

# How to Quickly Find Regression Equation in Excel?

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## RECOMMENDED CITATION

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Finding the regression equation in Excel is easy and quick. All you need to do is enter your data into two columns, highlight the data, and then click on the Insert tab, then select trendline and choose the type of regression you want to use. The equation will then be displayed on the chart. You can then enter the equation into a cell in the worksheet, and use it to input values and calculate the predicted result.

You can use the **LINEST** function to quickly find a regression equation in Excel.

This function uses the following basic syntax:

**LINEST(known\_y's, known\_x's)**

where:

**known\_y's**: A column of values for the response variable

**known\_x's**: One or more columns of values for the predictor variables

The following examples show how to use this function to find a regression equation for a and a .

### Example 1: Find Equation for Simple Linear Regression

Suppose we have the following dataset that contains one predictor variable (x) and one response variable (y):

	A	B	C	D	E	F
1	<b>y</b>	<b>x</b>				
2	3	1				
3	5	3				
4	4	3				
5	7	4				
6	7	7				
7	9	8				
8	6	10				
9	5	12				
10	7	14				
11	12	14				
12	14	16				
13	9	17				
14	12	18				
15	15	22				
16						
17						
18						
19						
20						

We can type the following formula into cell **D1** to calculate the simple linear regression equation for this dataset:

**=LINEST(A2:A15, B2:B15)**

Once we press **ENTER**, the coefficients for the simple linear regression model will be shown:

	A	B	C	D	E	F
1	<b>y</b>	<b>x</b>		0.479072	3.115589	
2	3	1				
3	5	3				
4	4	3				
5	7	4				
6	7	7				
7	9	8				
8	6	10				
9	5	12				
10	7	14				
11	12	14				
12	14	16				
13	9	17				
14	12	18				
15	15	22				
16						
17						
18						
19						

Here's how to interpret the output:

The coefficient for the intercept is **3.115589**

The coefficient for the slope is **0.479072**

Using these values, we can write the equation for this simple regression model:

$$y = 3.115589 + 0.478072(x)$$

## Example 2: Find Equation for Multiple Linear Regression

Suppose we have the following dataset that contains two predictor variables (x1 and x2) and one response variable (y):

	A	B	C	D	E	F
1	<b>y</b>	<b>x1</b>	<b>x2</b>			
2	3	1	4			
3	5	3	7			
4	4	3	7			
5	7	4	10			
6	7	7	14			
7	9	8	18			
8	6	10	13			
9	5	12	12			
10	7	14	10			
11	12	14	19			
12	14	16	22			
13	9	17	24			
14	12	18	26			
15	15	22	29			
16						
17						
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21						

We can type the following formula into cell **E1** to calculate the multiple linear regression equation for this dataset:

**=LINEST(A2:A15, B2:C15)**

Once we press **ENTER**, the coefficients for the multiple linear regression model will be shown:

	A	B	C	D	E	F	G
1	y	x1	x2		0.406344	0.047243	1.471205
2	3	1	4				
3	5	3	7				
4	4	3	7				
5	7	4	10				
6	7	7	14				
7	9	8	18				
8	6	10	13				
9	5	12	12				
10	7	14	10				
11	12	14	19				
12	14	16	22				
13	9	17	24				
14	12	18	26				
15	15	22	29				
16							
17							
18							
19							
20							

Here's how to interpret the output:

The coefficient for the intercept is **1.471205**

The coefficient for x1 is **0.047243**

The coefficient for x2 is **0.406344**

Using these values, we can write the equation for this multiple regression model:

$$y = 1.471205 + 0.047243(x1) + 0.406344(x2)$$

**Note:** To find the p-values for the coefficients, the r-squared value of the model, and other metrics for a multiple linear regression model in Excel, you should use the Regression function from the Data Analysis ToolPak. This explains how to do so.

The following tutorials provide additional information on regression in Excel: