter the values $y = 500$ when $t = 2$ and solve for k .

How many people are expected to have the illness after 5 weeks?

Change $t = 5$ and solve for y .

Change $y = 1000$ and solve for t .

How long until 1000 people have the illness?

Change $y = 1000$ and solve for t .

Close NumSolve and tap **Edit, Clear All Variables** in Main.

(This clears the values assigned to the variables y , k and t in NumSolve.)

