FORECAST

⊟ Hide All

Calculates, or predicts, a future value by using existing values. The predicted value is a y-value for a given x-value. The known values are existing x-values and y-values, and the new value is predicted by using linear regression. You can use this function to predict future sales, inventory requirements, or consumer trends.

Syntax

FORECAST(**x**,**known_y's**,**known_x's**)

X   is the data point for which you want to predict a value.

Known_y's   is the dependent array or range of data.

Known_x's   is the independent array or range of data.

Remarks

- If x is nonnumeric, FORECAST returns the #VALUE! error value.

- If known_y's and known_x's are empty or contain a different number of data points, FORECAST returns the #N/A error value.

- If the variance of known_x's equals zero, then FORECAST returns the #DIV/0! error value.

- The equation for FORECAST is a+bx, where:

$$a = \bar{y} - b\bar{x}$$

and:

$$b = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sum (x - \bar{x})^2}$$

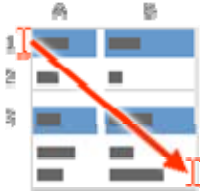and where x and y are the sample means AVERAGE(known_x's) and AVERAGE(known y's).

Example

The example may be easier to understand if you copy it to a blank worksheet.

⊟ How to copy an example

1. Create a blank workbook or worksheet.

2. Select the example in the Help topic.

   NOTE   Do not select the row or column headers.

   Selecting an example from Help

3. Press CTRL+C.

4. In the worksheet, select cell A1, and press CTRL+V.

5. To switch between viewing the results and viewing the formulas that return the results, press CTRL+` (grave accent), or on the **Formulas** tab, in the **Formula Auditing** group, click the **Show Formulas** button.

	A	B
1	**Known Y**	**Known X**
2	6	20
3	7	28
4	9	31
5	15	38
6	21	40
	Formula	**Description (Result)**
	=FORECAST(30,A2:A6,B2:B6)	Predicts a value for y given an x value of 30 (10.60725)

See Also

- GROWTH
- LINEST
- LOGEST
- Statistical functions
- TREND