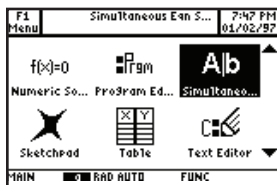# Simultaneous Equation Solver App

This App is capable of calculating solutions to linear systems of up to 30 variables. The systems can contain both numeric and symbolic coefficients, and the App will determine if there is a unique solution, no solution, or an infinite number of solutions.

1

To enter the Simultaneous Equation Solver App, press the APPS key, highlight "Simultaneous," and press ENTER.

2

Select "3: New. . ." by using the down arrow key and ENTER or by pressing 3.
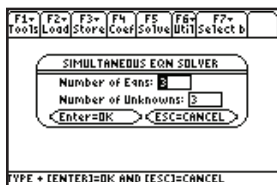
3

Using the example below, enter the number of equations and unknowns. Once the number of equations is entered by pressing 3 ENTER, the calculator assumes a square system, and the number of unknowns is populated.
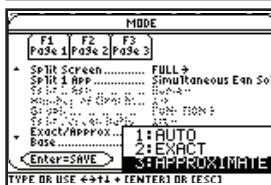$1x - 2y + 7z = 5$
$2x - 5y + 7z = 3$
$6x + 4y + 2z = 1$
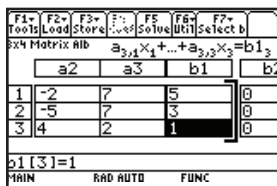
4

Type each coefficient, followed by ENTER. Be sure to use the (-) key vs. the subtraction key.
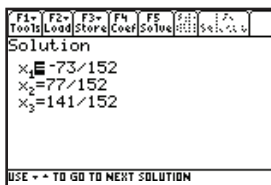
5

To find the solution to the system, press F5 "Solve."

6

If the solution on the screen is not in a desirable form (fraction vs. decimal), press MODE, F2, and arrow down to the "Exact/Approx" field. Use the right arrow key to activate choices, and select the appropriate one. Press ENTER to change your solution.
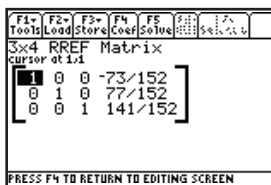
7

To find the reduced row echelon form of the solution matrix, press F5 "Solve." To toggle between the two forms, press F5.

8

To see the residuals, or to change any other of the setup options (cursor movement on the coefficient matrix, tolerance level, etc.), press F1 "Tools," arrow down to "9. Format," press ENTER, and use the down arrow key to select the appropriate field. Use the right arrow key to activate the options. Press ENTER to change any of the defaults.