



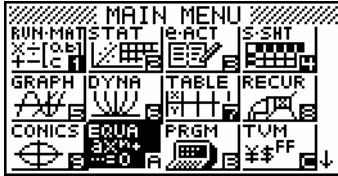
CASIO eLearning Activities



Solving Systems of Equations

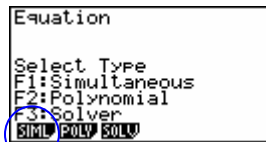
Example: Solve $5x + 7y = 10$
 $2x - 3y = 2$

1) **MENU**

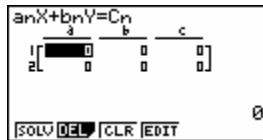


2) Go to **EQUA** and **EXE**.

3) Push **F1** for **Simultaneous**.



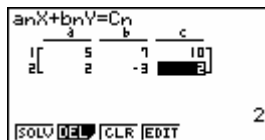
4) Push **F1** for **Number of Unknowns** (or click on the number 2 at the bottom of the screen). You are looking for 2 unknowns, x and y . The next screen will be where you will type in the coefficients of x and y . (You can use **F2** for equations with 3 unknowns.)



5) Place the equation in $Ax + By = C$. Type in the coefficients. The line will automatically wrap to the second line.

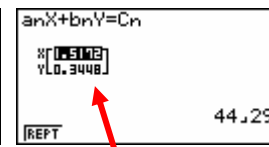
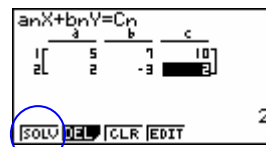
$$\begin{aligned} 5x + 7y &= 10 \\ 2x - 3y &= 2 \end{aligned}$$

Type **5** **EXE** **7** **EXE** **1** **0** **EXE** **2** **EXE** **-** **3** **EXE** **2** **EXE**



6) Push **F1** for **solve** and your answers will appear.

1.5172, and 0.3448



7) Push **F1** to repeat the work for another equation.

Practice Problems

1) $3x + 5y = -4$
 $2x - 3y = 29$

2) $z + 2y - 3z = 50$
 $2x + y + 2z = 3$
 $2x - 5y + 4z = -79$

3) $x + y = 4$
 $2x + 2y = 8$

4. $3x + y = 12$
 $6x + 2y = 20$

Solutions

(7, -5)

(4, 11, -8)

Ma ERROR***
Same line - Infinitely many solutions

Ma ERROR***
Parallel lines – No solutions

****Ma Error*** may either be coincident lines or parallel lines. If one line is a multiple of the other for all three numbers, you have coinciding lines. If the coefficients of the x and y are multiplied by the same number for the second line but the constant is not, you have parallel lines.

Practice: Solve the following problems on the calculator. Be sure to **set the equations up in standard form** and enter coefficients of x and y carefully. If no coefficient is there, remember that it is assumed to be "1". Also watch for signs. The values you see in the solution will be in the same order that you have them in the equations, x then y . (** indicates you need to rearrange the equations to standard form.*)

1. $3x + 3y = 12$
 $5x - 2y = 8$

6. $5x + 2y = 10$
 $4x - 2y = 8$

*11. $4x = 3y - 8$
 $5y + 7 = 2x$

2. $2x - 7y = 10$
 $4x - 14y = 8$

*7. $x + 2y = 5$
 $6y + x = 9$

*12. $x = 3y + 4$
 $3x - 5y = 9$

3. $2x + 5y = 3$
 $-x + 3y = -7$

8. $2x - y = -7$
 $3x - y = -8$

13. $3x + 5y = -6$
 $5x + 3y = -10$

*4. $y = -2x$
 $5x = 2 - 3y$

9. $3x - y = 7$
 $6x - 2y = 14$

*14. $5x = y - 6$
 $x = y - 2$

5. $x + y = 10$
 $6x + 5y = 50$

10. $-3x - 4y = 12$
 $4x + 3y = 20$

15. $-2x + 4y = -10$
 $2x + 3y = 31$