

Chapter 3 / Investigation 16

Solving systems of linear equations

Investigation 16 is to be done without using a calculator, but all the results of solving systems of linear equations can be checked on one.

Solve the following simultaneous equations.

a
$$\begin{cases} 4x + 3y = 18 \\ 7x - 4y = 13 \end{cases}$$

b
$$\begin{cases} 2x - 5y = 4 \\ -6x + 15y = 3 \end{cases}$$

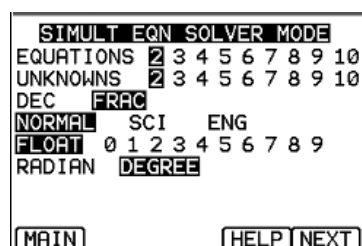
c
$$\begin{cases} 10x - 4y = 3 \\ -2x + \frac{4}{5}y = -\frac{3}{5} \end{cases}$$

Press **[APPS]** :PlySmlt2.

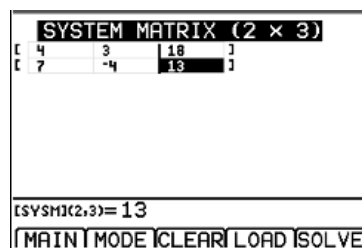
Press **[enter]** and select 2:SIMULTANEOUS EQN SOLVER.

You are solving 2 equations with 2 unknowns.

Press **[f5]** NEXT.

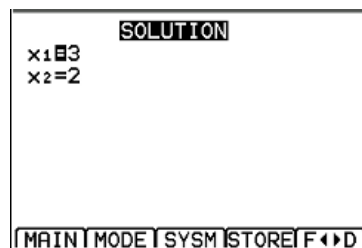


Enter to coefficients 4, 3, 18 and 7, -4, 13 into the matrix.



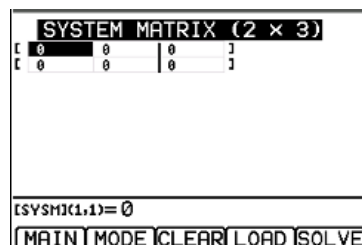
Press **[f5]** SOLVE.

The calculator displays the solution $x = 3$ and $y = 2$



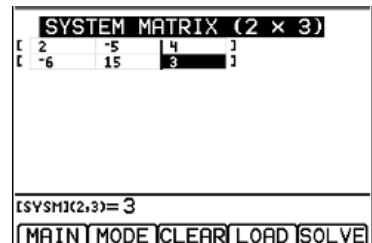
Press **[f3]** SYSM.

Press **[f3]** CLEAR.



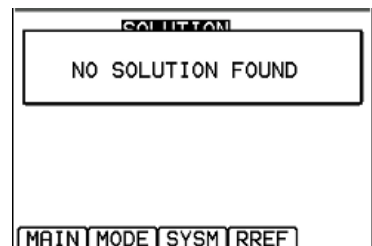
Chapter 3 / **Investigation 16****Solving systems of linear equations**

Enter to coefficients 2, -5, 4 and -6, 15, 3 into the matrix.



Press [f5] SOLVE.

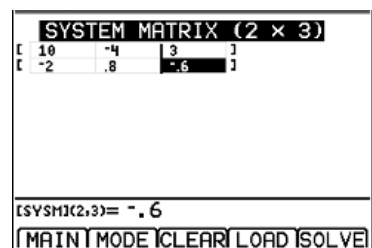
The calculator displays 'no solution found'.



Press [f3] SYSM.

Press [f3] CLEAR.

Enter to coefficients 10, -4, 3 and -2, $4 \div 5$, $-3 \div 5$ into the matrix.



Press [f5] SOLVE.

The solution is shown as $x = \frac{3}{10} + \frac{2}{5}y$.

There are infinitely many solutions as the lines coincide.

