

ACTIVITY 1.3

Using Technology

Graphing Calculator Activity for use with Lesson 1.3

Using Tables to Solve Equations

You can use the *Table* feature of a graphing calculator to solve linear equations.

EXAMPLE

Use the *Table* feature of a graphing calculator to solve the equation $7x - 2 = 4x + 13$.

SOLUTION

Y1	=	7X-2
Y2	=	4X+13
Y3	=	
Y4	=	
Y5	=	
Y6	=	
Y7	=	

X	Y1	Y2
0	-2	13
1	5	17
2	12	21
3	19	25
4	26	29
5	33	33

- To use the *Table* feature to solve the equation, let y_1 equal the left side of the equation, and let y_2 equal the right side as shown above.
- Then set the starting x -value of the table to 0 and the step value (the value by which the x -values increase) to 1. The table should look similar to the one shown above.
- Scroll through the table until you find an x -value for which both sides of the equation have the same y -value or until the difference in the y -values changes sign. If both of the y -values are the same, that x -value is the solution of the equation. For the given equation, the solution is $x = 5$.

X	Y1	Y2
0	-2	13
1	5	17
2	12	21
3	19	25
4	26	29
5	33	33

EXERCISES

Use the table shown to decide whether the statement is *true* or *false*. Explain your reasoning.

- The solution of $4 - 5x = 16 + x$ is 2.
- The solution of $3x + 4 = x + 10$ is 3.

X	Y1	Y2
-3	19	13
-2	14	14
-1	9	15
0	4	16
1	-1	17
2	-6	18

X	Y1	Y2
-2	-2	8
-1	1	9
0	4	10
1	7	11
2	10	12
3	13	13

Use the *Table* feature of a graphing calculator to solve the equation.

- $2x + 4 = -3x - 6$
- $-4x + 4 = -x - 5$
- $-2x - 5 = 3 - 10x$
- $-4x + 10 = 4 - 10x$
- $15x - 3 = 15 - 3x$
- $2x - 18 = -5x - 4$

STUDENT HELP



See keystrokes for several models of calculators at www.mcdougallittell.com

STUDENT HELP

Study Tip

In Step 2, if the values of y_1 and y_2 become farther apart, you should reset the step value to -1 .
In Step 3, if the difference in y -values changes sign between x_1 and x_2 ($x_1 < x_2$), then the solution is between x_1 and x_2 and you should reset the starting x -value to x_1 and use a step value of 0.1 .