

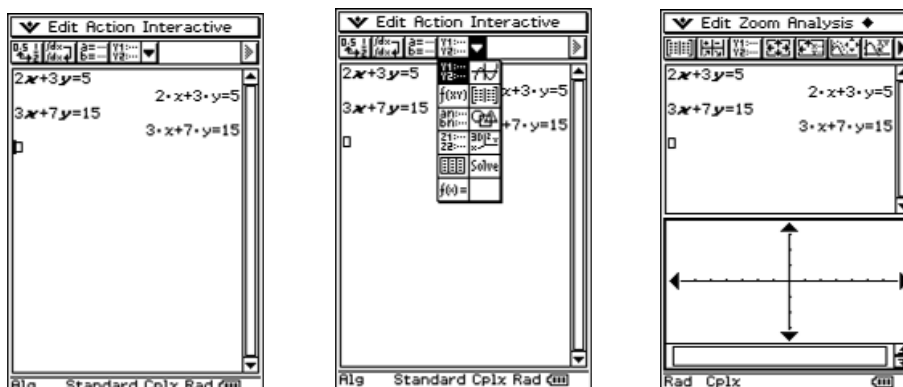
Solving Linear Equations: Part 2

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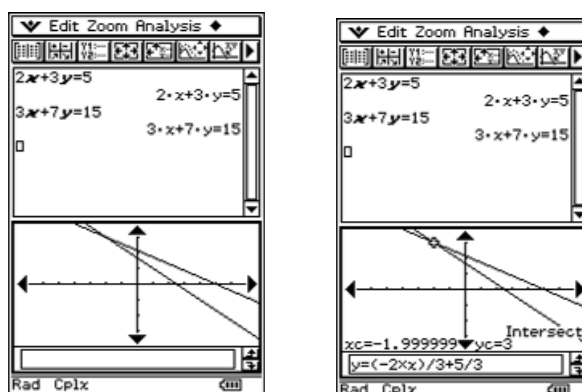
Casio ClassPad 300 & ClassPad Manager Software

Suppose you wanted to solve the two equations $2x + 3y = 5$ and $3x - 7y = 15$ simultaneously, i.e. you wanted to find all pairs (x,y) of values which satisfied both equations. If we interpret this problem graphically, we know that each equation defines a line in the x,y -plane and the solution we want is the point of intersection of the two lines. The ClassPad makes solving this problem very easy.

Open the Main application and enter the first equation and then enter the second equation. Your screen should look like the screen capture on the left below. Then tap the "triangle" and tap the graph icon shown in the middle screen capture below. Your screen should now look like the rightmost screen capture below. You may need to do a **Zoom – Quick Initialize** to get the exact screen shown in the screen capture.



Now comes the fun part. Simply select each equation in turn and drag it to the graphing window. Your screen should look like the first of the screen captures below. Use **Analysis – G-Solve – Intersect** in the graphing window and your screen should look like the second screen capture below.



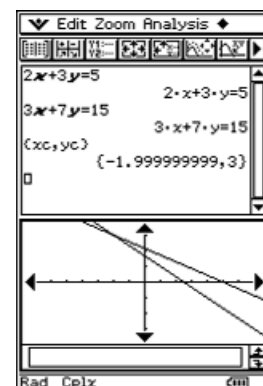
The ClassPad has solved the equations for you, although not quite exactly. The actual x value at the point of intersection is -2 .

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(continued)

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Note that you can "import" the x and y values of the point of intersection into the Main window. If you type **xc**, you will get the x -value and if you type **yc**, you will get the y -value. This is illustrated in the screen capture at the right.



Finally, what happens if the system of equations has no solution as is the case with:

$$x + 2y = 4 \text{ and } 2x + 4y = 10$$

If we use the method outlined above, we get first the screen capture on the left, in which the lines certainly seem to be parallel. This is confirmed, when we use **Analysis – G-Solve – Intersect**, which produces the screen capture on the right.

