

Technology Activity

(Use with Lesson 8-2)

Solving Systems of Equations

You can use the symbolic manipulation features of a TI-92 to solve a system of equations by the method of substitution.

Example


Use substitution to solve the system of equations.

$$3x + 9y = -4$$







$$-2x + \frac{1}{5}y = 3$$

Enter:    


Display the home screen and clear the entry line.

 1

Select the solve(command.

3x  9y   4  x  

Solve the first equation for x.

 1

Select the solve(command.





 2x  y  5  3  y 

Enter the second equation.

 K   

Substitute the expression for x in the second equation and solve for y.

The display shows that $y = 5/93$.

Enter:    

Highlight and paste the expression for x on the entry line.

 K   

Substitute the value for y in the first equation and solve for x.

The display shows that $x = -139/93$. The solution of this system is $\left(-\frac{139}{93}, \frac{5}{93}\right)$.

Use this method with a TI-92 to solve each system of equations.

1. $12x - 5y = -1$
 $2x + 3y = 5$ $\left(\frac{11}{33}, \frac{31}{23}\right)$

2. $-x - 7y = 4$
 $\frac{1}{3}x + 2y = -4$ $(-60, 8)$

3. $32x - 16y = 5$
 $3x + 4y = -21$ $\left(-\frac{79}{44}, \frac{687}{176}\right)$

4. $9x + y = 17$
 $-2x + 23y = 8$ $\left(\frac{383}{209}, \frac{106}{209}\right)$