



# EXCEL

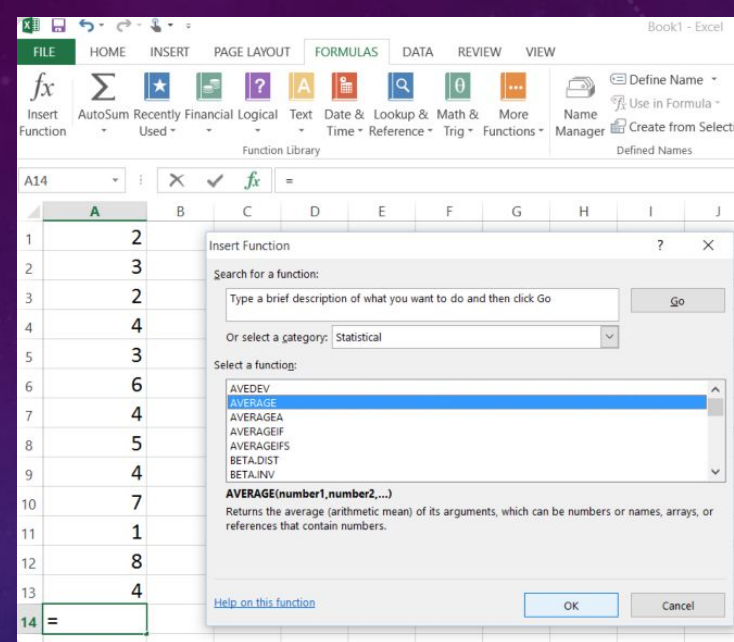
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# PLAN TO GRIND UP

- • Mean • Standard error • Median • Mode • Standard deviation • Sample Variance • Kurtosis • Skewness • Range • Maximum • Minimum • Sum • Count

# MEAN



- Enter the scores in one of the columns on the Excel spreadsheet (see the example below). After the data have been entered, place the cursor where you wish to have the mean (average) appear and click the mouse button. Select **Insert Function (fx)** from the **FORMULAS** tab. A dialog box will appear. Select **AVERAGE** from the **Statistical** category and click **OK**. (Note: If you want the Median, select **MEDIAN**. If you want the Mode, select **MODE.SNGL**. Excel only provides one mode. If a data set had more than one mode, Excel would only display one of them.)

# STANDARD ERROR

A1:A20))/SQRT(count(A1:A20))

D	E	F	G	H	I
alue					
10					
10					
15					
20					
30		=stdev(A1:A20))/SQRT(count(A1:A20))			
60					
15					
18					

- The formula for calculating the Standard Error of the mean in Excel is =stdev(' 'cell range' ')/SQRT(count("cell range")).

# MEDIAN

MEDIAN(number1,number2,...)

	1	2	3	4	5	Result
5	1	2	3	4	5	3
6	1	2	3	4		2.5
7	apple	1	2	3	orange	2

- The MEDIAN function returns the median (middle number) in a group of supplied numbers. For example, =MEDIAN(1,2,3,4,5) returns 3.

# MODE

exceljet\_mode.xlsx - Microsoft Excel

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M4 =MODE(B4:K4)

MODE (number1, [number2], ...)

1	2	2	1	1	2	2	2	1	1	1
5	10	15	15	10	5	12	15	15	10	15
69	70	70	71	71	70	69	73	71	72	70
95	115	125	115	95	115	125	150	150	115	115

Ready Sheet1 100%

- The Excel MODE function returns the most frequently occurring number in a numeric data set. For example, =MODE(1,2,4,4,5,5,5,6) returns 5.

# STANDARD DEVIATION

Number	Score
1	102
2	99
3	97
4	100
5	98
6	105
7	102

Count	7
Average	100.4
Standard dev.	2.8

- Use the **Excel Formula** `=STDEV()` and select the range of values which contain the data. This calculates the sample **standard deviation** (n-1). Use the web **Standard Deviation** calculator and paste your data, one per line.

# SAMPLE VARIANCE

The screenshot shows an Excel spreadsheet with two columns of data: Mathematics (column B) and Science (column C). The data points are as follows:

	Mathematics	Science
1		
2	1	48
3	2	56
4	3	74
5	4	37
6	5	86
7	6	72
8	7	52
9	8	40
10	9	64
11	10	71
12	11	40
13	12	58
14	13	63
15	14	67
16	15	57
17	16	80
18	17	52
19	18	40
20	19	38
21	20	42

Summary table:

	Mathematics	Science
Mean		
Maximum Value		
Minimum value		
Range		
Variance		

Text box explaining Range:

**Range**  
The **Range** of a quantitative data set is equal to the largest measurement minus the smallest measurement.

Sample data set A: 1, 2, 3, 4, 5  
Sample data set B: 2, 3, 3, 3, 4

Mean set A =  $\frac{1+2+3+4+5}{5} = \frac{15}{5} = 3$   
Mean set B =  $\frac{2+3+3+3+4}{5} = \frac{15}{5} = 3$

Range set A =  $5 - 1 = 4$   
Range set B =  $4 - 2 = 2$

- **Sample Variance Excel 2013: VAR Function.** Step 1: Type your data into a single column. Step 3: Type “=VAR(A1:A100)” where A1:A100 is the location of your data set (i.e. in cells A1 to A100). Press the “Enter” key to get the **sample variance**.

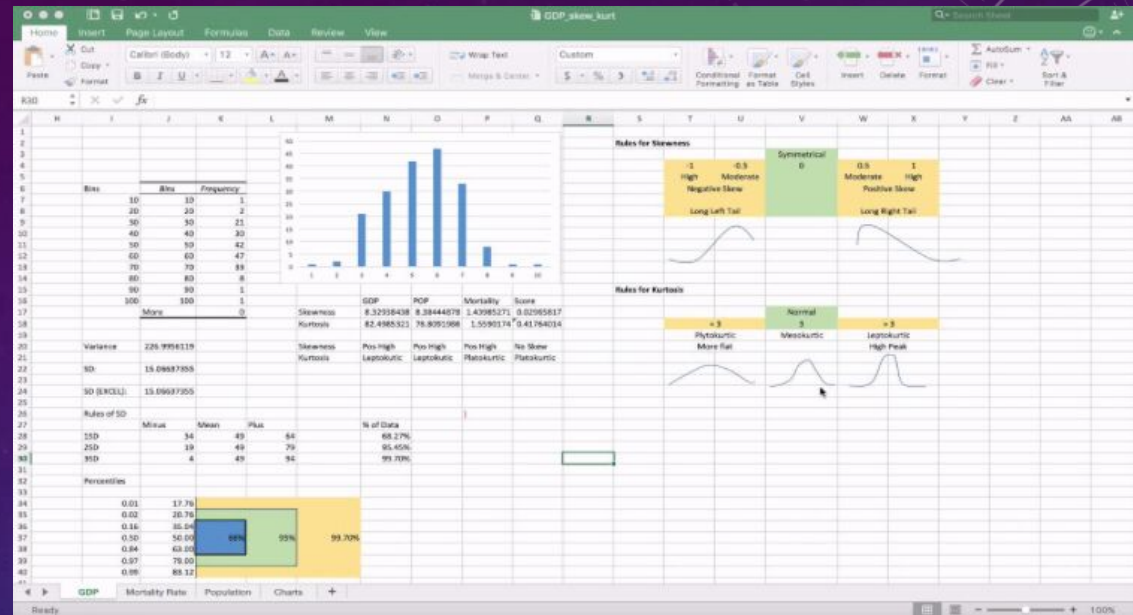


# KURTOSIS

$$\left[ \frac{n(n+1)}{(n-1)(n-2)(n-3)} \sum \left( \frac{x_i - \bar{x}}{s} \right)^4 \right] - \frac{3(n-1)^2}{(n-2)(n-3)}$$

- KURT(number1, [number2], ...) The KURT function syntax has the following arguments: **Number1**, **number2**, ... Number1 is required, subsequent numbers are optional. 1 to 255 arguments for which you want to calculate kurtosis. You can also use a single array or a reference to an array instead of arguments separated by commas.

# SKEWNESS

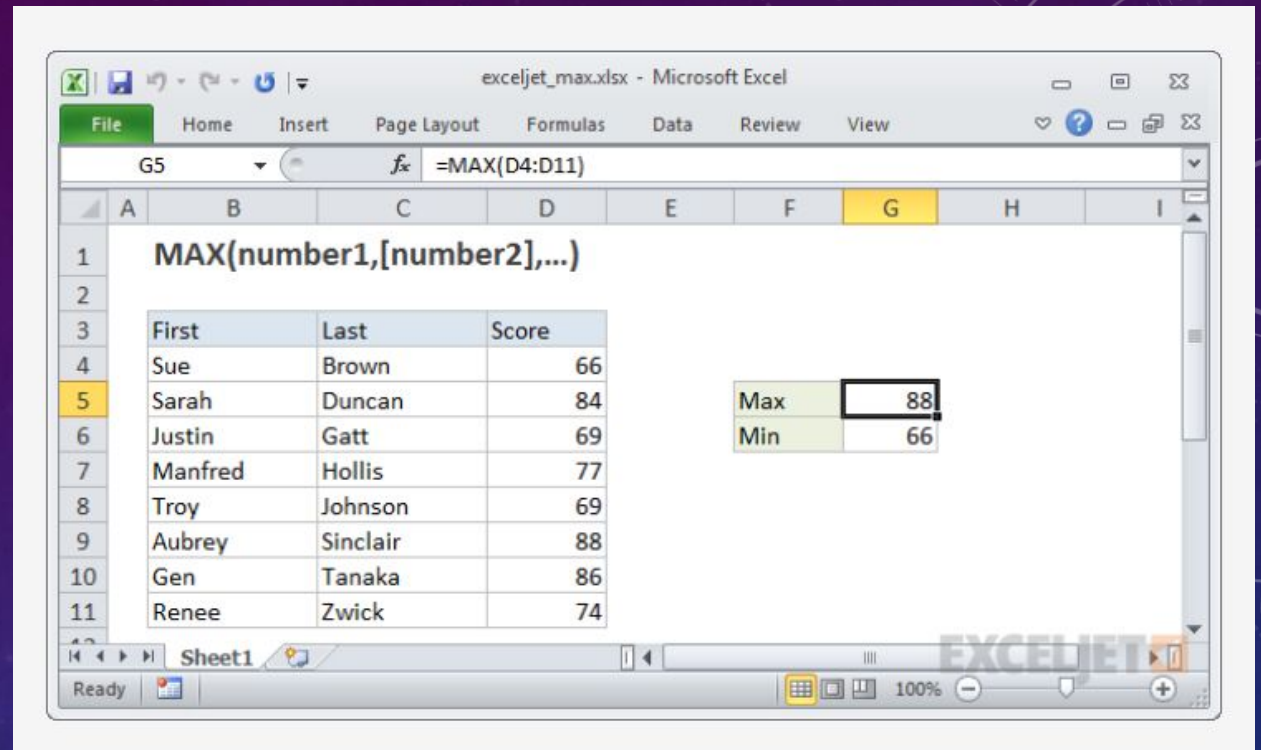


- **SKEW(number1, [number2], ...)**The SKEW function syntax has the following arguments:**Number1, number2, ...** Number1 is required, subsequent numbers are optional. 1 to 255 arguments for which you want to calculate skewness. You can also use a single array or a reference to an array instead of arguments separated by commas.

# RANGE

- Range = maximum value – minimum value  
So if you have a set of data such as 4, 2, 5, 8, 12, 15, the range is the highest number (15) minus the lowest number (2). In this case:  
Range =  $15 - 2 = 13$

# MAXIMUM



exceljet\_max.xlsx - Microsoft Excel

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G5 fx =MAX(D4:D11)

MAX(number1,[number2],...)

First	Last	Score
Sue	Brown	66
Sarah	Duncan	84
Justin	Gatt	69
Manfred	Hollis	77
Troy	Johnson	69
Aubrey	Sinclair	88
Gen	Tanaka	86
Renee	Zwick	74

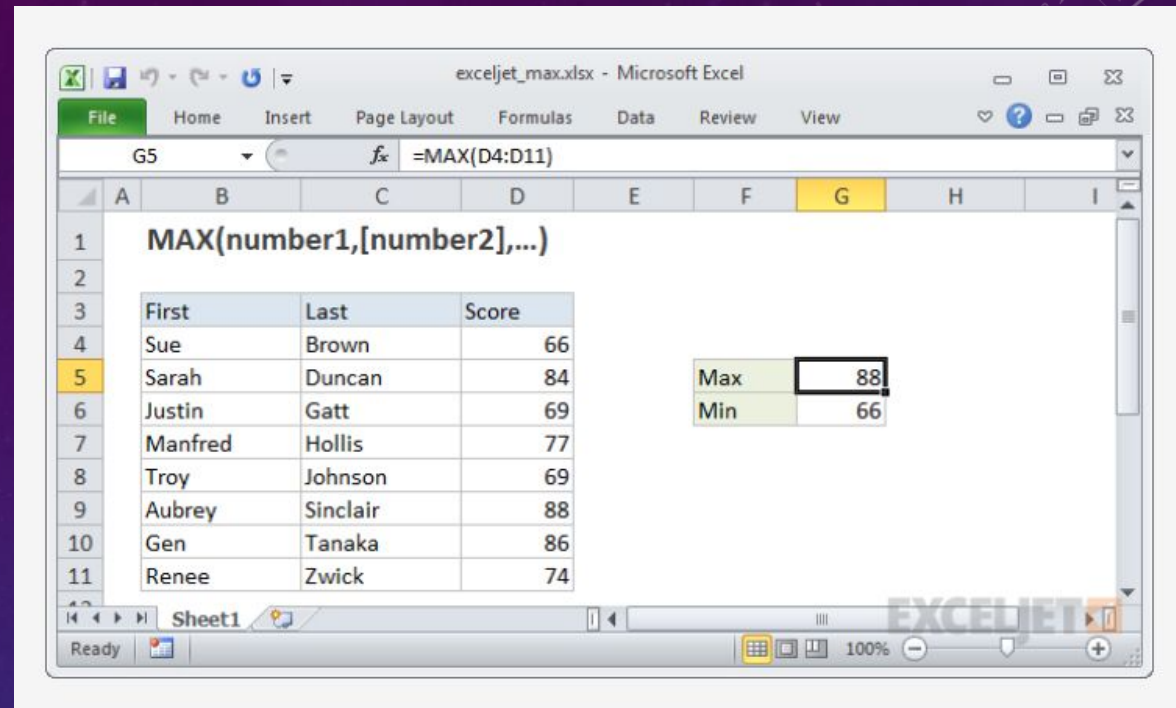
Max	88
Min	66

Sheet1

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- =MAX (number1, [number2], ...)

# MINIMUM



The screenshot shows a Microsoft Excel window titled "exceljet\_max.xlsx". The active cell is G5, containing the formula `=MAX(D4:D11)`. The spreadsheet contains a table with the following data:

First	Last	Score
Sue	Brown	66
Sarah	Duncan	84
Justin	Gatt	69
Manfred	Hollis	77
Troy	Johnson	69
Aubrey	Sinclair	88
Gen	Tanaka	86
Renee	Zwick	74

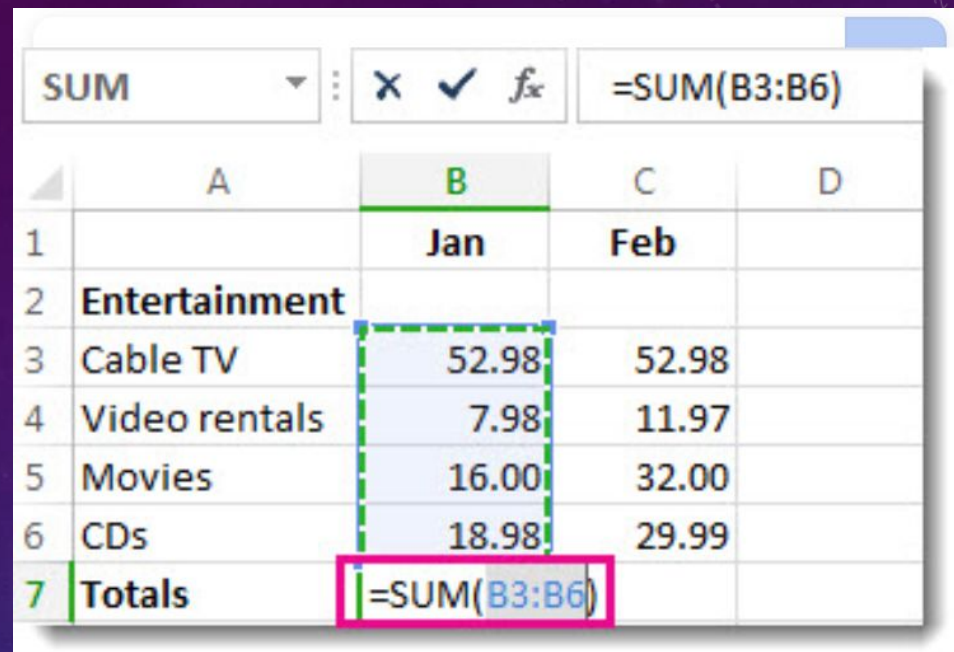
Below the table, there is a summary table:

Max	88
Min	66

The status bar at the bottom indicates "Ready" and "100%".

- `=MIN (number1, [number2], ...)`

# SUM



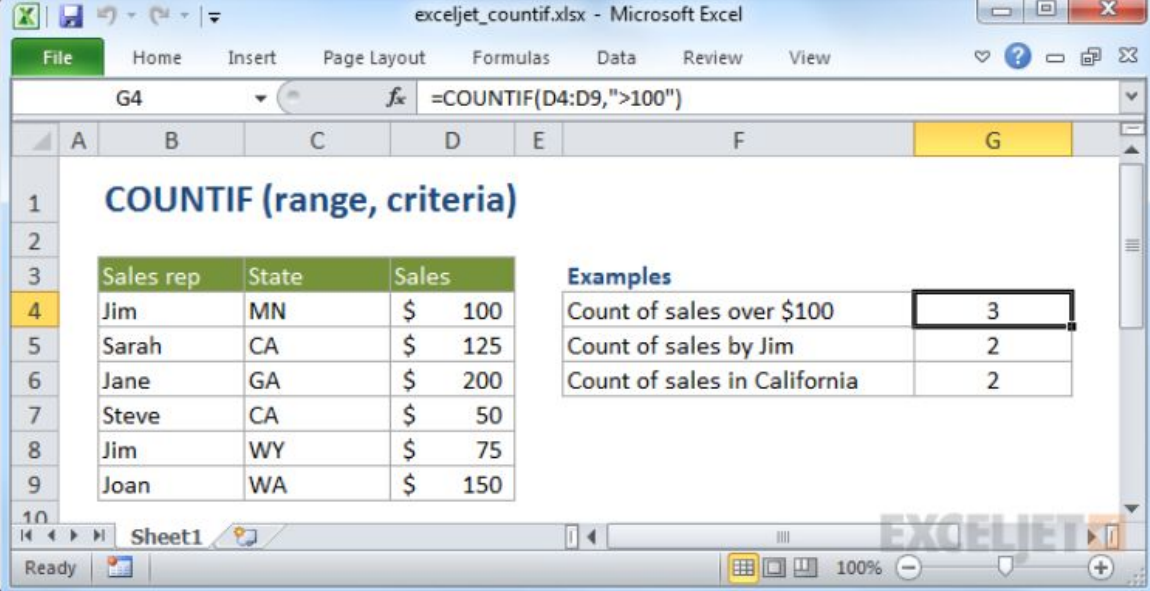
The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D
1		Jan	Feb	
2	Entertainment			
3	Cable TV	52.98	52.98	
4	Video rentals	7.98	11.97	
5	Movies	16.00	32.00	
6	CDs	18.98	29.99	
7	Totals	=SUM(B3:B6)		

The formula bar at the top shows the formula `=SUM(B3:B6)`. The range B3:B6 is highlighted with a green dashed border, and the formula cell B7 is highlighted with a pink border.

- The **SUM** function, one of the math and trig functions, adds values. You can add individual values, cell references or ranges or a mix of all three. For example: **=SUM(A2:A10)**  
**=SUM(A2:A10, C2:C10)**

# COUNT



The screenshot shows the Microsoft Excel interface with the following content:

Formula bar: `=COUNTIF(D4:D9, ">100")`

Sales rep	State	Sales
Jim	MN	\$ 100
Sarah	CA	\$ 125
Jane	GA	\$ 200
Steve	CA	\$ 50
Jim	WY	\$ 75
Joan	WA	\$ 150

**Examples**

Count of sales over \$100	3
Count of sales by Jim	2
Count of sales in California	2

- The **COUNT** function counts the number of cells that contain numbers, and counts numbers within the list of arguments. Use the **COUNT** function to get the number of entries in a number field that is in a range or array of numbers. For example, you can enter the following formula to count the numbers in the range A1:A20: **=COUNT(A1:A20)**.