How do I solve a quadratic equation in Excel step-by-step?

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Excel is a powerful tool that can be used to solve complex mathematical equations, including quadratic equations. To solve a quadratic equation in Excel, there are several steps that need to be followed. First, the equation must be entered into a cell in the spreadsheet using the appropriate mathematical operators. Next, the cell containing the equation must be selected and the "Solver" function must be accessed. The solver will then calculate the solution to the equation, which can be viewed in the designated cell. Finally, the solution can be verified by substituting the calculated values back into the original equation. By following these steps, a quadratic equation can be solved accurately and efficiently in Excel.

Solve a Quadratic Equation in Excel (Step-by-Step)

A quadratic equation takes the following form:

ax2 + bx + c = y

Often you will be given the value for y and will be asked to solve for the value of x.

For example, suppose we have the following quadratic equation:

4x2 - 20x + 16 = -8

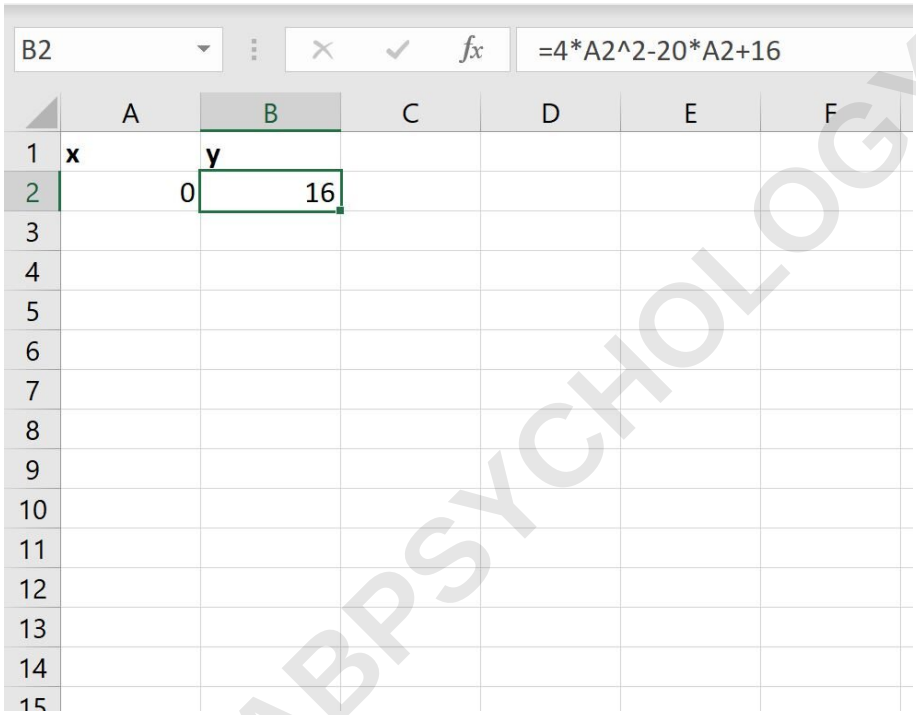
It turns out that setting x = 3 or x = 2 will solve this equation.

To solve quadratic equations in Excel, you can use the Goal Seek function.

The following step-by-step example shows how to use the Goal Seek function in practice.

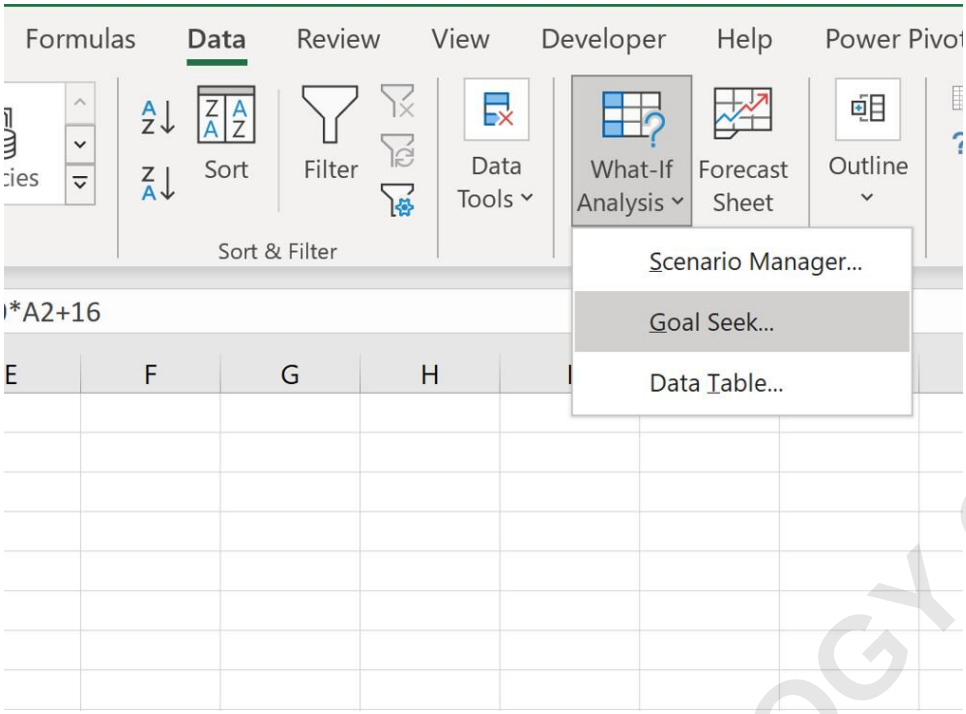
Step 1: Enter the Equation

First, let's enter some random value for x and the formula for the quadratic equation for y:

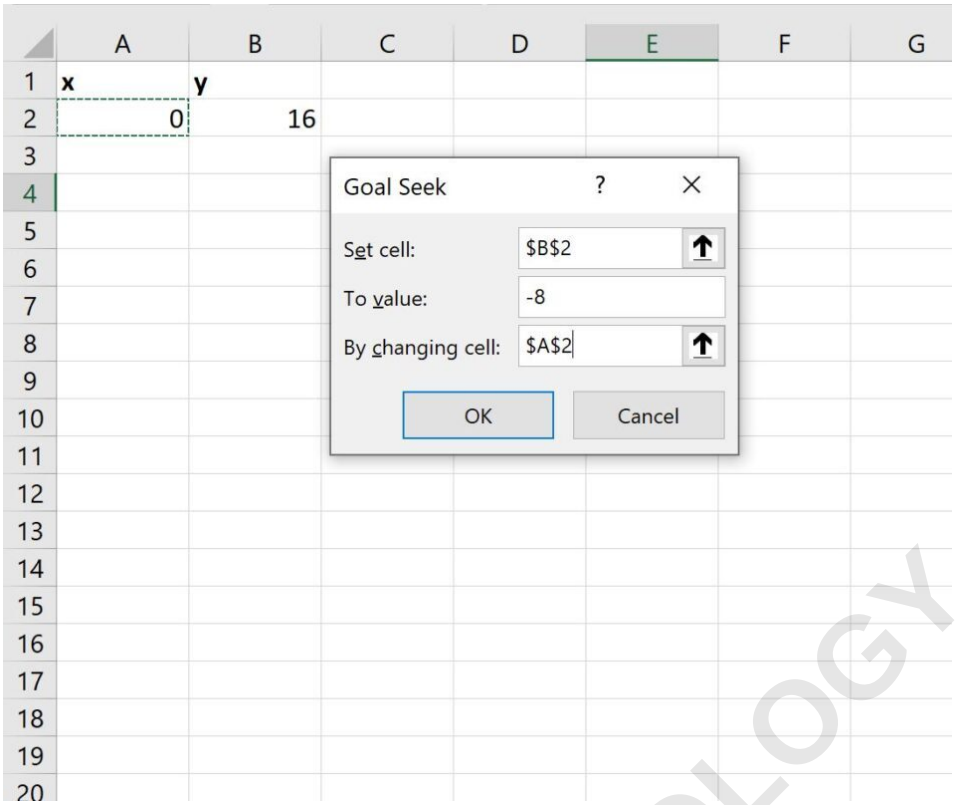


Step 2: Find the First X Value Using Goal Seek

Next, click the Data tab along the top ribbon, then click the What-If Analysis button, then Goal Seek:



In the new window that appears, specify that you'd like to set cell B2 equal to -8 by changing the value in cell A2:



Once we click OK, the Goal Seek function will automatically find the value for x that solves the equation:

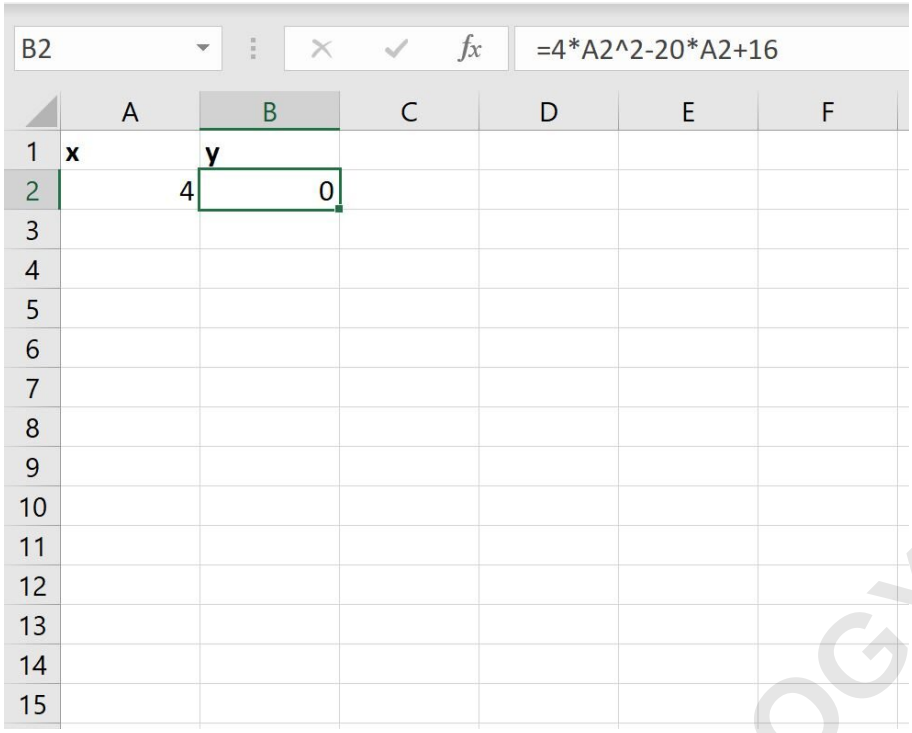
	A	B	C	D	E	F
1	**x**	**y**				
2	1.999986	-7.99994				
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						

Goal Seek finds that the value x=2 (assuming 1.9999 rounds to 2) solves the quadratic equation.

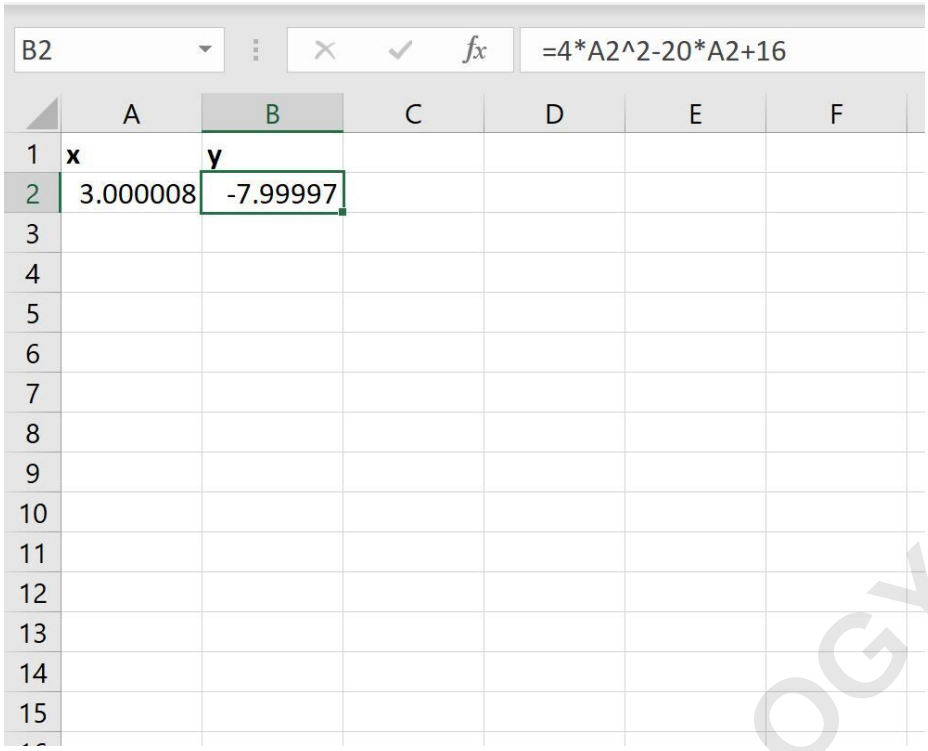
Step 3: Find the Second X Value Using Goal Seek

To find the second x value that solves the quadratic equation, set the initial x-value to a different number.

For example, we could choose to set the initial x-value to 4:



We can then run the Goal Seek function again and see that it finds a new solution of x=3:



Thus, the two x-values that can solve this quadratic equation are x=2 and x=3.

Additional Resources

The following tutorials explain how to perform other common tasks in Excel: