EXCEL FUNCTIONS

NOTE: USE semicolon (;) instead of Comma (,) in syntax of every excel function given in this PDF file and all the functions works perfectly fine with Open Office Calc

TYPES OF FUNCTION:

1) **MATHEMATICAL AND TRIGONOMATRIC FUNCTIONS:-**
   These includes wide variety of functions for calculations of all type

1. **SUM() : This function adds the value**

   Syntax:**SUM(*number1*, [number2], …)**

   Example: **=SUM(A2:A6)** - adds up values in cells A2 through A6.

=SUM(A2:A6)/5 - adds up values in cells A2 through A6, and then divides the sum by 5.

	A	B	C	D	E
1	**Data**		**Sum formulas**		
2	1		**15**	=SUM(A2:A6)	
3	2		**3**	=SUM(A2:A6)/5	
4	3				
5	4				
6	5				

2. **ROUND() : The Excel ROUND function returns a number rounded to a given number of digits. The ROUND function can round to the right or left of the decimal point.**

   Syntax: =ROUND (number, num_digits)

D4 =ROUND(B4,C4)

	A	B	C	D	E
1		ROUND (number, num_digits)			
2					
3		Number	Digits	Result	Notes
4		5.7845	1	5.8	Round to 1 decimal place
5		5.7845	2	5.78	Round to 2 decimal places
6		5.7845	3	5.785	Round to 3 decimal places
7		23542.5	0	23543	Round to the nearest whole number
8		23542.5	-1	23540	Round to the nearest 10
9		23542.5	-2	23500	Round to the nearest 100
10		23542.5	-3	24000	Round to the nearest 1000

If **num_digits** > 0, **number** is rounded to the specified number of decimal places to the right of the decimal point.

If **num_digits** < 0, **number** is rounded to the left of the decimal point (i.e. to the nearest 10, 100, 1000, etc.).

If **num_digits** = 0, **number** is rounded to the nearest integer.

3. **ROUNDUP() :** The Excel ROUNDUP function returns a number rounded up to a given number of decimal places. Unlike standard rounding, where numbers less than 5 are rounded down, ROUNDUP always rounds numbers 1-9 up.

   Syntax: =ROUNDUP (number, num_digits)

D4 =ROUNDUP(B4,C4)

ROUNDUP (number, num_digits)

Number	Digits	Result	Notes
5.1242	0	6	Round up to the nearest whole number
5.1242	1	5.2	Round up to 1 decimal place
5.1242	2	5.13	Round up to 2 decimal places
5.1242	3	5.125	Round up to 3 decimal places
27842.5	-1	27850	Round up to the nearest 10
27842.5	-2	27900	Round up to the nearest 100
27842.5	-3	28000	Round up to the nearest 1000

4. **ROUNDDOWN() :** The Excel ROUNDDOWN function returns a number rounded down to a given number of decimal places. Unlike standard rounding, where only numbers less than 5 are rounded down, ROUNDDOWN rounds all numbers 1-9 down.

   Syntax: =ROUNDDOWN (number, num_digits)

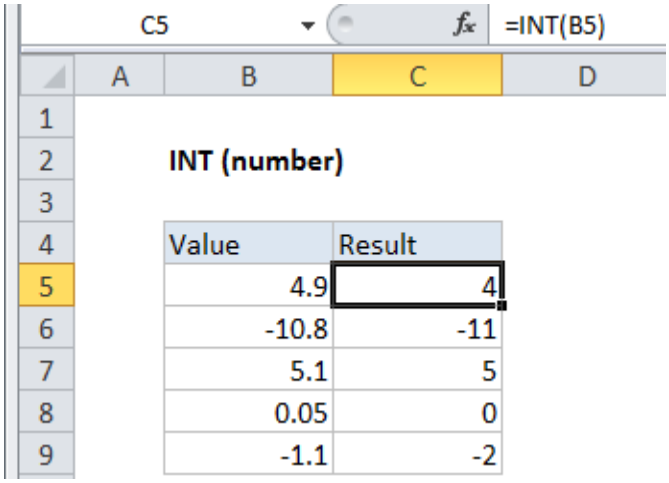
D4 =ROUNDDOWN(B4,C4)

ROUNDDOWN (number, num_digits)

Number	Digits	Result	Notes
5.7899	0	5	Round down to the nearest whole number
5.7899	1	5.7	Round down to 1 decimal place
5.7899	2	5.78	Round down to 2 decimal places
5.7899	3	5.789	Round down to 3 decimal places
27842.5	-1	27840	Round down to the nearest 10
27842.5	-2	27800	Round down to the nearest 100
27842.5	-3	27000	Round down to the nearest 1000

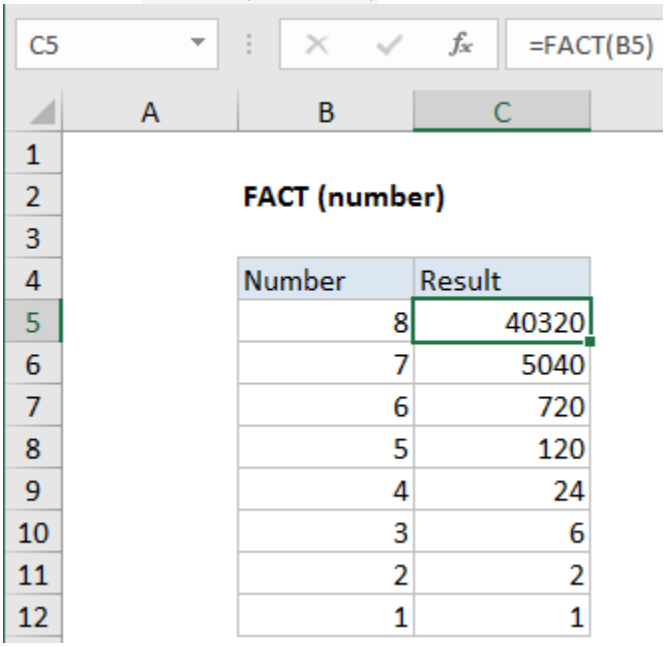
5. **INT() : T**he Excel INT function returns the integer part of a decimal number by rounding down to the integer.

   Syntax: =INT (number)



6. **FACT() :** The Excel FACT function returns the factorial of a given number. For example, =FACT(3) returns 6, equivalent to 3 x 2 x 1.

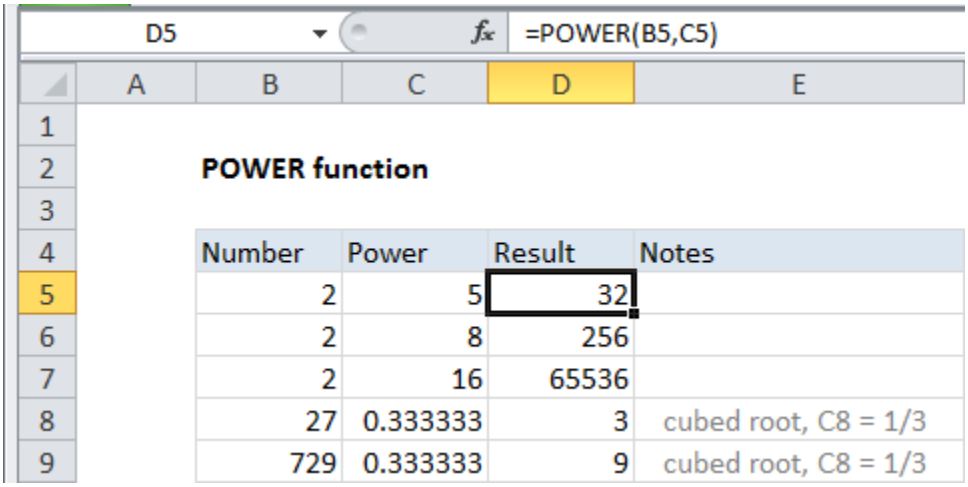
Syntax: =FACT (number)



7. **POWER() :** he Excel POWER function returns a number to a given power. The POWER function works like an exponent in a standard math equation.

Syntax: =POWER (number, power)

number - Number to raise to a power.
power - Exponent to raise power to.



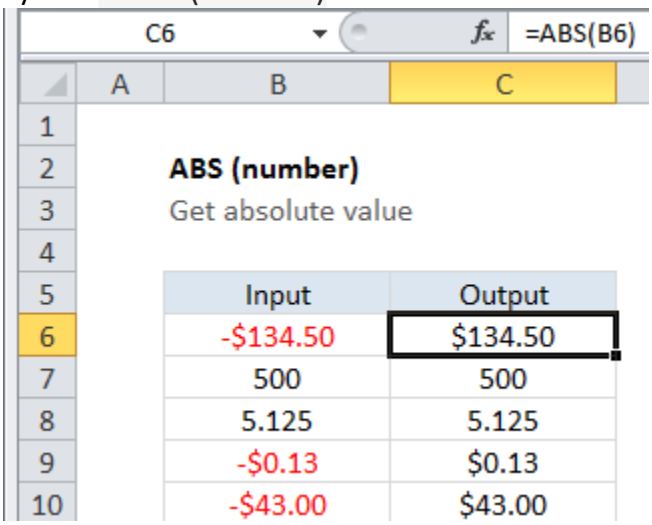
D5 | =POWER(B5,C5)

POWER function

Number	Power	Result	Notes
2	5	32	
2	8	256	
2	16	65536	
27	0.333333	3	cubed root, C8 = 1/3
729	0.333333	9	cubed root, C8 = 1/3

8. **ABS() :** The Excel ABS function returns the absolute value of a number. Negative numbers are converted to positive numbers, and positive numbers are unaffected

Syntax: =ABS (number)



C6 | =ABS(B6)

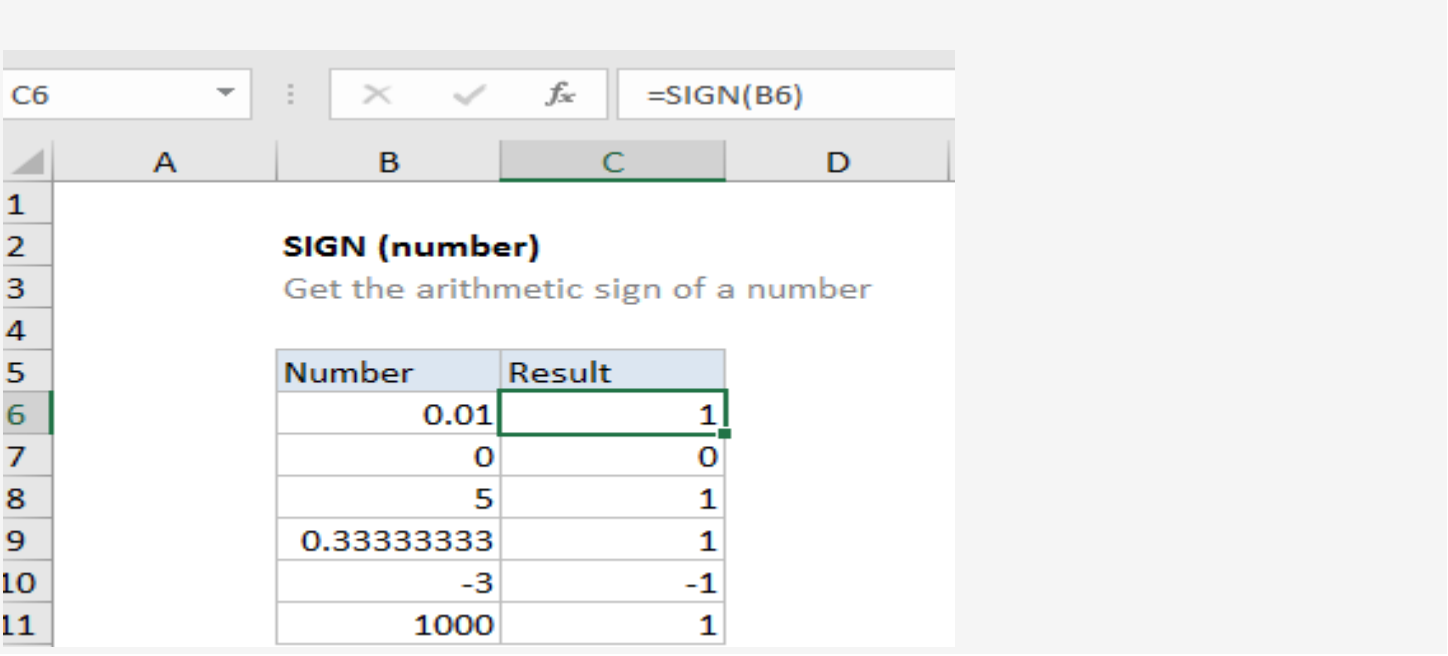
ABS (number)

Get absolute value

Input	Output
-$134.50	$134.50
500	500
5.125	5.125
-$0.13	$0.13
-$43.00	$43.00

9. **SIGN() :** The Excel SIGN function returns the sign of a number as +1, -1 or 0. If number is positive, SIGN returns 1. If number is negative, sign returns -1. If number is zero, SIGN returns 0.

Syntax: =SIGN (number)

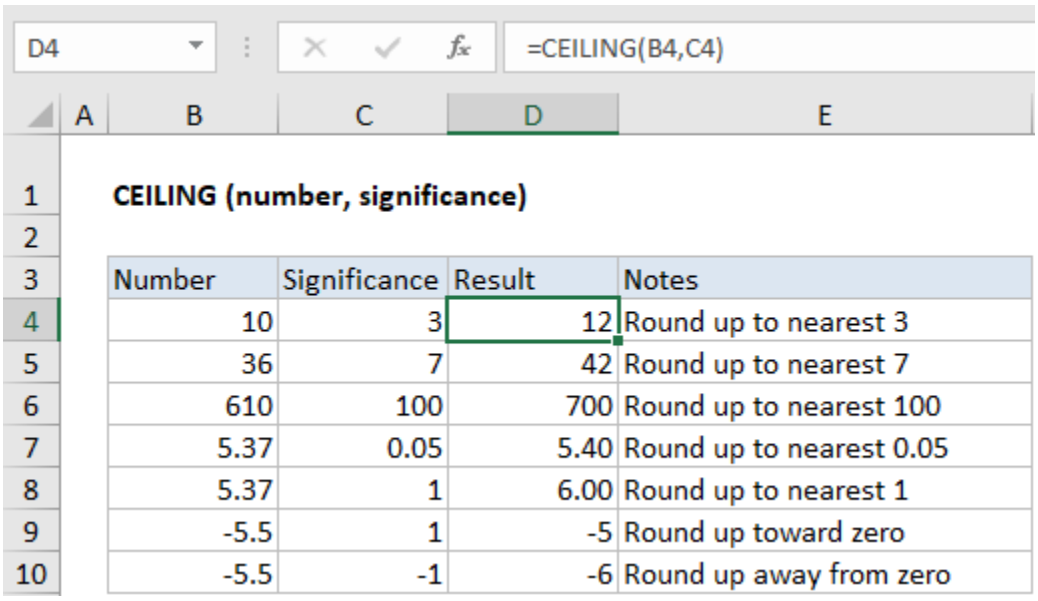


Number	Result
0.01	1
0	0
5	1
0.33333333	1
-3	-1
1000	1

10. CEILING() :The Excel CEILING function returns a given number rounded up to a specified multiple. For example, =CEILING(A1,5) could be used to round a price in A1 to the nearest 5 dollars. CEILING always rounds up.

Syntax: =CEILING (number, multiple)

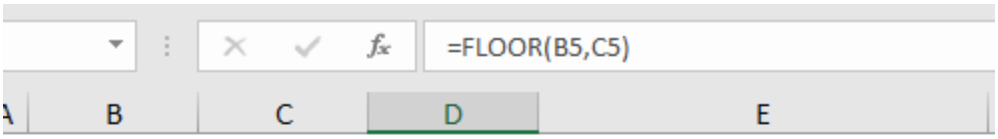
number - The number that should be rounded.
multiple - The multiple to use when rounding.



Number	Significance	Result	Notes
10	3	12	Round up to nearest 3
36	7	42	Round up to nearest 7
610	100	700	Round up to nearest 100
5.37	0.05	5.40	Round up to nearest 0.05
5.37	1	6.00	Round up to nearest 1
-5.5	1	-5	Round up toward zero
-5.5	-1	-6	Round up away from zero

11. **FLOOR() :** The Excel FLOOR function rounds a given number down to the nearest specified multiple. FLOOR always rounds dow

Syntax: =FLOOR (number, multiple)



FLOOR (number, significance)

Number	Significance	Result	Notes
10	3	9	Round down to nearest 3
36	7	35	Round down to nearest 7
660	100	600	Round down to nearest 100
$5.37	0.05	$5.35	Round down to nearest 0.05
$5.37	1	$5.00	Round down to nearest 1
-5.6	1	-6	Round away from zero
-5.6	-1	-5	Round toward zero

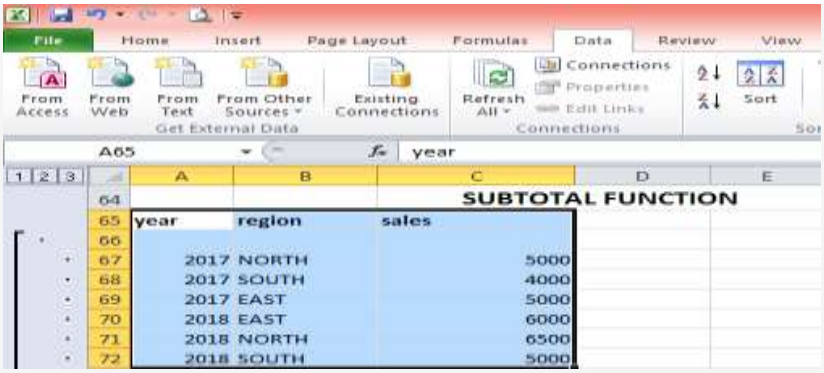
12. **SUBTOTAL() :** The Excel SUBTOTAL function returns an aggregate result for supplied values. SUBTOTAL can return a SUM, AVERAGE, COUNT, MAX, and others. Get a subtotal in a list or database

Synatax: =SUBTOTAL (function_num, ref1, [ref2], ...)

function_num - A number that specifies which function to use in calculating subtotals within a list. See table below for full list.
ref1 - A named range or reference to subtotal.
ref2 - [optional] A named range or reference to subtotal.

STEPS:

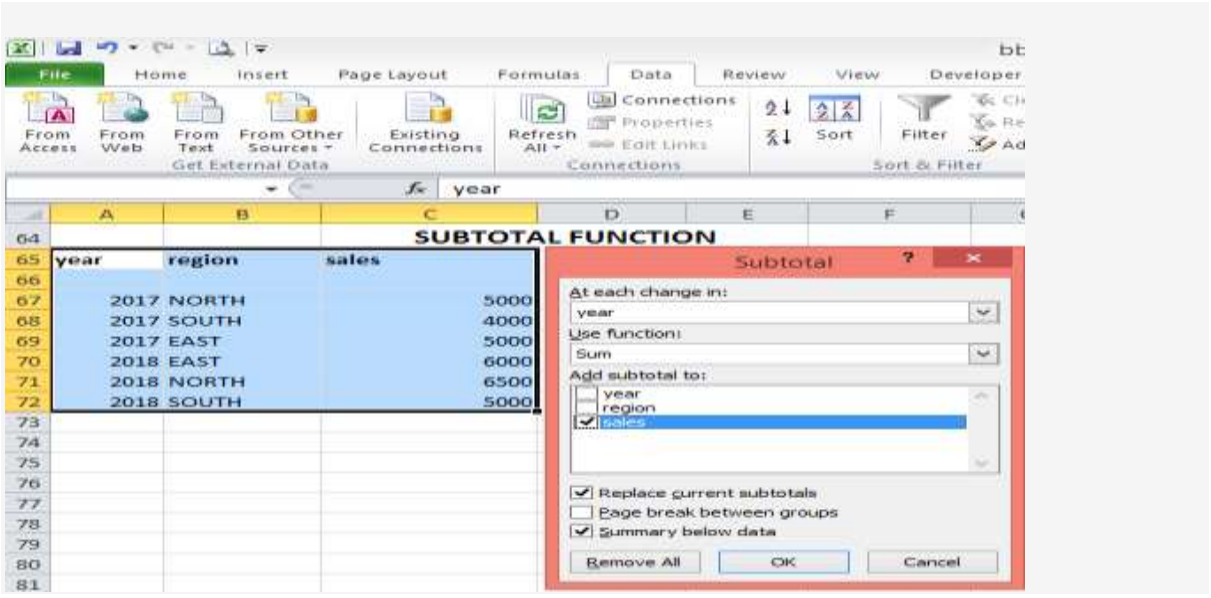
1. Select The Data Range In Which YouWant To Perform SUBTOTAL Function Formula



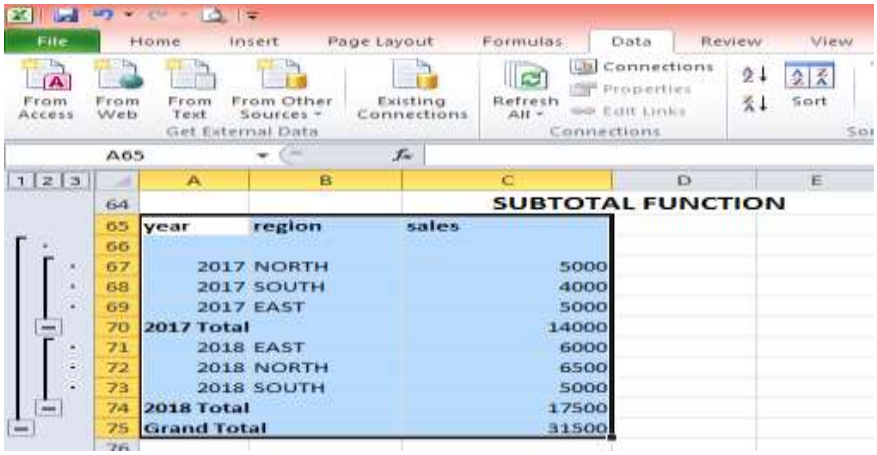
2. Go To DATA Menu

3. Select Subtotal Icon

4. Now we Want Year Wise Total Of Sales So From The Open Dialogbox We Select:



5. Now Press OK And Finally We Got The Year Wise Sum Of Sales



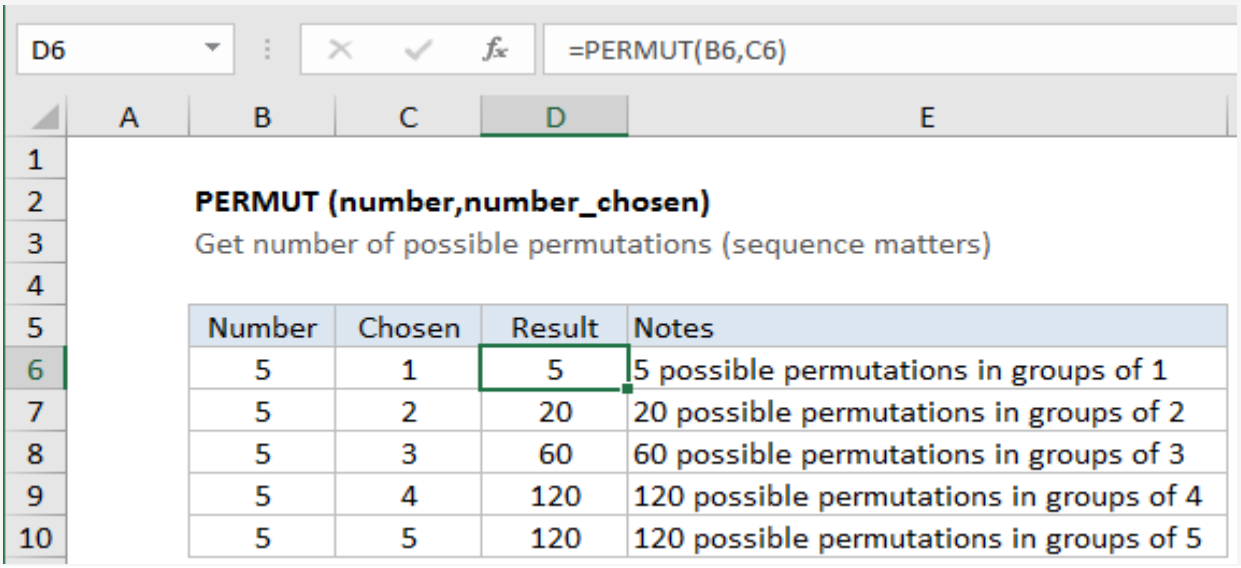
13. **PERMUT() :** The Excel PERMUT function returns the number of permutations (combinations where order is significant) of a given number of items. To use PERMUT, specify the total number of items and "number chosen", which represents the number of items in each combination.

Syntax: =PERMUT (number, number_chosen)

A permutation is a group of items in which order/sequence matters.

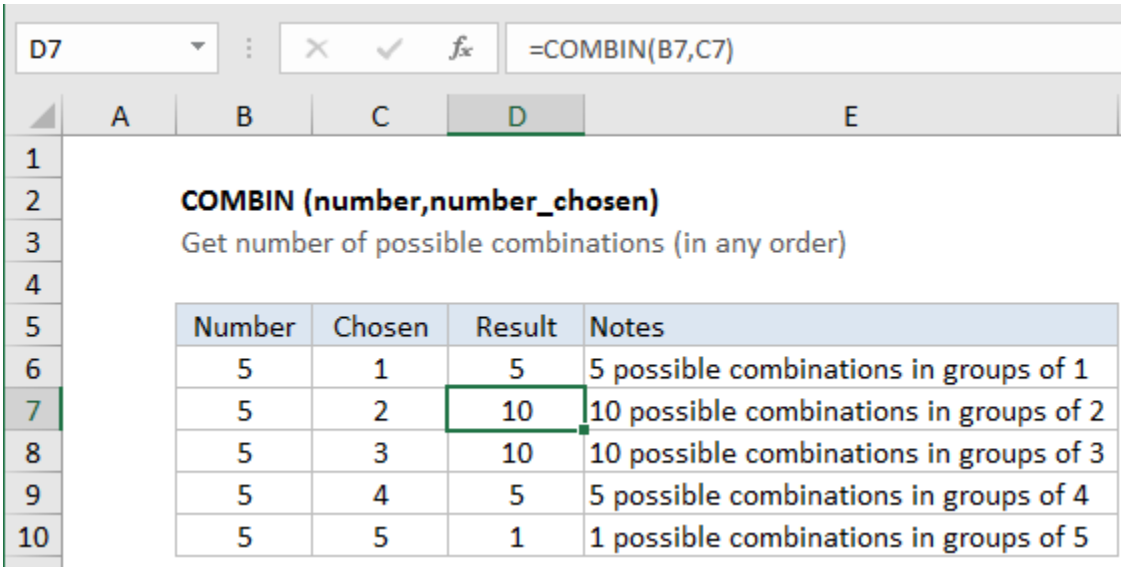
If order is not significant, use the COMBIN function.

Arguments that contain decimal values are truncated to integers.



14. **COMBIN() :** The Excel Combin function returns the number of combinations (in any order) of a given number of items. To use COMBIN, specify the total number of items and "number chosen" which represents the number of items in each combination.

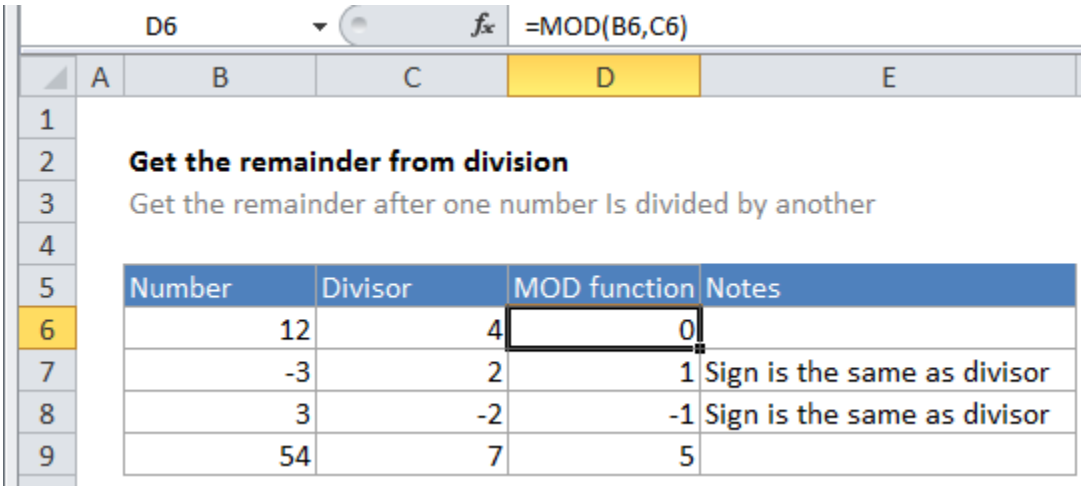
Syntax: =COMBIN (number, number_chosen)



Number	Chosen	Result	Notes
5	1	5	5 possible combinations in groups of 1
5	2	10	10 possible combinations in groups of 2
5	3	10	10 possible combinations in groups of 3
5	4	5	5 possible combinations in groups of 4
5	5	1	1 possible combinations in groups of 5

15. **MOD() :** The Excel MOD function returns the remainder of two numbers after division. For example, MOD(10,3) = 1. The result of MOD carries the same sign as the divisor.

Syntax: =MOD (number, divisor)



Number	Divisor	MOD function	Notes
12	4	0	
-3	2	1	Sign is the same as divisor
3	-2	-1	Sign is the same as divisor
54	7	5	

2) STATISTICAL FUNCTIONS

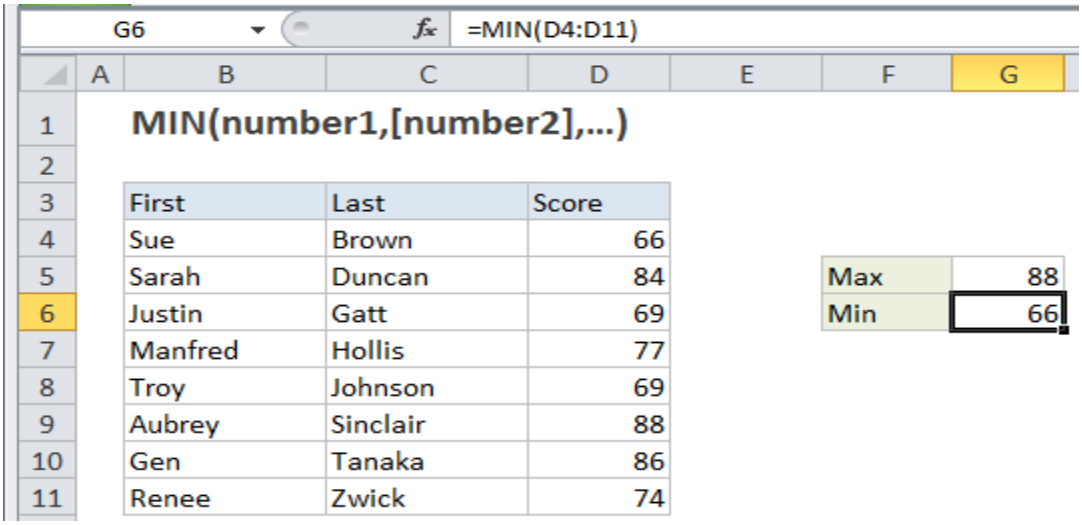
These functions are used for calculating average,probabilities,ranking,tcends and others.

1. **MIN() :** The Excel MIN function returns the smallest numeric value in a range of values. The MIN function ignores empty cells, the logical values TRUE and FALSE, and text values.

   Syntax: =MIN (number1, [number2], ...)

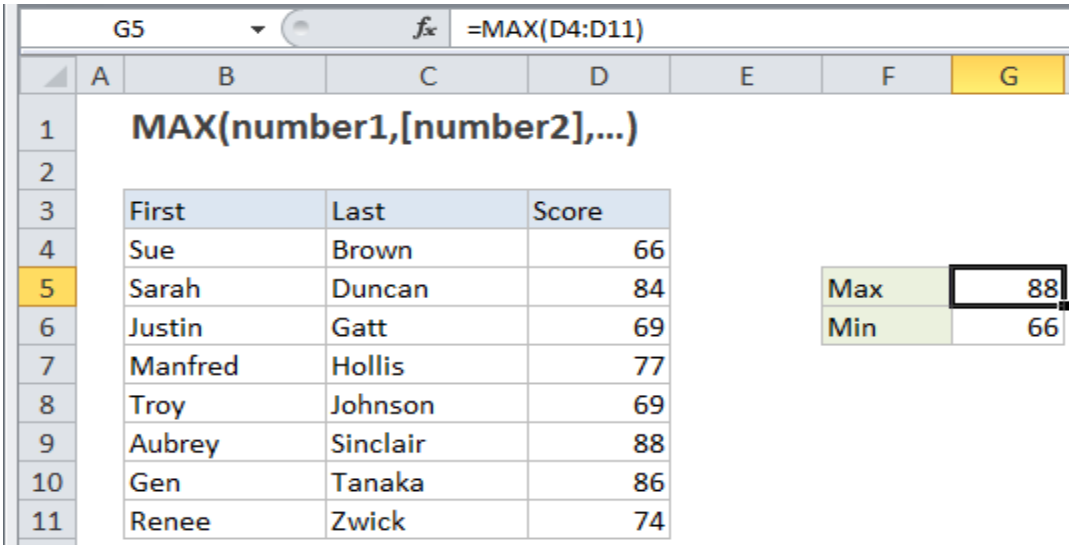
number1 - Number, reference to numeric value, or range that contains numeric values.

number2 - [optional] Number, reference to numeric value, or range that contains numeric values.



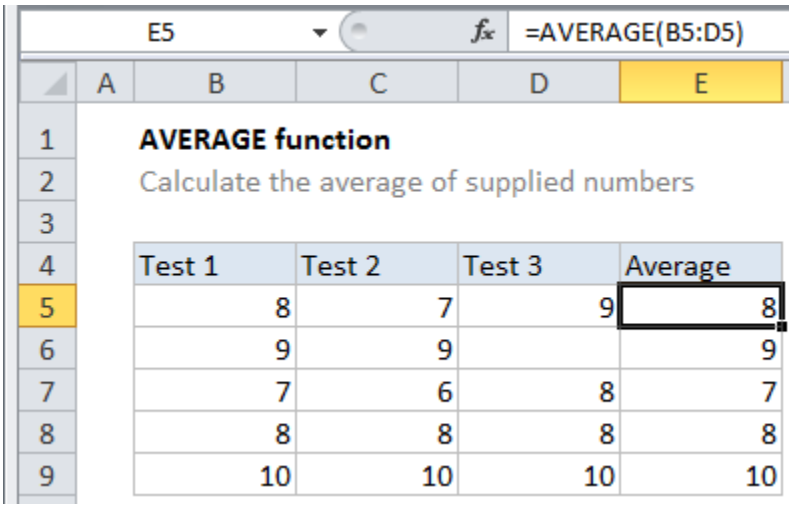
2. **MAX():**The Excel MAX function returns the largest numeric value in a range of values. The MAX function ignores empty cells, the logical values TRUE and FALSE, and text values.

   Syntax: =MAX (number1, [number2], ...)



3. **AVERAGE() :** The Excel AVERAGE function returns the average of values supplied as multiple arguments. AVERAGE can handle up to 255 individual arguments, which can include numbers, cell references, ranges, arrays, and constants.

   Syntax: =AVERAGE (number1, [number2], ...)



4. **AVERAGEA():**The Excel AVERAGEA function returns the average of a group of supplied values. Unlike AVERAGE, AVERAGEA will also evaluate the logical values TRUE and FALSE, and numbers represented as text, whereas AVERAGE just skips these values during calculation

   Syntax: =AVERAGEA (value1, [value2], ...)

G5 =AVERAGEA(B5:E5)

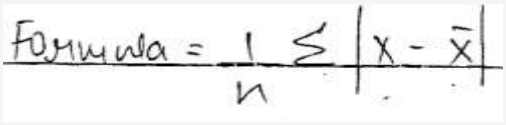
AVERAGEA function

Average numbers (as text) and boolean values

	val1	val2	val3	val4	AVERAGE	AVERAGEA
5	2	4	6	8	5	5
6	2	TRUE	6	8	7	3.75
7	7	6	FALSE		#DIV/0!	0
8	1	3	TRUE	TRUE	2	1.5

5. **AVEDEV() : T**he Excel AVEDEV function returns the average of the absolute value of deviations from the mean for a given set of data. Average deviation is a measure of variabilit

Syntax: =AVEDEV (number1, [number2], ...)



G5 =AVEDEV(B5:B10)

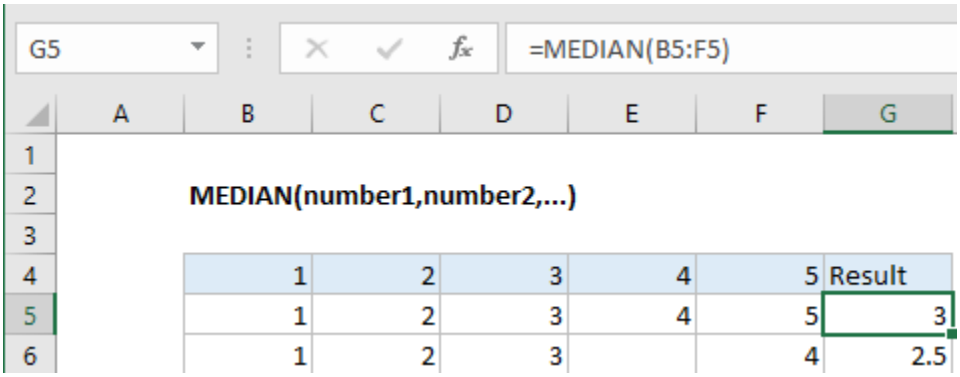
AVEDEV (number1, [number2], ...)

	Height	Deviation	ABS
5	50	2	2
6	47	-1	1
7	52	4	4
8	46	-2	2
9	45	-3	3
10	48	0	0

Average	48
AVEDEV	2

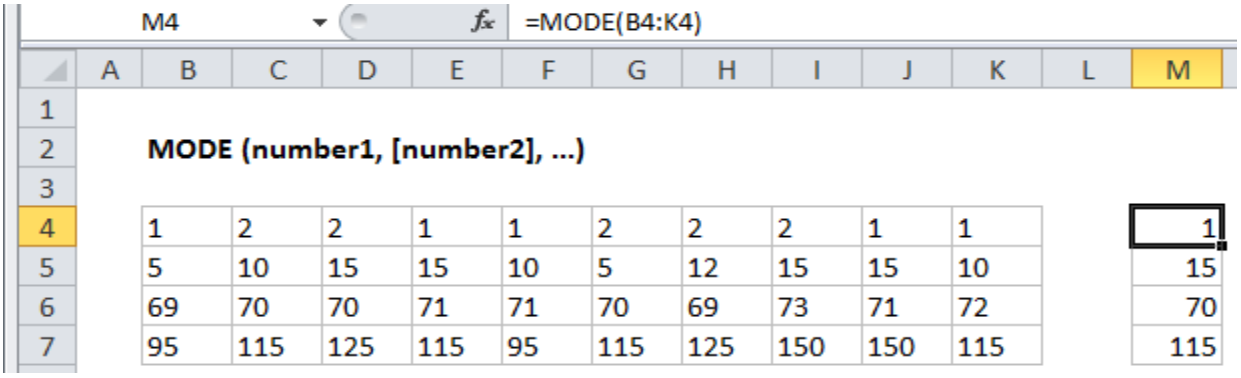
6. **MEDIAN():**The MEDIAN function returns the median (middle number) in a group of supplied numbers. For example, =MEDIAN(1,2,3,4,5) returns 3

Syntax: =MEDIAN (number1, [number2], ...)



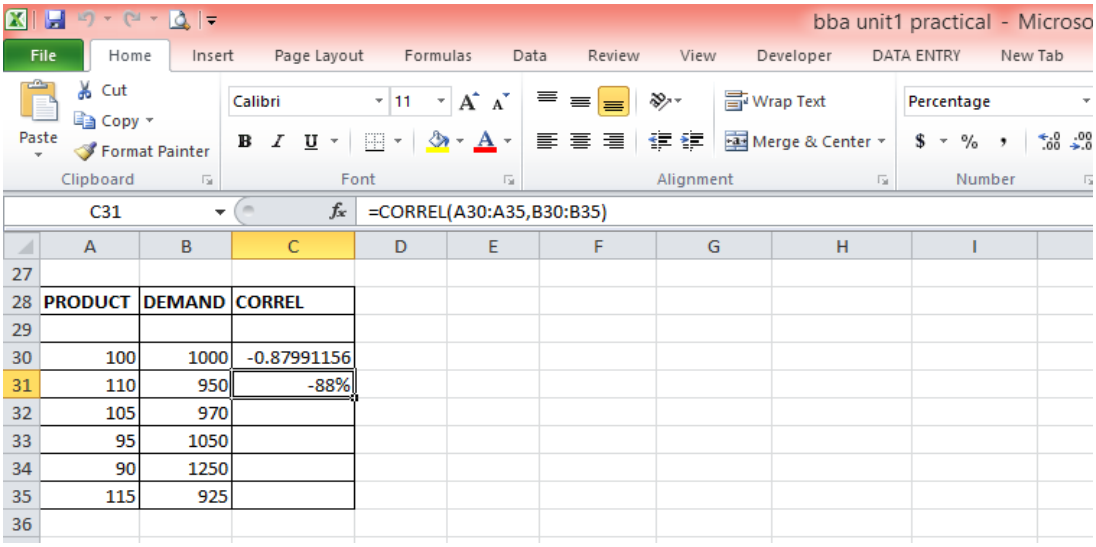
7. **MODE() :** The Excel MODE function returns the most frequently occurring number in a numeric data set. For example, =MODE(1,2,4,4,5,5,5,6) returns 5.

   Syntax: =MODE (number1, [number2], ...)



8. **CORREL():**Returns the correlation coefficient of the Array1 and Array2 cell ranges. Use the correlation coefficient to determine the relationship between two properties. For example, you can examine the relationship between a location's average temperature and the use of air conditioners.

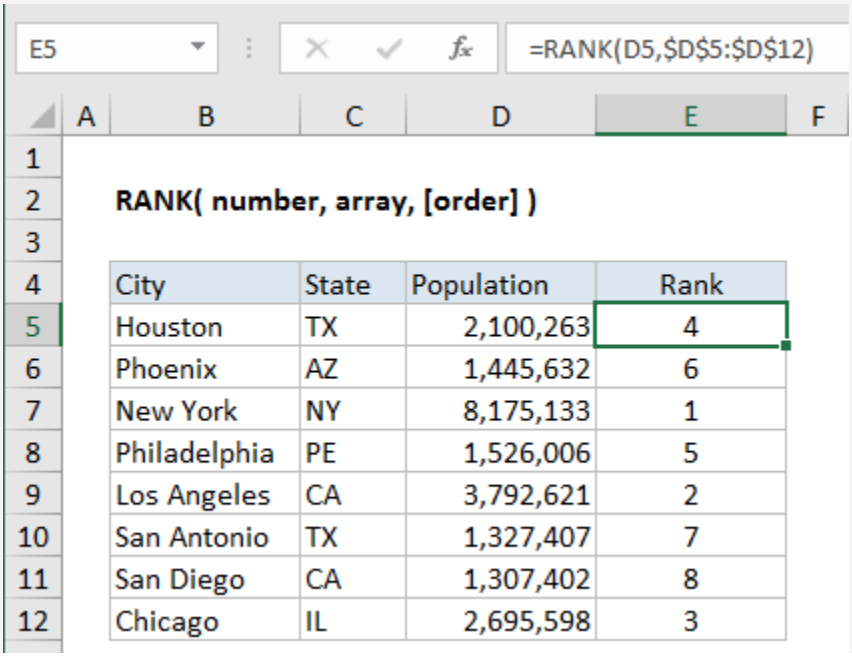
   Syntax: =CORREL(array1, array2)



	A	B	C	D	E	F	G	H	I
27									
28	PRODUCT	DEMAND	CORREL						
29									
30	100	1000	-0.87991156						
31	110	950	-88%						
32	105	970							
33	95	1050							
34	90	1250							
35	115	925							
36									

9. **RANK():**The Excel RANK function returns the rank of a numeric value when compared to a list of other numeric values. RANK can rank values from largest to smallest (i.e. top sales) as well as smallest to largest (i.e. fastest time) values, using an optional **order** argument.
   Syntax:=RANK (number, array, [order])

number - The number to rank.
array - An array that contains the numbers to rank against.
order - [optional] Whether to rank in ascending or descending order.



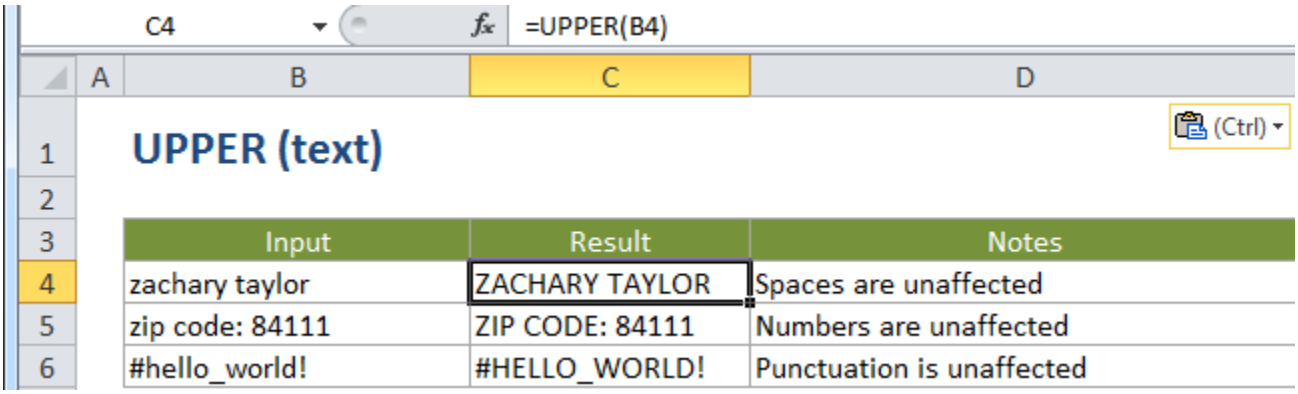
	A	B	C	D	E	F
1						
2		RANK(number, array, [order])				
3						
4		City	State	Population	Rank	
5		Houston	TX	2,100,263	4	
6		Phoenix	AZ	1,445,632	6	
7		New York	NY	8,175,133	1	
8		Philadelphia	PE	1,526,006	5	
9		Los Angeles	CA	3,792,621	2	
10		San Antonio	TX	1,327,407	7	
11		San Diego	CA	1,307,402	8	
12		Chicago	IL	2,695,598	3	

3. TEXT FUNCTIONS

Use these text based functions to search and replace data and other text related tasks.

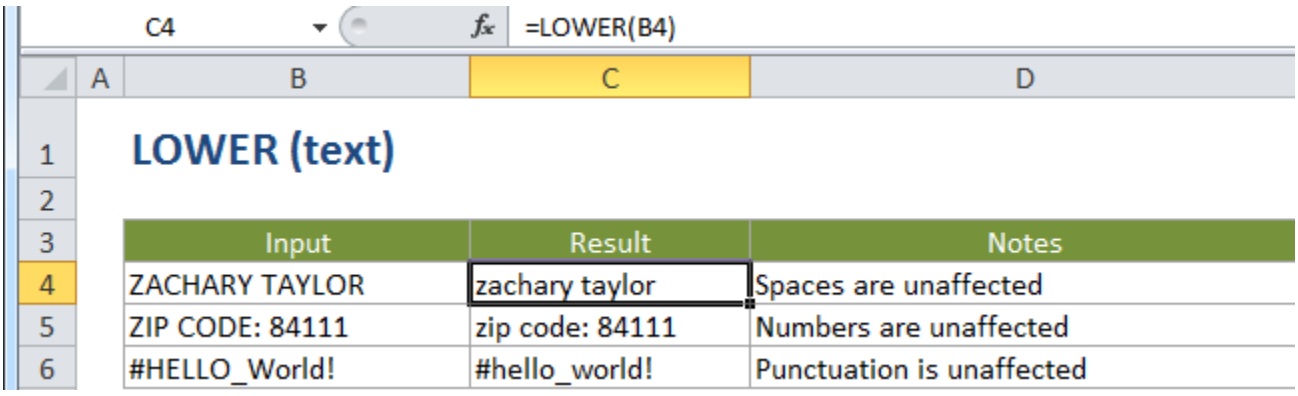
1. **UPPER():**The Excel UPPER function returns a upper-case version of a given text string. Numbers and punctuation are not affected.

   Syntax: =UPPER (text)



2. **LOWER():**The Excel LOWER function returns a lower-case version of a given text string. Numbers and punctuation are not affected.

   Syntax: =LOWER (text)



3. **PROPER():**The Excel PROPER function capitalizes words given text string. Numbers and punctuation are not affected.

   Syntax: =PROPER (text)

C4 =PROPER(B4)

PROPER (text)

Input	Result	Notes
zachary taylor	Zachary Taylor	Spaces are unaffected
To be or not to be	To Be Or Not To Be	All words are capitalized
san diego, CA	San Diego, Ca	Existing capitalization may be affected

4. **LEFT():**The Excel LEFT function extracts a given number of characters from the left side of a supplied text string. For example, LEFT("apple",3) returns "app"

   Syntax: =LEFT (text, [num_chars])

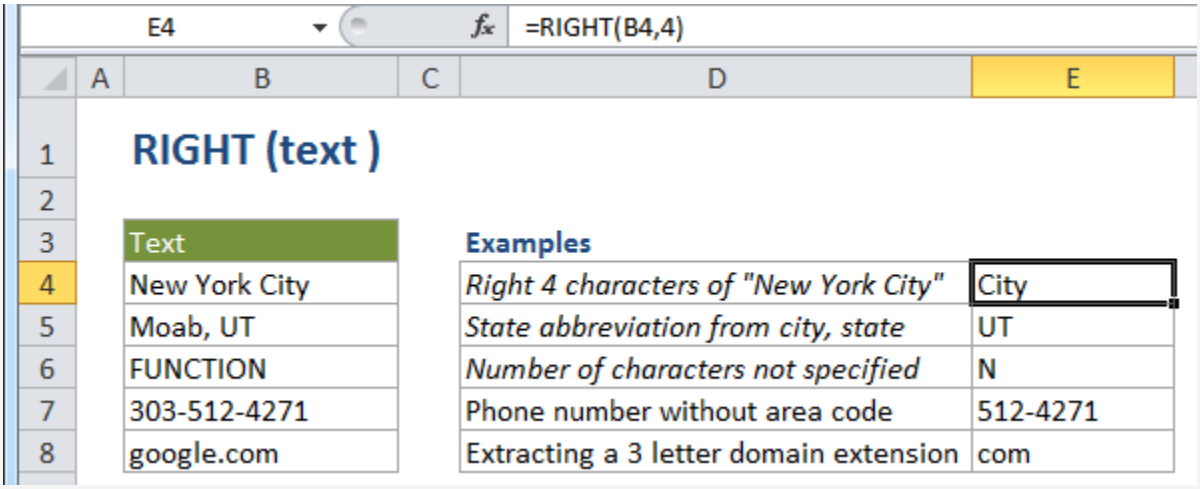
C5 =LEFT(B5,3)

LEFT (text)

Text	Result	Comment
New York City	New	Left 3 characters of "New York"
New York City	New York	Left 8 characters of "New York"
84111-0001	84111	Standard 5 digits of a zip code
303-512-4271	303	Area code of a phone number

5. **RIGHT():**The Excel RIGHT function extracts a given number of characters from the right side of a supplied text string. For example, RIGHT("apple",3) returns "ple".

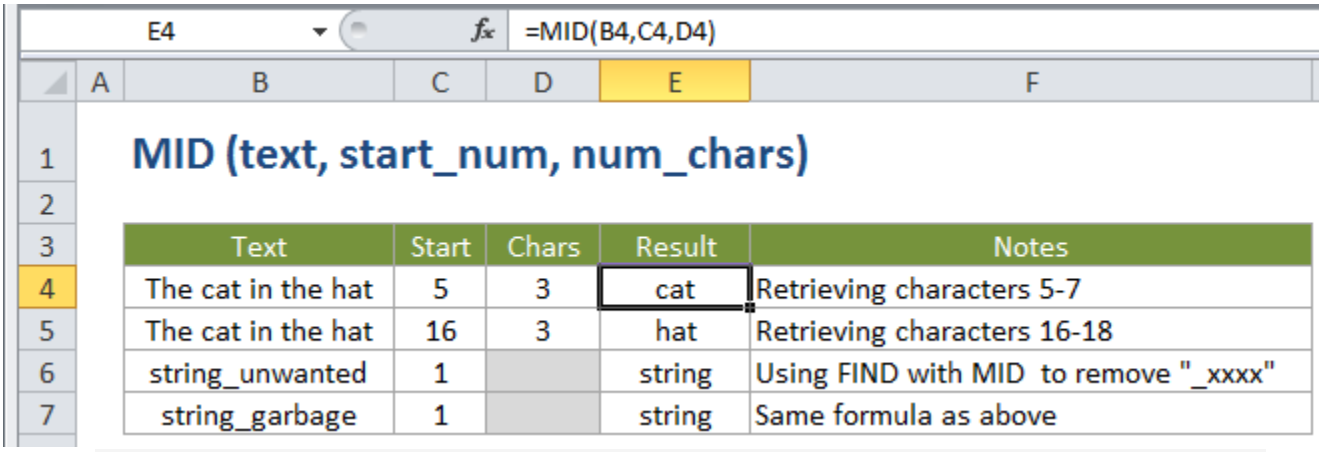
   Syntax: =RIGHT (text, [num_chars])



6. **MID():**The Excel MID function extracts a given number of characters from the middle of a supplied text string. For example, =MID("apple",2,3) returns "ppl".

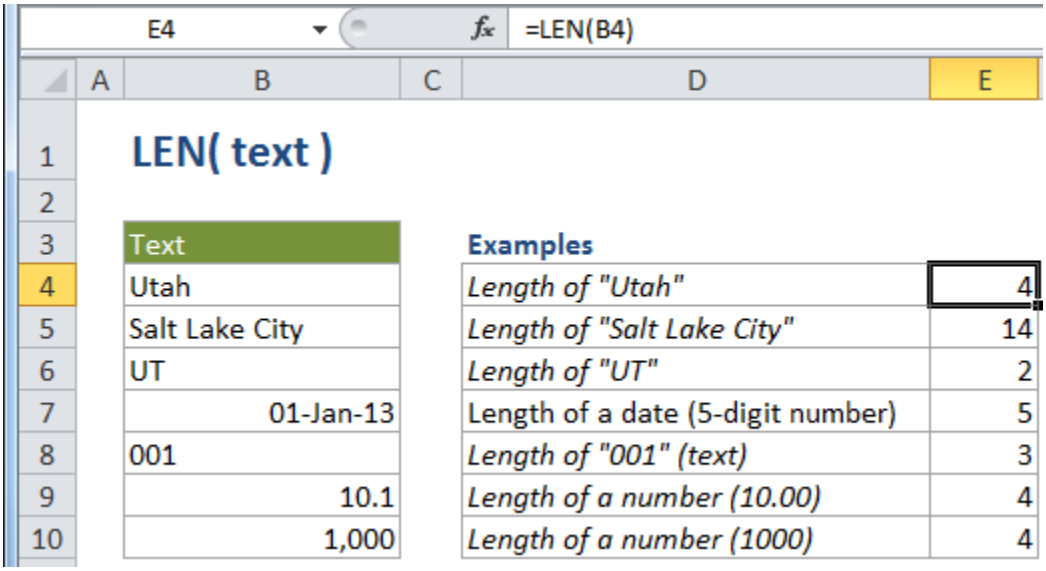
   Syntax: =MID (text, start_num, num_chars)

   text - The text to extract from.
   start_num - The location of the first character to extract.
   num_chars - The number of characters to extract.



7. **LEN():**The Excel LEN function returns the length of a given text string as the number of characters. LEN will also count characters in numbers, but number formatting is not included.

   Syntax: =LEN (text)

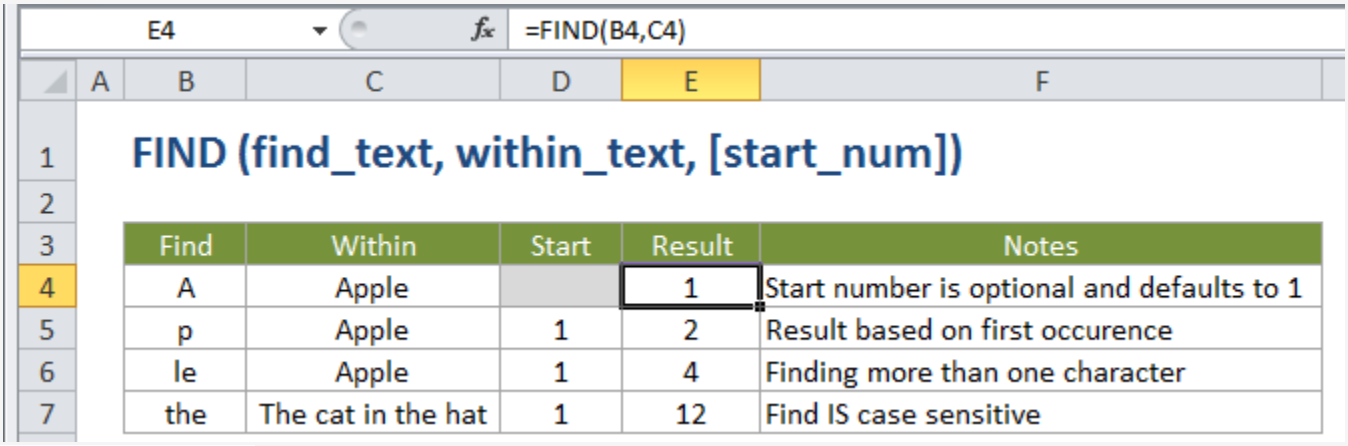


8. **FIND():**The Excel FIND function returns the position (as a number) of one text string inside another. When the text is not found, FIND returns a #VALUE error

Syntax: =FIND (find_text, within_text, [start_num])

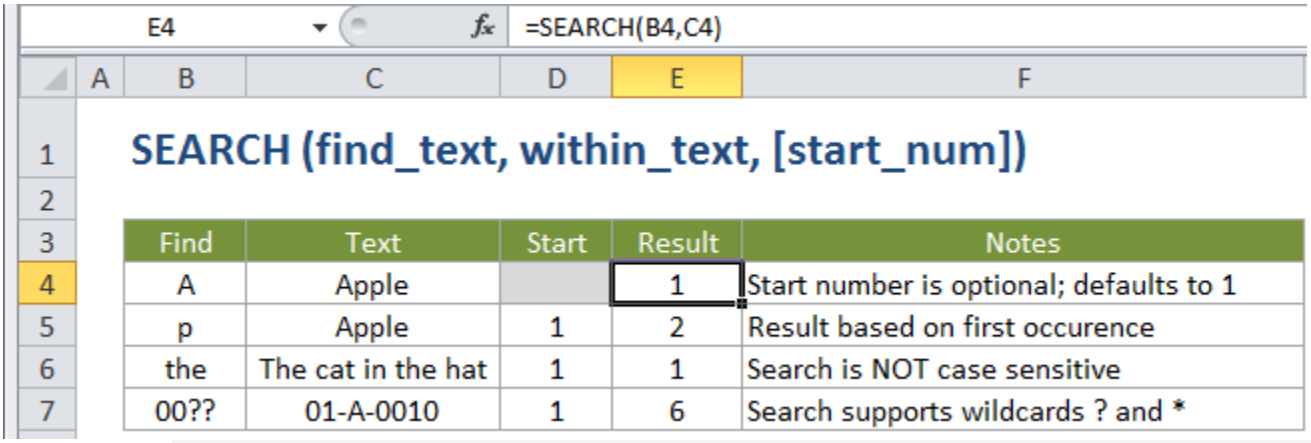
find_text - The text to find.
within_text - The text to search within.
start_num - [optional] The starting position in the text to search. Optional, defaults to 1.

- FIND is case-sensitive and does not support wildcards.
- Use the SEARCH function to search without case-sensitivity and/or to use wildcards.



9. **SEARCH():**The Excel SEARCH function returns the location of one text string inside another. SEARCH returns the position of the first character of find_text inside within_text. Unlike FIND, SEARCH allows wildcards, and is not case-sensitive.

Syntax: =SEARCH (find_text, within_text, [start_num])

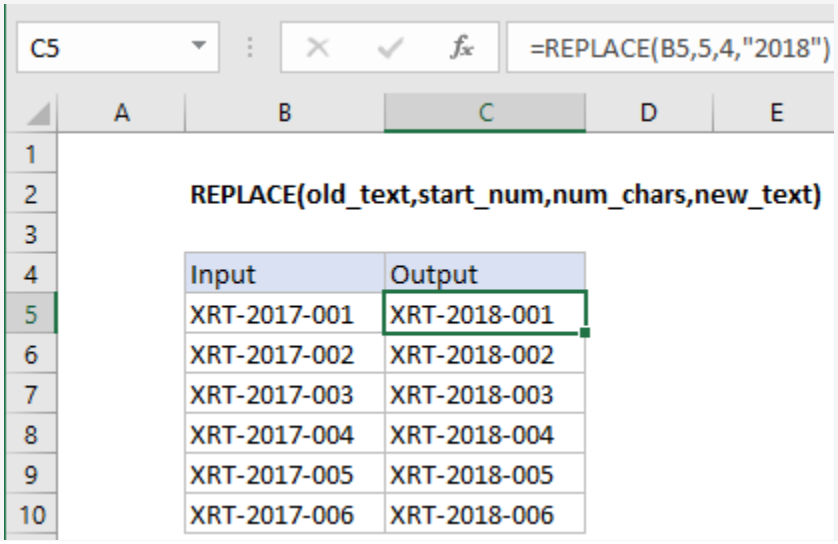


Find	Text	Start	Result	Notes
A	Apple		1	Start number is optional; defaults to 1
p	Apple	1	2	Result based on first occurence
the	The cat in the hat	1	1	Search is NOT case sensitive
00??	01-A-0010	1	6	Search supports wildcards ? and *

10. REPLACE(): The Excel REPLACE function replaces characters specified by location in a given text string with another text string. For example =REPLACE("XYZ123",4,3,"456") returns "XYZ456".

Syntax: =REPLACE (old_text, start_num, num_chars, new_text)

old_text - The text to replace.
start_num - The starting location in the text to search.
num_chars - The number of characters to replace.
new_text - The text to replace old_text with.

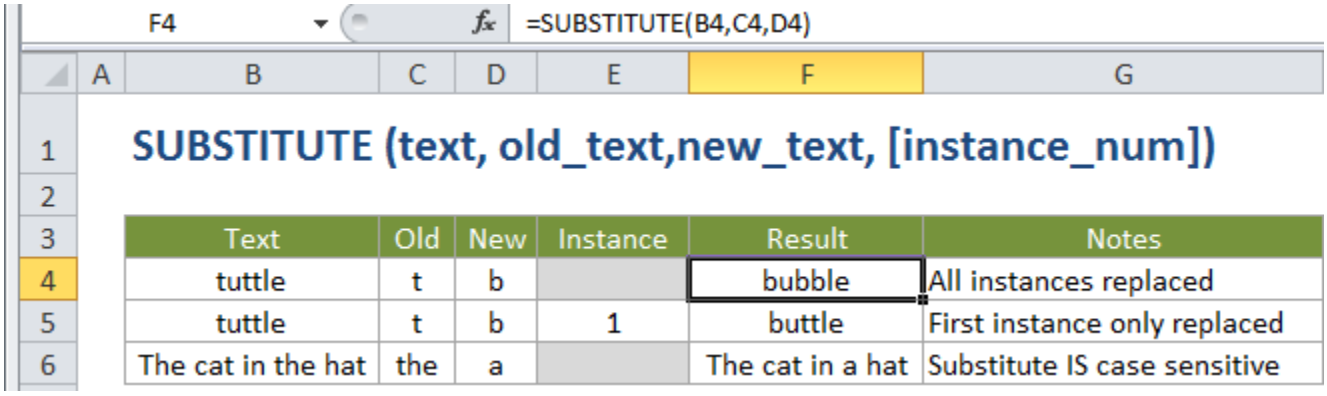


Input	Output
XRT-2017-001	XRT-2018-001
XRT-2017-002	XRT-2018-002
XRT-2017-003	XRT-2018-003
XRT-2017-004	XRT-2018-004
XRT-2017-005	XRT-2018-005
XRT-2017-006	XRT-2018-006

11. SUBSTITUTE(): The Excel SUBSTITUTE function replaces text in a given string by matching. For example =SUBSTITUTE("952-455-7865","-","") returns "9524557865"; the dash is stripped. SUBSTITUTE is case-sensitive and does not support wildcards.

Syntax: =SUBSTITUTE (text, old_text, new_text, [instance])

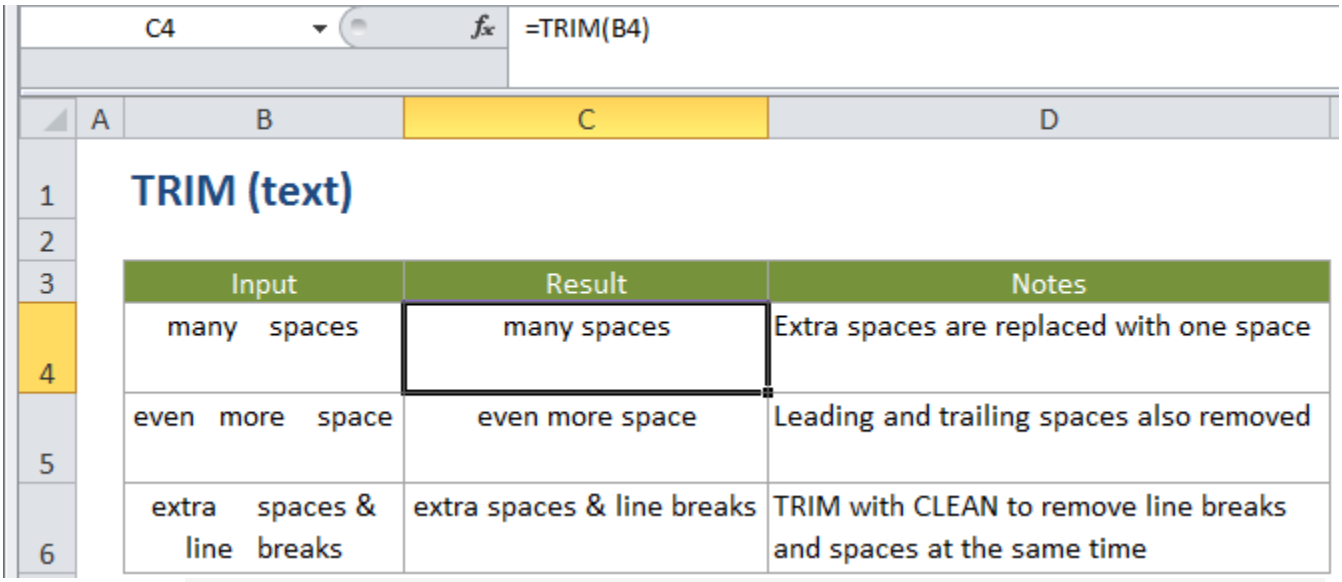
text - The text to change.
old_text - The text to replace.
new_text - The text to replace with.
instance - [optional] The instance of old_text to replace with new_text. Optional; if not supplied, all instances of old_text are replaced with new_text.



Text	Old	New	Instance	Result	Notes
tuttle	t	b		bubble	All instances replaced
tuttle	t	b	1	buttle	First instance only replaced
The cat in the hat	the	a		The cat in a hat	Substitute IS case sensitive

12.TRIM(): The Excel TRIM function strips extra spaces from text, leaving only a single space between words and no space characters at the start or end of the text.

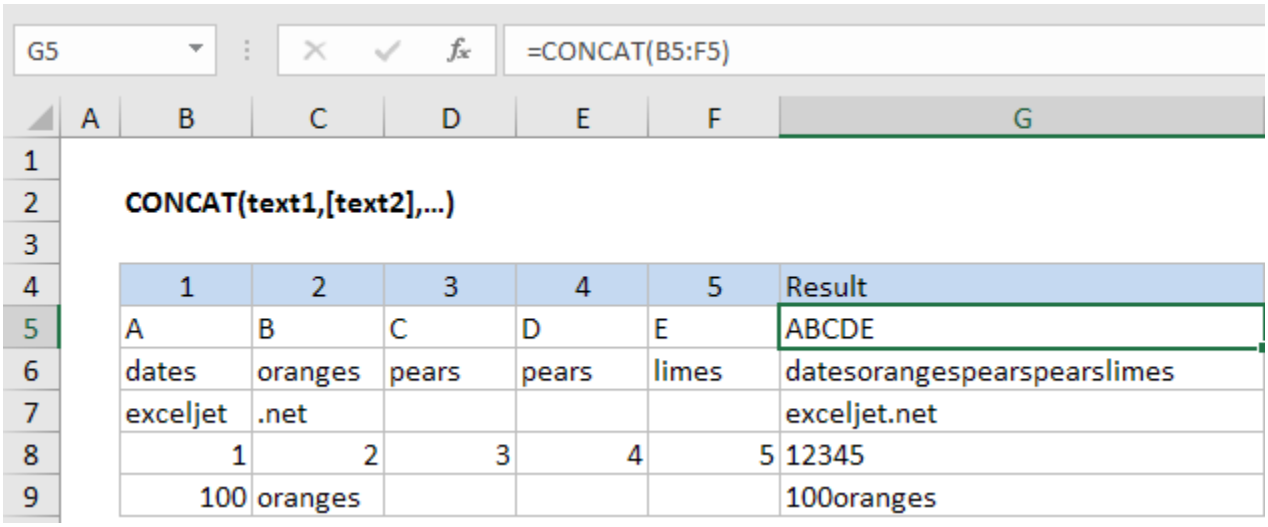
Syntax: =TRIM (text)



Input	Result	Notes
many spaces	many spaces	Extra spaces are replaced with one space
even more space	even more space	Leading and trailing spaces also removed
extra spaces & line breaks	extra spaces & line breaks	TRIM with CLEAN to remove line breaks and spaces at the same time

13.CONCATE(): The Excel CONCAT function concatenates (joins) values supplied as references or constants. Unlike the CONCATENATE function (which CONCAT replaces), CONCAT allows you to supply a range of cells to join, in addition to individual cell references.

Syntax: =CONCAT (text1, [text2], ...)



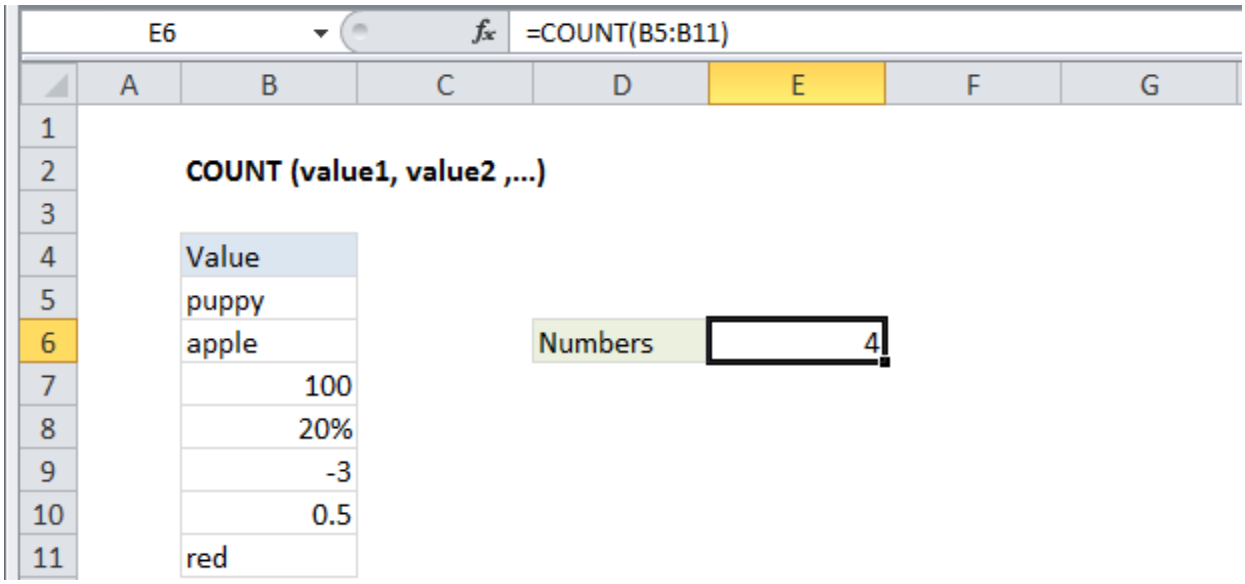
1	2	3	4	5	Result
A	B	C	D	E	ABCDE
dates	oranges	pears	pears	limes	datesorangespearspearslimes
exceljet	.net				exceljet.net
1	2	3	4	5	12345
100	oranges				100oranges

4. COUNT FUNCTIONS

1 **COUNT():**The Excel COUNT function returns the count of values that are numbers, generally cells that contain numbers. Values can be supplied as constants, cell references, or ranges.

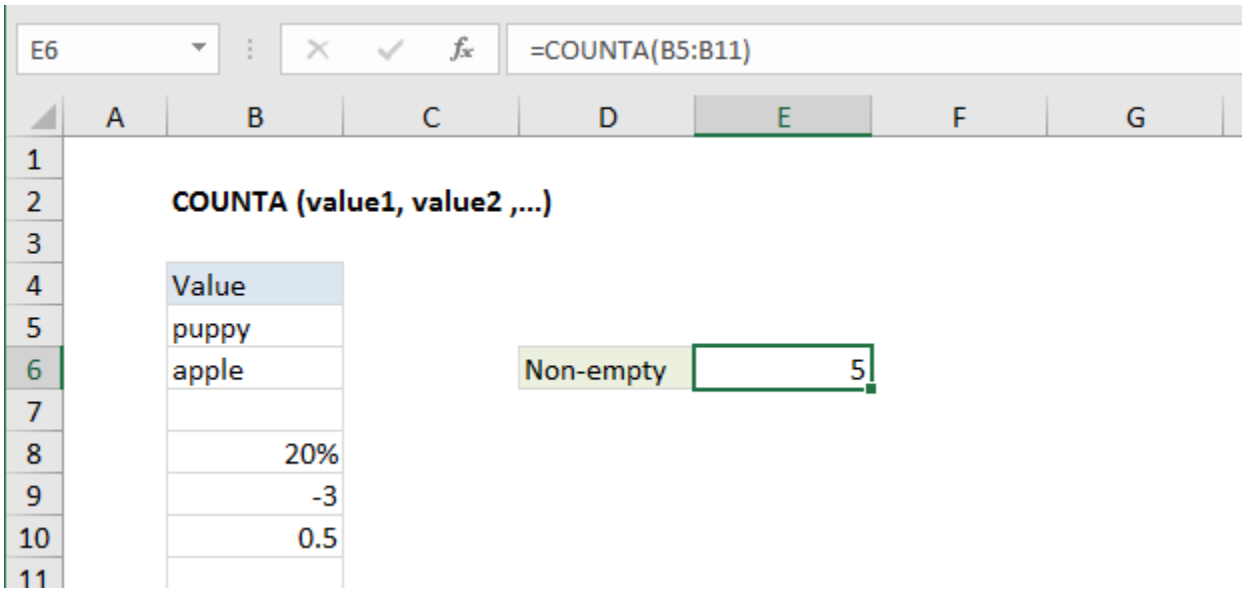
Syntax:=COUNT (value1, [value2], ...)

value1 - An item, cell reference, or range.
value2 - [optional] An item, cell reference, or range.



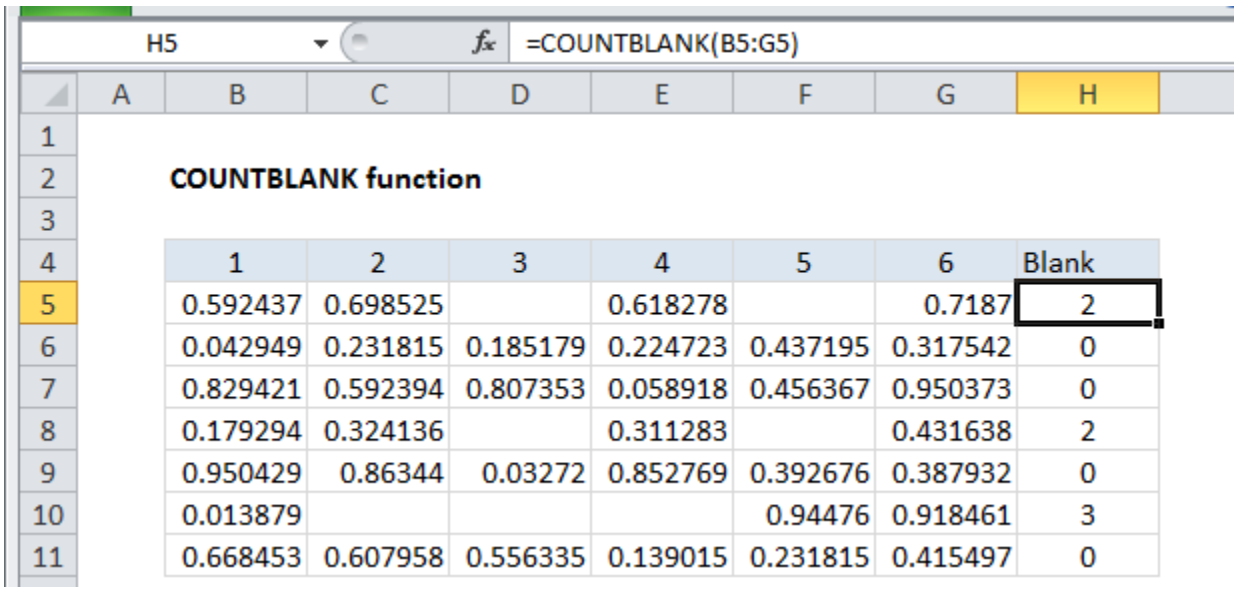
2 **COUNTA():**The Excel COUNTA function returns the count of cells that contain numbers, text, logical values, error values, and empty text (""). COUNTA does not count empty cells.

Syntax: =COUNTA (value1, [value2], ...)



3 **COUNTBLANCK():**The Excel COUNTBLANK function returns a count of empty cells in a range. Cells that contain text, numbers, errors, etc. are not counted. Formulas that return empty text are counted.

Syntax:=COUNTBLANK (range)

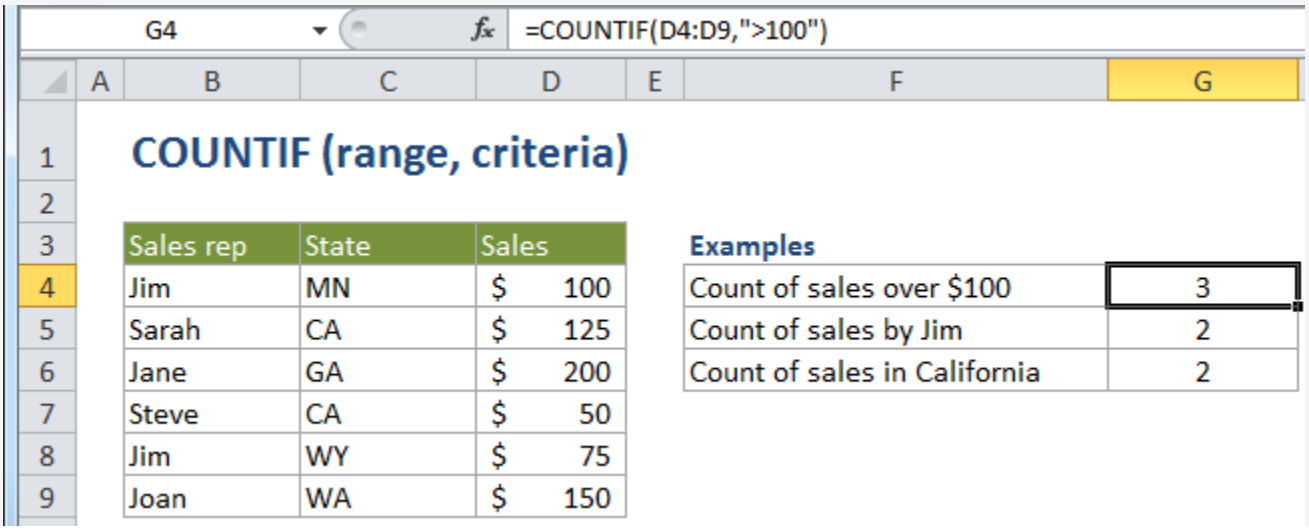


1	2	3	4	5	6	Blank
0.592437	0.698525		0.618278		0.7187	2
0.042949	0.231815	0.185179	0.224723	0.437195	0.317542	0
0.829421	0.592394	0.807353	0.058918	0.456367	0.950373	0
0.179294	0.324136		0.311283		0.431638	2
0.950429	0.86344	0.03272	0.852769	0.392676	0.387932	0
0.013879				0.94476	0.918461	3
0.668453	0.607958	0.556335	0.139015	0.231815	0.415497	0

4 **COUNTIF():**COUNTIF is a function to count cells that meet a single criteria. COUNTIF can be used to count cells with dates, numbers, and text that match specific criteria. The COUNTIF function supports logical operators (>,<,<>,=) and wildcards (*,?) for partial matching.

Syntax:=COUNTIF (range, criteria)

range - The range of cells to count.
criteria - The criteria that controls which cells should be counted.



5. DATE-TIME FUNCTIONS

1 **TODAY():** The Excel TODAY function returns the current date, updated continuously when a worksheet is changed or opened. The TODAY function takes no arguments.

Syntax: TODAY()[MM:DD:YYYY FORMAT]

TODAY← A1 CELL	TODAY(A1)	12/16/2018

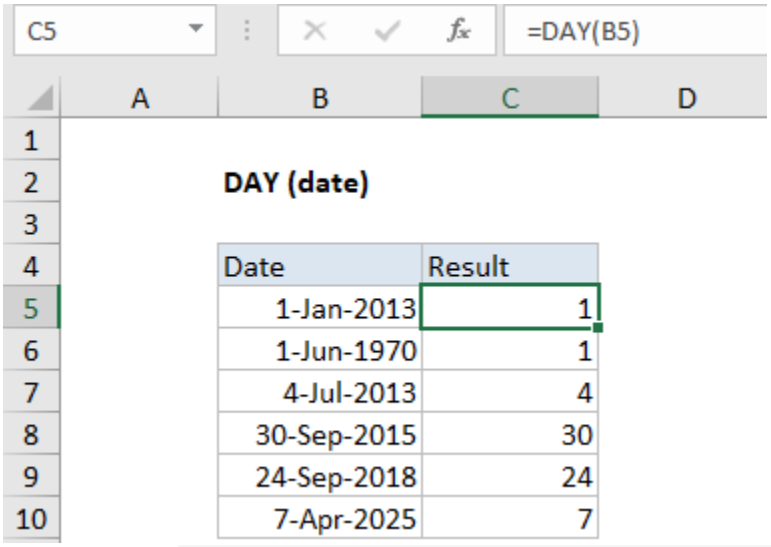
2 **NOW():** The Excel NOW function returns the current date and time, updated continuously when a worksheet is changed or opened. The NOW function takes no arguments. You can format the value returned by NOW as a date, or as a date with time by applying a number format.

Syntax: NOW() [24 HOUR FORMAT]

NOW← A1 CELL	NOW(A1)	12/16/2018 20:54

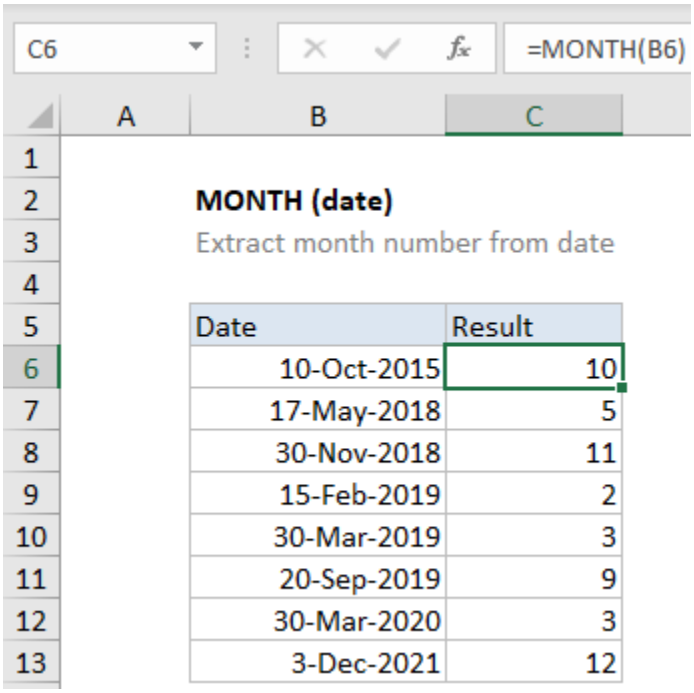
3 **DAY():** The Excel DAY function returns the day of the month as a number between 1 to 31 from a given date. You can use the DAY function to extract a day number from a date into a cell.

Syntax:=DAY (date)



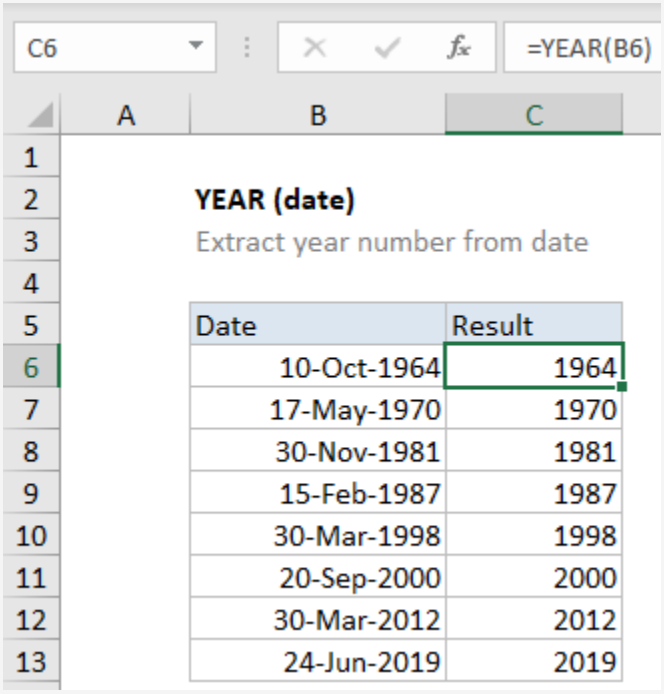
4 **MONTH():** The Excel MONTH function extracts the month from a given date as number between 1 to 12. You can use the MONTH function to extract a month number from a date into a cell.

Syntax: =MONTH (date)



5 **YEAR():** The Excel YEAR function returns the year component of a date as a 4-digit number. You can use the YEAR function to extract a year number from a date into a cell

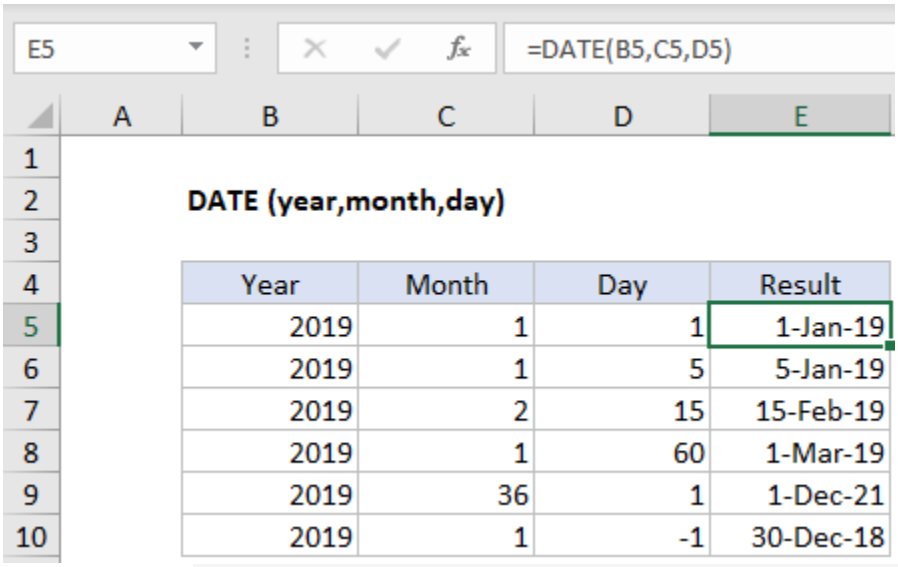
Syntax:=YEAR (date)



Date	Result
10-Oct-1964	1964
17-May-1970	1970
30-Nov-1981	1981
15-Feb-1987	1987
30-Mar-1998	1998
20-Sep-2000	2000
30-Mar-2012	2012
24-Jun-2019	2019

6 **DATE():** The Excel DATE function creates a valid date from individual year, month, and day components. The DATE function is useful for assembling dates that need to change dynamically based on other values in a worksheet.

Syntax: =DATE (year, month, day)

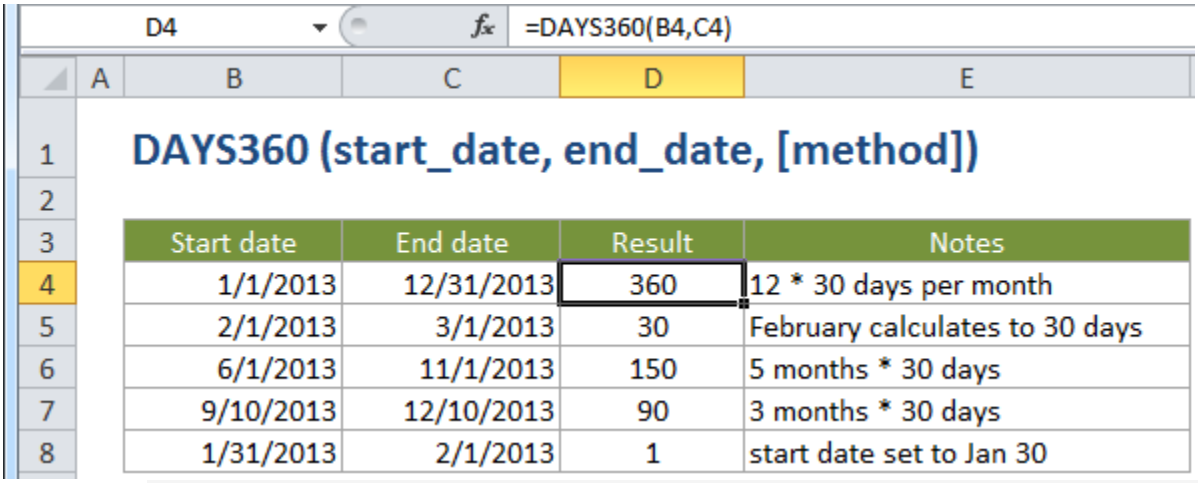


Year	Month	Day	Result
2019	1	1	1-Jan-19
2019	1	5	5-Jan-19
2019	2	15	15-Feb-19
2019	1	60	1-Mar-19
2019	36	1	1-Dec-21
2019	1	-1	30-Dec-18

7 **DAYS360():** The Excel DAYS360 function returns the number of days between two dates based on a 360-day year. Calculations based on a 360-day year comes from certain accounting calculations where all 12 months are considered to have 30 days

Syntax: =DAYS360 (start_date, end_date, [method])

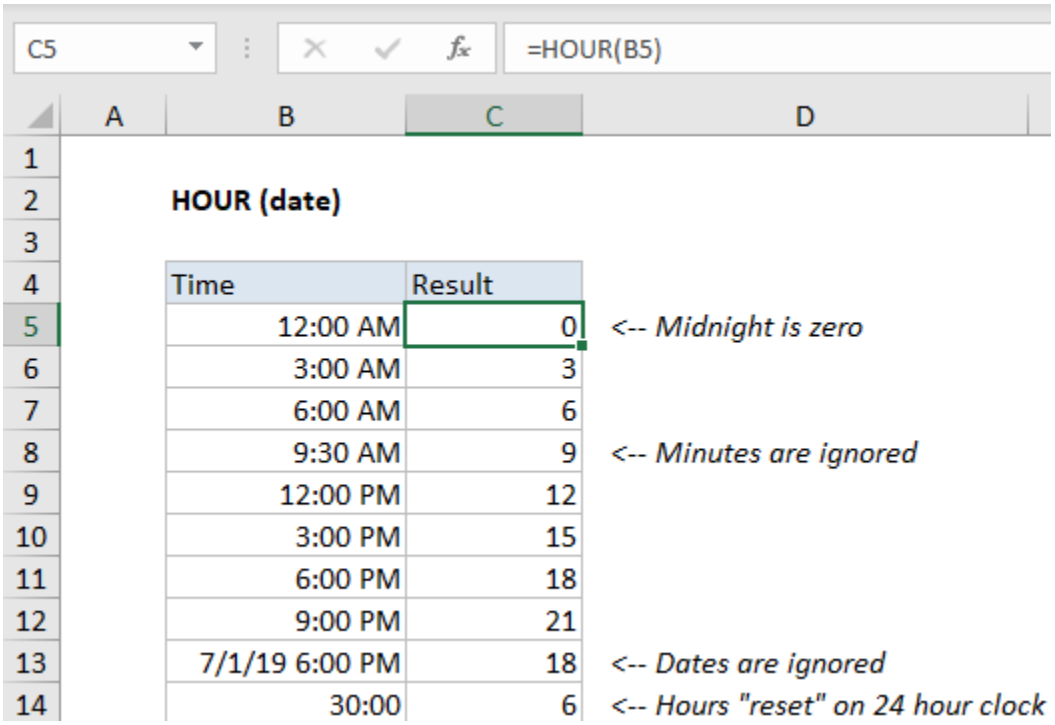
method - [optional] The type of day count basis to use. FALSE (default) is US method, TRUE is European method.



Start date	End date	Result	Notes
1/1/2013	12/31/2013	360	12 * 30 days per month
2/1/2013	3/1/2013	30	February calculates to 30 days
6/1/2013	11/1/2013	150	5 months * 30 days
9/10/2013	12/10/2013	90	3 months * 30 days
1/31/2013	2/1/2013	1	start date set to Jan 30

8 **HOUR():** The Excel HOUR function returns the hour component of a time as a number between 0-23. For example, with a time of 9:30 AM, HOUR will return 9. You can use the HOUR function to extract the hour into a cell,

Syntax: =HOUR (serial_number)



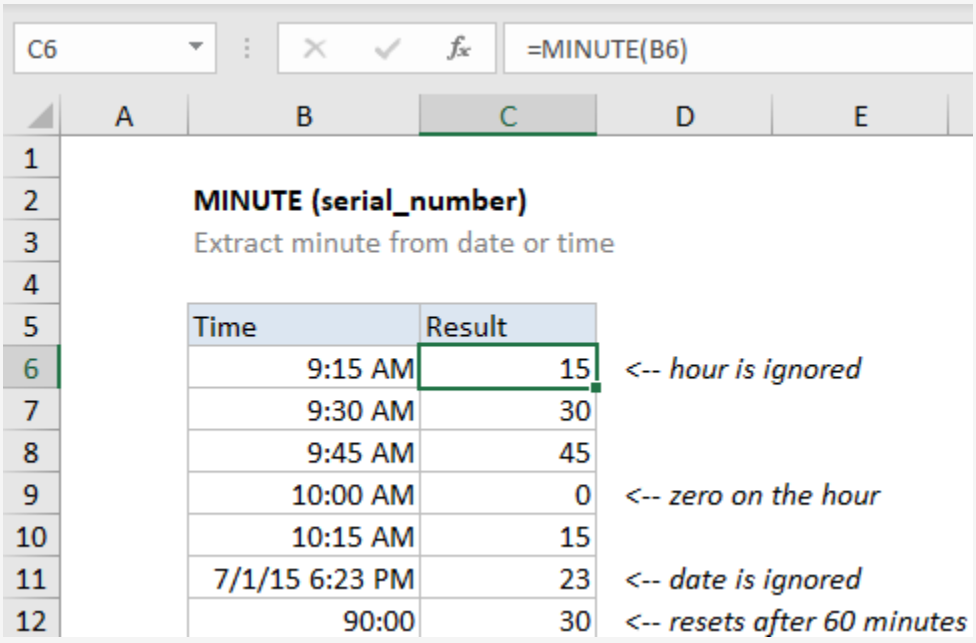
C5 | =HOUR(B5)

HOUR (date)

Time	Result	
12:00 AM	0	<-- *Midnight is zero*
3:00 AM	3	
6:00 AM	6	
9:30 AM	9	<-- *Minutes are ignored*
12:00 PM	12	
3:00 PM	15	
6:00 PM	18	
9:00 PM	21	
7/1/19 6:00 PM	18	<-- *Dates are ignored*
30:00	6	<-- *Hours "reset" on 24 hour clock*

9 **MINUTE():**The Excel MINUTE function extracts the minute component of a time as a number between 0-59. For example, with a time of 9:45 AM, minute will return 45. You can use the MINUTE function to extract the minute into a cell.

Syntax:=MINUTE (serial_number)



C6 | =MINUTE(B6)

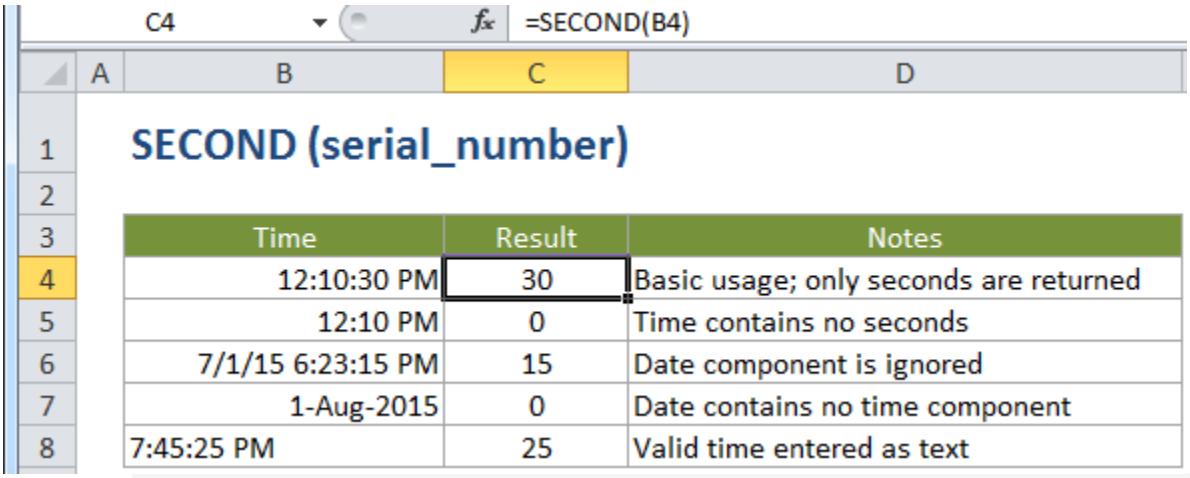
MINUTE (serial_number)

Extract minute from date or time

Time	Result	
9:15 AM	15	<-- *hour is ignored*
9:30 AM	30	
9:45 AM	45	
10:00 AM	0	<-- *zero on the hour*
10:15 AM	15	
7/1/15 6:23 PM	23	<-- *date is ignored*
90:00	30	<-- *resets after 60 minutes*

10 SECOND(): The Excel SECOND function returns the second component of a time as a number between 0-59. For example, with a time of 9:10:15 AM, second will return 15. You can use the SECOND function to extract the second into a cell.

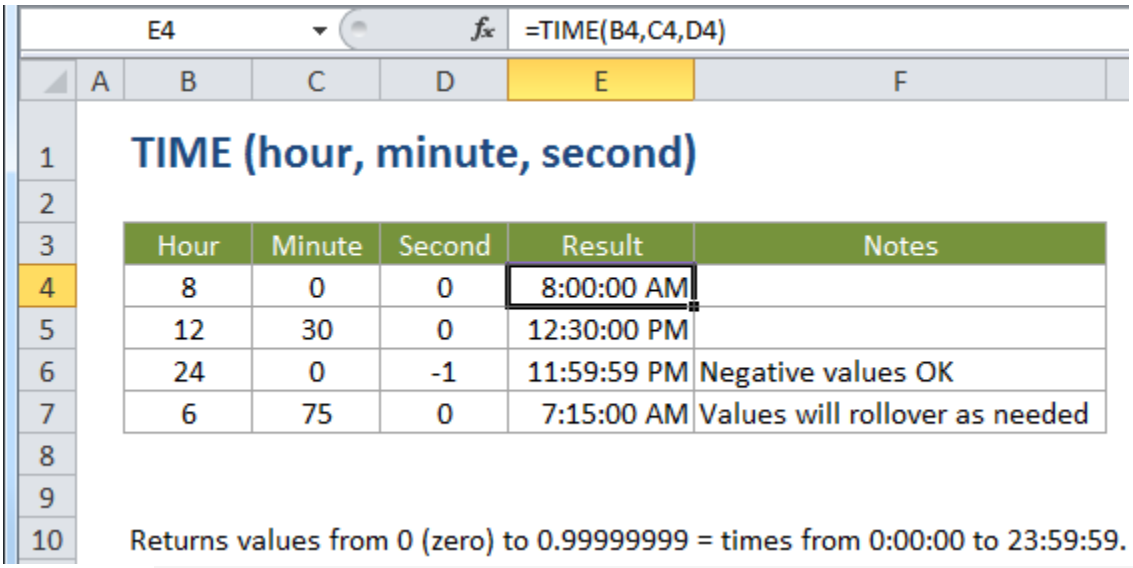
Syntax:=SECOND (serial_number)



Time	Result	Notes
12:10:30 PM	30	Basic usage; only seconds are returned
12:10 PM	0	Time contains no seconds
7/1/15 6:23:15 PM	15	Date component is ignored
1-Aug-2015	0	Date contains no time component
7:45:25 PM	25	Valid time entered as text

11 TIME(): The Excel TIME function is a built-in function that allows you to create a time with individual hour, minute, and second components. The TIME function is useful when you want to assemble a proper time inside another formula.

Syntax: =TIME (hour, minute, second)

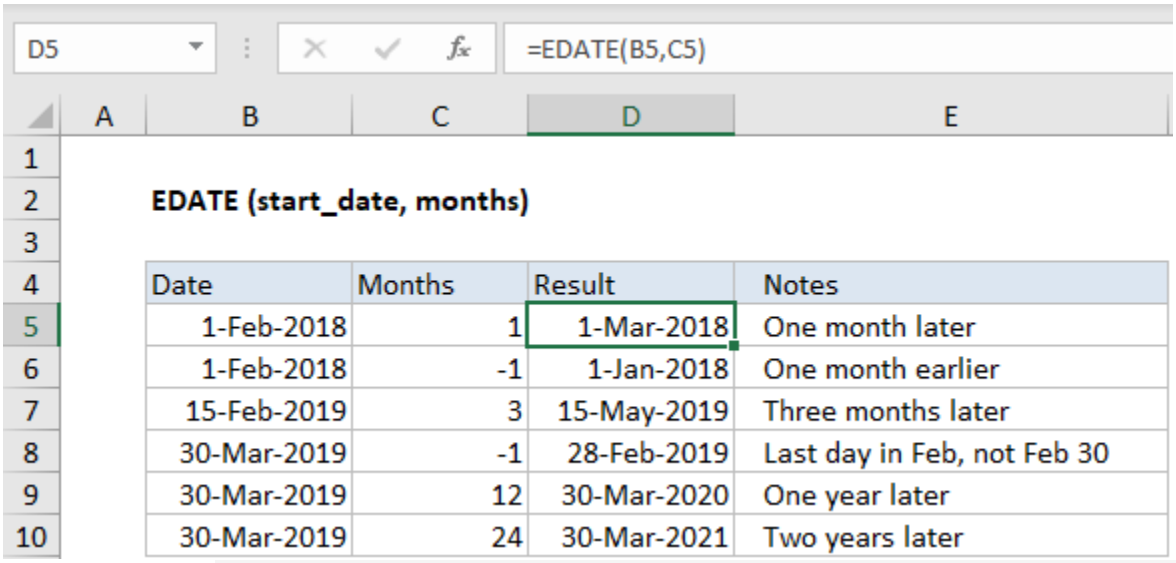


Hour	Minute	Second	Result	Notes
8	0	0	8:00:00 AM	
12	30	0	12:30:00 PM	
24	0	-1	11:59:59 PM	Negative values OK
6	75	0	7:15:00 AM	Values will rollover as needed

12 EDATE(): The Excel EDATE function returns a date on the same day of the month, n months in the past or future. You can use EDATE to calculate expiration dates, maturity

dates, and other due dates. Use a positive value for months to get a date in the future, and a negative value for dates in the past.

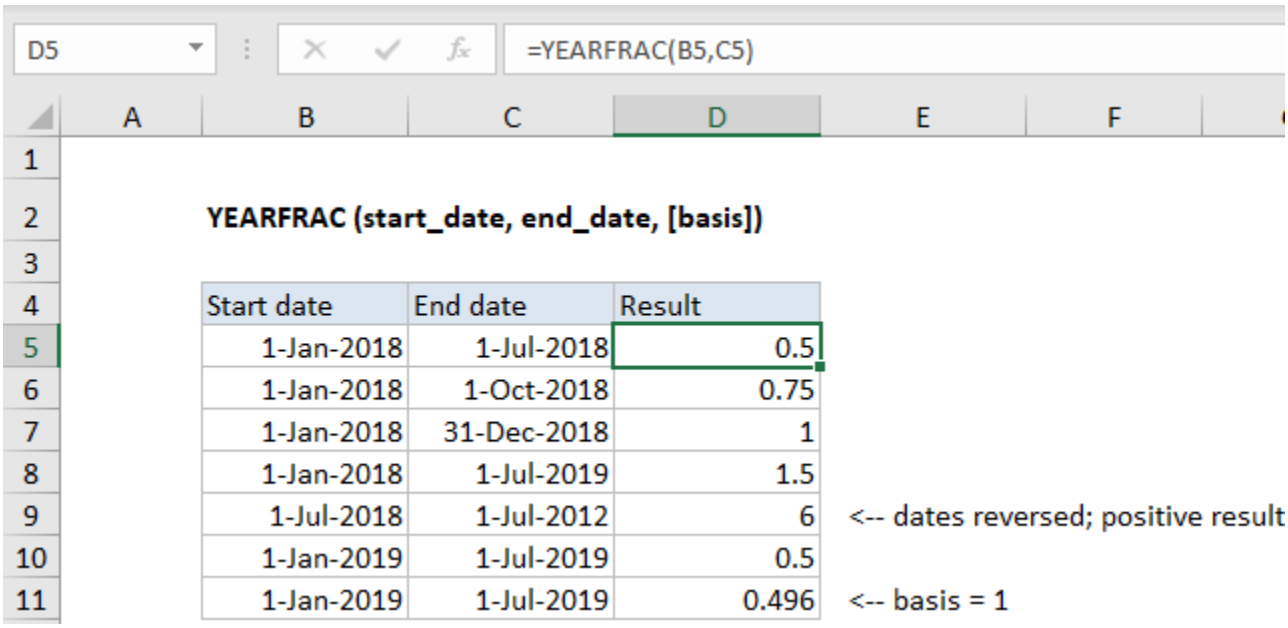
Syntax: =EDATE (start_date, months)



Date	Months	Result	Notes
1-Feb-2018	1	1-Mar-2018	One month later
1-Feb-2018	-1	1-Jan-2018	One month earlier
15-Feb-2019	3	15-May-2019	Three months later
30-Mar-2019	-1	28-Feb-2019	Last day in Feb, not Feb 30
30-Mar-2019	12	30-Mar-2020	One year later
30-Mar-2019	24	30-Mar-2021	Two years later

13 YEARFRAC(): The Excel YEARFRAC function returns a decimal value that represents fractional years between two dates. You can use YEARFRAC to do things like calculate age with a birthdate.

Syntax: =YEARFRAC (start_date, end_date)



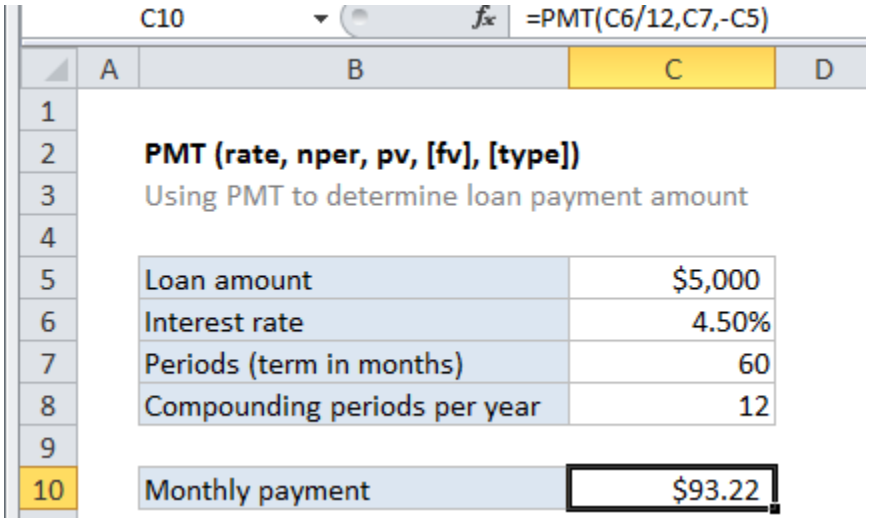
Start date	End date	Result	
1-Jan-2018	1-Jul-2018	0.5	
1-Jan-2018	1-Oct-2018	0.75	
1-Jan-2018	31-Dec-2018	1	
1-Jan-2018	1-Jul-2019	1.5	
1-Jul-2018	1-Jul-2012	6	<-- dates reversed; positive result
1-Jan-2019	1-Jul-2019	0.5	
1-Jan-2019	1-Jul-2019	0.496	<-- basis = 1

6) FINANCIAL FUNCTIONS

1 . PMT(): The Excel PMT function is a financial function that returns the periodic payment for a loan. You can use the NPER function to figure out payments for a loan, given the loan amount, number of periods, and interest rate.

Syntax: =PMT (rate, nper, pv, [fv], [type])

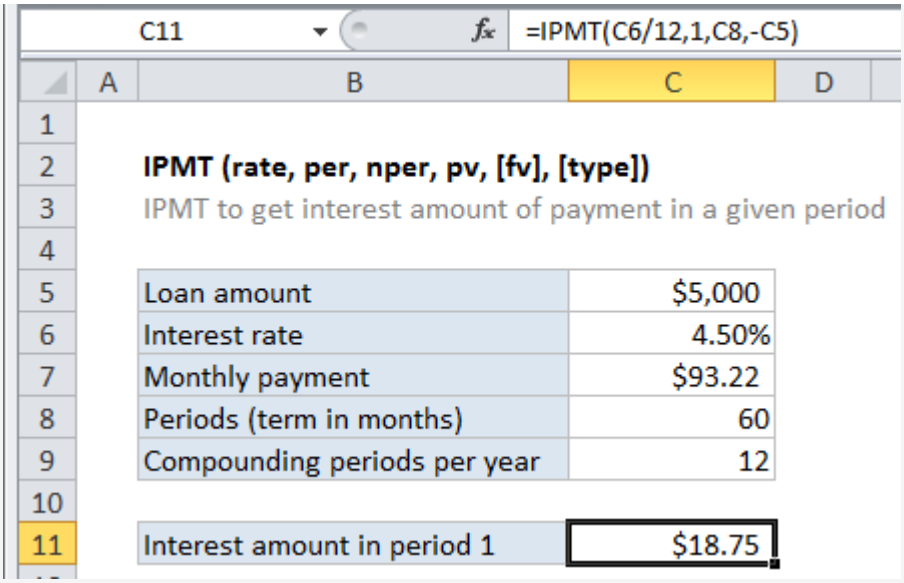
rate - The interest rate for the loan.
nper - The total number of payments for the loan.
pv - The present value, or total value of all loan payments now.
fv - [optional] The future value, or a cash balance you want after the last payment is made. Defaults to 0 (zero).
type - [optional] When payments are due. 0 = end of period. 1 = beginning of period. Default is 0.



2.IPMT(): The Excel IPMT function can be used to calculate the interest portion of a given loan payment in a given payment period. For example, you can use IPMT to get the interest amount of a payment for the first period, the last period, or any period in between

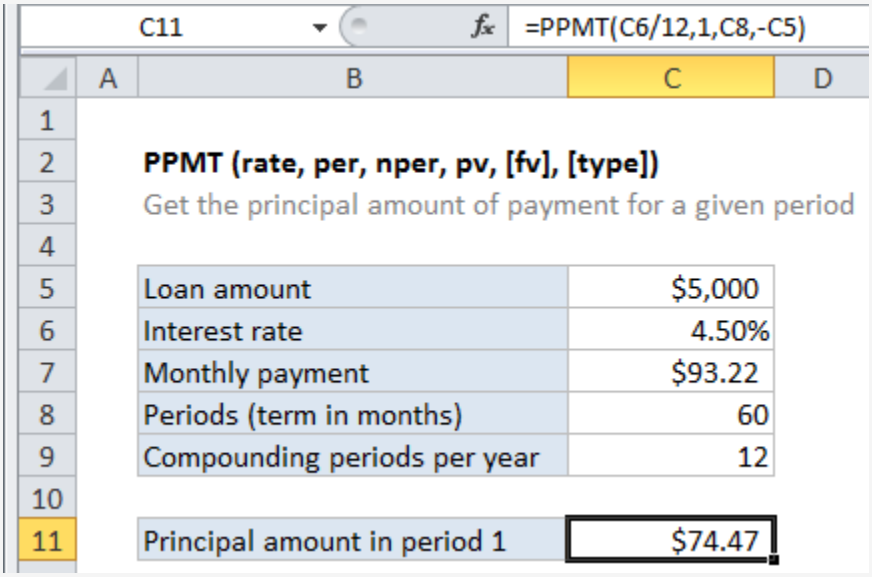
Syntax: =IPMT (rate, per, nper, pv, [fv], [type])

per - The payment period of interest.



3.PPMT(): The Excel PPMT function can be used to calculate the principal portion of a given loan payment. For example, you can use PPMT to get the principal amount of a payment for the first period, the last period, or any period in between.

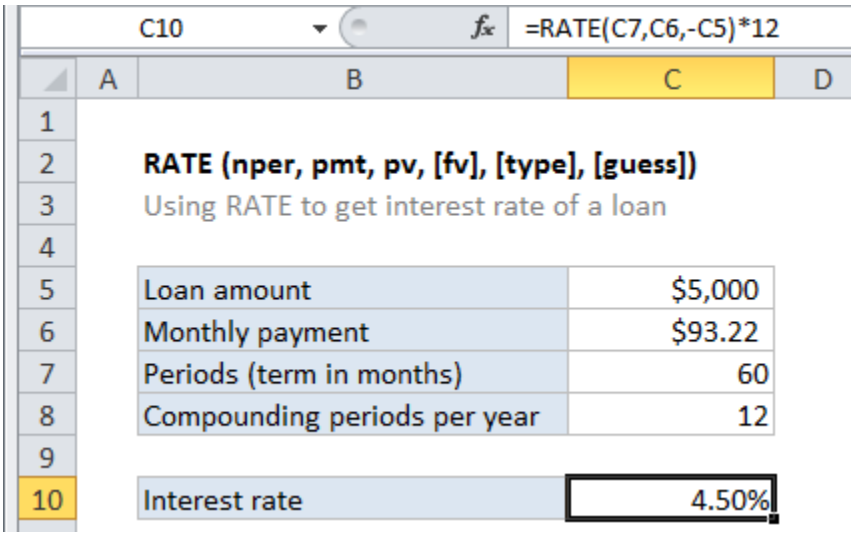
Syntax: =PPMT (rate, per, nper, pv, [fv], [type])



4.RATE(): The Excel RATE function is a financial function that returns the interest rate per period of an annuity. You can use RATE to calculate the periodic interest rate, then multiply as required to derive the annual interest rate. The RATE function calculates by iteration.

Syntax: =RATE (nper, pmt, pv, [fv], [type], [guess])

nper - The total number of payment periods.
pmt - The payment made each period.
pv - The present value, or total value of all loan payments now.
fv - [optional] The future value, or desired cash balance after last payment. Default is 0.
type - [optional] When payments are due. 0 = end of period. 1 = beginning of period. Default is 0.
guess - [optional] Your guess on the rate. Default is 10%.

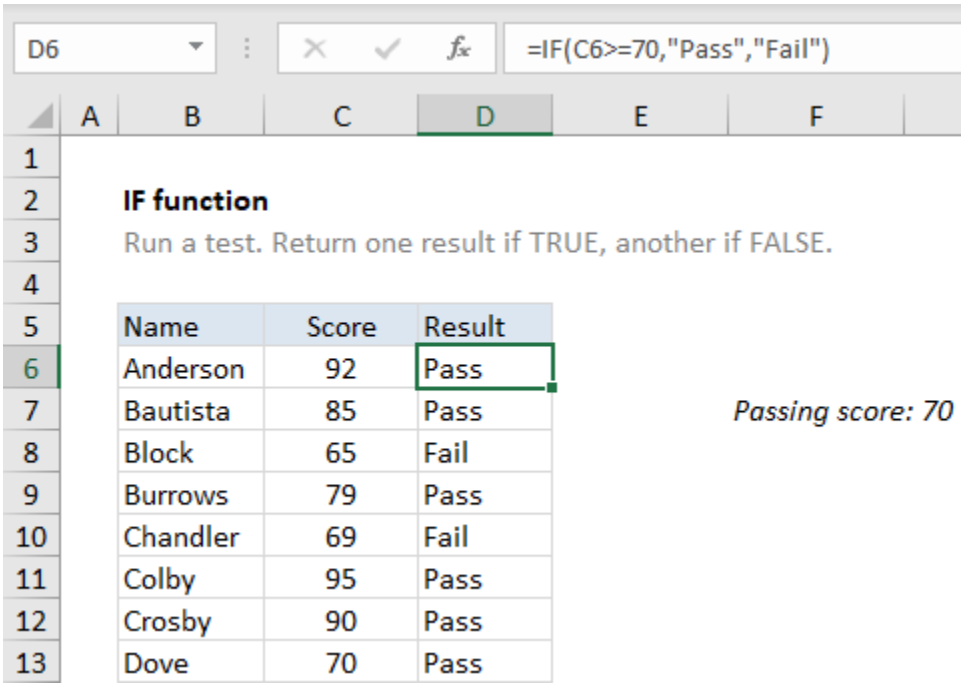


7) LOGICAL FUNCTIONS

IF(): The IF function can perform a logical test and return one value for a TRUE result, and another for a FALSE result. For example, to "pass" scores above 70: =IF(A1>70,"Pass","Fail"). More than one condition can be tested by nesting IF functions. The IF function can be combined with logical functions like AND and OR.

Syntax: =IF (logical_test, [value_if_true], [value_if_false])

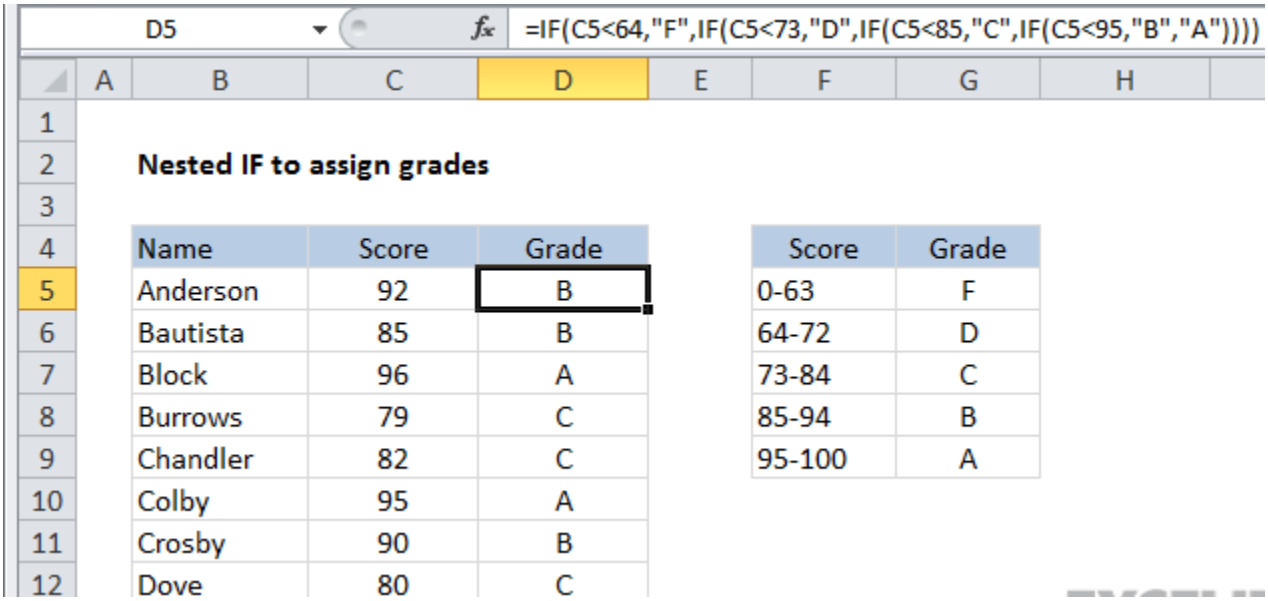
logical_test - A value or logical expression that can be evaluated as TRUE or FALSE.
value_if_true - [optional] The value to return when logical_test evaluates to TRUE.
value_if_false - [optional] The value to return when logical_test evaluates to FALSE.



Name	Score	Result
Anderson	92	Pass
Bautista	85	Pass
Block	65	Fail
Burrows	79	Pass
Chandler	69	Fail
Colby	95	Pass
Crosby	90	Pass
Dove	70	Pass

2.NESTEDIF(): More than one condition can be tested by nesting IF functions

Syntax: =NESTED IF (test1, value1, [test2, value2], ...)

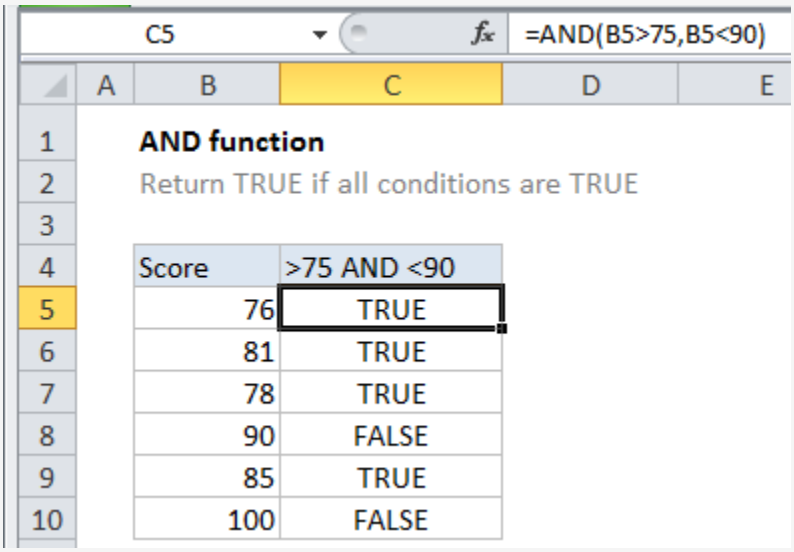


Name	Score	Grade
Anderson	92	B
Bautista	85	B
Block	96	A
Burrows	79	C
Chandler	82	C
Colby	95	A
Crosby	90	B
Dove	80	C

Score	Grade
0-63	F
64-72	D
73-84	C
85-94	B
95-100	A

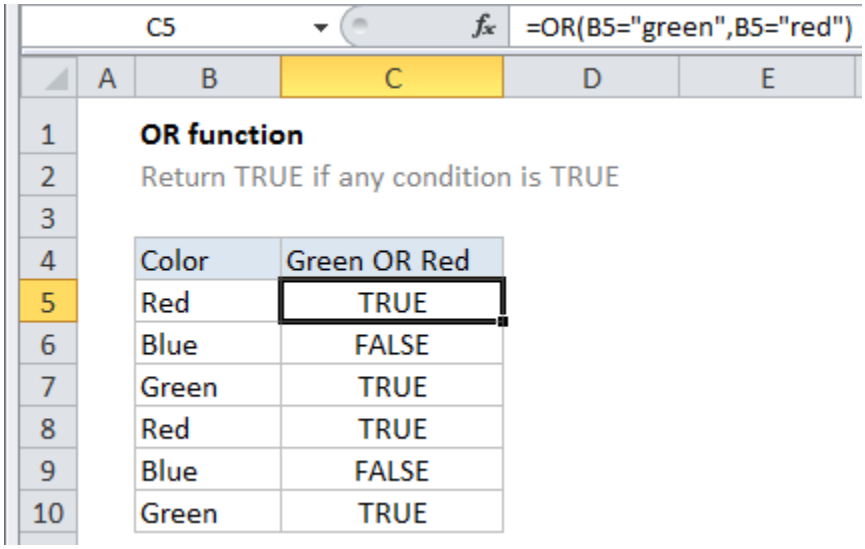
3.AND(): The AND function is a logical function used to require more than one condition at the same time. AND returns either TRUE or FALSE. To test if a number in A1 is greater than zero and less than 10, use =AND(A1>0,A1<10). The AND function can be used as the logical test inside the IF function to avoid extra nested IFs, and can be combined with the OR function.

Syntax: =AND (logical1, [logical2], ...)



4.OR(): The OR function is a logical function to test multiple conditions at the same time. OR returns either TRUE or FALSE. For example, to test A1 for either "x" or "y", use =OR(A1="x",A1="y"). The OR function can be used as the logical test inside the IF function to avoid extra nested IFs, and can be combined with the AND function.

Syntax: =OR (logical1, [logical2], ...)



5.NOT(): The Excel NOT function returns the opposite of a given logical or boolean value. When given TRUE, NOT returns FALSE.When given FALSE, NOT returns TRUE. Use the NOT function to reverse a logical value.

Syntax: =NOT (logical)

1. When **logical** is FALSE, NOT returns TRUE.
2. When **logical** is TRUE, NOT returns FALSE.