

Formulas and Functions



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List of Excel Formulas and Functions

Excel boasts a vast library of functions, but don't be overwhelmed! We'll explore the most essential functions grouped into intuitive categories. Here is the list of Excel Formulas and Functions. We have included Excel functions, Description, Syntax. Explained with Example Formulas.

Popular Functions

- 1. **IF:** Evaluates a condition and returns a specific value if true, another if false. Powerful for building complex decision-making formulas.
- 2. **AND:** Returns TRUE only if all specified conditions are true.
- 3. **OR:** Returns TRUE if any specified condition is true.
- 4. **<u>SUM</u>**: Adds values across a range of cells. A fundamental function for basic calculations.
- 5. **AVERAGE**: Calculates the average of a set of numbers.
- 6. **COUNT:** Counts the number of cells containing numbers, text, or logical values.
- 7. **CONCAT**: Combines multiple text strings into a single string. Useful for merging names, addresses, etc.
- 8. **LEFT**: Extracts a specific number of characters from the left side of a text string.
- 9. **<u>RIGHT</u>**: Extracts a specific number of characters from the right side of a text string.
- 10. **LEN**:Counts the number of characters in a text string.
- 11. **TODAY:** Returns the current date.
- 12. **VLOOKUP:** Searches for a specific value in a leftmost column and returns a corresponding value from another column in the same row. A workhorse for lookups across worksheets.
- 13. **INDEX & MATCH:** A powerful combination for flexible lookups within your spreadsheets.
- 14. **<u>COUNTIF</u>**: Counts the number of cells meeting a specific criteria.
- 15. **<u>SUMIF</u>:** Sums the values in a range based on a specific condition.

Information Functions

Get to Know Your Spreadsheet Better with Information Functions! These tools reveal details about cells, formatting, and workbook properties. Whether you need to check a cell's data type (ISNUMBER, ISTEXT) or access workbook information (INFO), these functions provide valuable insights into the inner workings of your spreadsheet.

- **Reveal details** about cells, formatting, and workbook properties.
- **Become a Spreadsheet Detective:** Information Functions act as your eyes and ears, revealing hidden details about your data.
- **Cell Secrets Exposed:** Uncover cell formatting, data types, and location with the CELL function.
- Workbook Wisdom: Get the inside scoop on your workbook using INFO, like the number of sheets or protection status.
- **Data Type Discrimination:** Distinguish between blank cells (ISBLANK), numbers (ISNUMBER), or text (ISTEXT) for cleaner formulas.

Function	Description	Syntax and Formula
CELL	The CELL function returns	<pre>Syntax: CELL(info_type, [reference])</pre>
	information about the	
	formatting, location, or	Formula: CELL("filename",A1)This
	contents of a cell.	example returns the file name of the
		workbook containing the cell A1.
ERROR.TYPE	The ERROR.TYPE	Syntax: ERROR.TYPE(error_val)
	function returns a number	
	that corresponds to a	Formula:
	specific error value in	ERROR.TYPE(#VALUE!)This will
	Microsoft Excel.	return the number 2, which corresponds
		to the #VALUE! error.
INFO	Description: The INFO	Syntax: INFO(type)
	function is an information	
	runction in Excel that	Formula: INFO("numfile") I his
	the operating environment	example returns the number of currently
ICDI ANIZ	The ISBL ANK function in	Syntox: ISBLANK(volue)
ISDLAINK	Excel checks if a cell is	Syntax: ISBLANK(value)
	empty or not	Formula: ISBL ANK(A1) This formula
	empty of not.	will return TRUE if cell A1 is empty
		and FALSE if it is not.
ISERR	The ISERR function in	Svntax: ISERR(value)
	Microsoft Excel is a logical	v
	function that returns TRUE	Formula: ISERR(A1)In this example,
	when the value provided is	the ISERR function will return TRUE if
	an error value other than	the value in cell A1 is an error value,
	#N/A, and FALSE when the	and FALSE if it is not.
	value is not an error value.	
ISERROR	The ISERROR function is	Syntax: ISERROR(value)
	used to check if a value is	
	an error and returns either	Formula: ISERROR(A1)
	TRUE OF FALSE.	Comform ICEVENI(complexe)
ISEVEN	The ISE VEN function is	Syntax: ISE VEIN(number)
	number is even or odd	Formula: ISEVEN(2) will return
	number is even of oud.	TRUE because 2 is an even number
ISFORMULA	The ISFORMULA function	Syntax: ISFORMULA(cell)
	in Excel is used to check if	
	a cell contains a formula. It	Formula: To check if cell A1 contains a
	returns TRUE if the cell	formula, the following formula can be
	contains a formula and	used:=ISFORMULA(A1)
	FALSE if it does not.	
ISLOGICAL	The ISLOGICAL function	Syntax: ISLOGICAL(value)
	is used to check if a value is	

	a logical value (TRUE or FALSE).	Formula: ISLOGICAL(TRUE) returns
		TRUE
ISNA	The ISNA function in Excel	Syntax: ISNA(value)
	is used to check whether a	
	given value is the #N/A	Formula: ISNA(A1)If A1 contains the
	error value.	#N/A error value, then the ISNA
		function will return TRUE. Otherwise, it
		will return FALSE.
ISNONTEXT	The ISNONTEXT function	Syntax: ISNONTEXT(value)
	is used to check if a value is	Syntaxi IST(ST(TEATT(Value)
	not text. It returns TRUE if	Formula: ISNONTEXT("Hello")This
	the value is not text and	will return EALSE as "Hello" is text
	EALSE if it is toxt	will feturil FALSE as field is text.
	TALSE II II IS lext.	Samtory ICNUMPED(asha)
ISNUMBER	The ISNUMBER function	Syntax: ISINUMBER(value)
	is used to determine if a	
	value is a number or not.	Formula: ISNUMBER(A1) will return
		TRUE if AI contains a number, and
		FALSE if A1 does not contain a
		number.
ISODD	The ISODD function is used	Syntax: ISODD(number)
	to check if a number is odd.	
	It returns TRUE if the	Formula: ISODD(3)This will return
	number is odd and FALSE	TRUE because 3 is an odd number.
	if the number is even.	
ISOMITTED	The ISOMITTED function	Syntax: ISOMITTED(value)
	in Excel checks whether a	
	value is omitted from a list	Formula: ISOMITTED(A1)
	of values.	
ISREF	The ISREF function checks	Syntax: ISREF(value)
	if a cell reference is valid.	
		Formula: ISREF(A1) returns TRUE if
		A1 is a valid cell reference, FALSE if
		not.
ISTEXT	The ISTEXT function is a	Syntax: ISTEXT(value)
	built-in function in Excel	
	that checks to see if a cell	Formula: ISTEXT(A1)This formula
	contains text. It returns	will return TRUE if the value in cell A1
	TRUE if the value is text	is text and FALSE if not.
	and FALSE if not.	
NPER	The NPER function in	Syntax: NPER(rate, pmt, py, [fy],
	Excel is used to calculate	[type])
	the number of periods for an	
	investment based on a	Formula: To calculate the number of
	constant payment and a	periods for an investment of \$1000 with
	constant payment and a	perious for an investment of \$1000 with
	constant interest fate.	

		a payment of \$50 and an interest rate of 5%:NPER(5%, -50, 1000)Result: 20
NA	The NA function returns the #N/A error value, which indicates that a value is not available.	Syntax: NA() Formula: NA()
SHEET	SHEET is an Excel function that returns the sheet number of a reference.	Syntax: SHEET(reference) Formula: SHEET(A1)This would return the sheet number of the cell A1.
SHEETS	The SHEETS function returns the number of sheets in a reference.	Syntax: SHEETS(reference) Formula: SHEETS("Sheet1:Sheet3")This would return the number 3, since the reference includes three sheets.
ТҮРЕ	TYPE: The TYPE function is an Excel Information function that returns a number indicating the type of value in a cell.	Syntax: TYPE(value) Formula: TYPE(A1)If cell A1 contains the value "Hello", the result of the function would be 1, indicating that the value is a text string.

Text Functions

Transform and Cleanse Your Text Data: Text data in your spreadsheets needs some TLC? Text Functions are your one-stop shop! Whether you need to combine text strings (CONCATENATE), extract specific characters (LEFT, RIGHT), or format casing (UPPER, LOWER), these functions offer unparalleled control over text manipulation and cleaning.

- Combine text strings (CONCATENATE).
- Extract specific characters (LEFT, RIGHT).
- Format casing (UPPER, LOWER).
- Clean and format customer data or extract information from text strings.

Function	Description	Syntax and Formula
ASC	The ASC function	Syntax: ASC(text)
	in Microsoft Excel	
	is used to convert	Formula: ASC("A")The result of this formula
	a character into its	would be 65, which is the ASCII code for the
	corresponding	letter A.
	ASCII code.	
ARRAYTOTEXT	The	Syntax: ARRAYTOTEXT(array, delimiter,
	ARRAYTOTEXT	[text_qualifier])

	function in Excel	
	converts an array	Formula:
	of values into a	ARRAYTOTEXT({1,2,3,4,5},",","")Result:
	text string.	'1','2','3','4','5'
BAHTTEXT	BAHTTEXT is an	Syntax: BAHTTEXT(number)
	Excel function that	•
	converts a number	Formula: BAHTTEXT(12345)Result:
	to Thai text.	???????????????????????????????????????
CHAR	The CHAR	Syntax: CHAR(number)
	function returns	•
	the character	Formula: CHAR(65)This will return the
	specified by the	character "A".
	number code.	
CLEAN	The CLEAN	Svntax: CLEAN(text)
	function removes	
	all non-printable	Formula: CLEAN("Hello!@#\$%^&*World")
	characters from a	Result: HelloWorld
	text string	
CODE	The CODE	Syntax: CODE(text)
CODE	function is used to	Syntax CODE(tox)
	convert a text	Formula: CODE("A") returns 65
	string into a code	
	with a	
	corresponding	
	numerical value	
CONCAT	The CONCAT	Syntax: $CONCAT(text1 [text2])$
CONCAL	function in Excel	Syntax. CONCAT(uxt1, [uxt2],)
	is used to join two	Formula: CONCAT("Hello " "World")
	or more text	Popult: Hollo World
	strings together	Kesuit. Heno wond
	Supports Panges	CONCAT(A1:A5) concatenated all information
	Supports Kanges.	in the Dange A 1: A 5
CONCATENATE	The	Suptove CONCATENATE/toxt1 [toxt2] [toxt2]
CUNCALENALE	THE	Sylicax: CONCATENATE(lexi1, [lexi2], [lexi5],]
	CONCATENATE function is used to)
	isin two or more	Earmandae CONCATENATE ("11alla")
	join two or more	" "Wandd" Degult Halle Wandd
	text strings	, world) Result: Hello world
	logether. Can not	
DDCC	nandle ranges.	Contract DDCC(144 have field origin)
DBCS	function is a	Symax: DBCS(database, field, criteria)
	function is a	Formula
	in Mission function	
	that all server that all server	DBCS(customers', name', state= CA'')
	that allows you to	
	extract data from a	
	database.	

DOLLAR	The DOLLAR function converts a	Syntax: DOLLAR(number, [decimals])
	number to text, using a currency format.	Formula: DOLLAR(A2, 2)This example will convert the number in cell A2 to text, using two decimal places.
EXACT	The EXACT function compares two text strings and returns TRUE if the two strings are exactly the same, including case and any spaces.	Syntax: EXACT(text1, text2) Formula: EXACT("Apple","apple")Result: FALSE
FIXED	The FIXED function in Excel is used to round a number to a specified number of decimal places and display it as a text string with a fixed number of decimal places.	Syntax: FIXED(number, [decimals], [no_commas]) Formula: FIXED(123.4567,2,TRUE)Result: 123.46
LEFT, LEFTB	LEFT: The LEFT function in Excel returns the leftmost characters from a text string. And LEFTB returns the leftmost characters based on the bytes.	 Syntax: LEFT(text, [num_chars])text: The text string from which you want to extract the characters.num_chars: [optional] The number of characters you want to extract from the left of the text string. Formula: :LEFT("Excel", 2)Result: ExLEFTB:The LEFTB function in Excel returns the leftmost characters from a text string based on the number of bytes. Syntax: LEFTB(text, [num_bytes])text: The text string from which you want to extract the characters.num_bytes: [optional] The number of bytes you want to extract from the left of the text string. Example:=LEFTB("Excel", 3)Result: Exc"
LEN, LENB	LEN:The LEN function is used to count the number of characters in a text string. And LENB returns the	Syntax: LEN(text) Formula: LEN("Hello World")Result: 11LENBs:Description: The LENBs function is used to count the number of bytes in a text

	number of bytes used to represent	string.Syntax: LENBs(text)LENBs("Hello World")Result: 11
	text string.	
RIGHT, RIGHTB	The Right function	<pre>Syntax: RIGHT(text, [num_chars])</pre>
	in Excel returns	Formula: DIGUT("Evaal Sheet" 5) Desult: Sheet
	characters from a	Formula: KIGHT(Excel Sheet, 5)Kesuit.Sheet
	text string. And	
	RIGHTB returns	
	the rightmost	
	characters based	
LOWER	The LOWER	Svntax: LOWER(text)
	function in Excel	
	converts all letters	Formula: LOWER("EXCEL
	in a text string to	FUNCTION")Result: excel function
NUMBERVALUE	Iowercase.	Syntay: NUMBERVALUE(text
	NUMBERVALUE	[decimal separator], [group separator])
	function converts a	
	text string that	Formula: NUMBERVALUE("\$1,234.56")This
	represents a	would return 1234.56.
	number to a	
PHONETIC	The PHONETIC	Syntax: PHONETIC(text)
	function is used to	
	convert text into	Formula: PHONETIC("Excel")Result: "ECKS-
	phonetic	ELL"
	pronunciation.	
	useful for creating	
	a phonetic	
	representation of	
	names or words,	
	which can help	
	between similar	
	sounding words.	
PROPER	The PROPER	Syntax: PROPER(text)
	function is used to	
	convert a text	Formula: PROPER("this is a test")Result: This
	case which means	IS A TEST
	that the first letter	
	of each word is	

	capitalized and all	
	other letters are	
	lowercase.	
REPT	The REPT	<pre>Syntax: REPT(text, number_times)</pre>
	function in Excel	
	is used to repeat a	Formula: REPT("Hello", 3)Result:
	text string a	HelloHello
	specified number	
	of times.	
SUBSTITUTE	The	Syntax: SUBSTITUTE(text, old_text, new_text,
	SUBSTITUTE	[instance_num])
	function in Excel	
	replaces existing	Formula, SUBSTITUTE(A2 "red" "blue") This
	toxt with now toxt	every la would replace all instances of "rad"
	in a provided text	example would replace all instances of red
	in a provided text	with blue in the text string in cen A2.
	string.	
1.1151	1.1ES1 1s a	Syntax: 1.1ES1(array1, array2, tails,
	statistical function	type)Array1: The first array or range of
	in Excel that	dataArray2: The second array or range of
	calculates the	dataTails: The number of tails in the test, either I
	probability	or 2Type: The type of t-test to be used, either "1"
	associated with a	for a paired two-sample t-test or "2" for a two-
	Student's t-test. It	sample t-test with unequal variances
	is used to	
	determine whether	Formula: T.TEST(A1:A10, B1:B10, 2, 2)This
	two samples are	example would calculate the probability
	likely to have	associated with a two-sample t-test with unequal
	come from the	variances using the data in range A1:A10 and
	same two	B1:B10.
	underlying	
	populations that	
	have the same	
	mean	
TEXT	The TFXT	Syntax: TFXT(value format text)
	function is used to	Syntax. 12X1(value, 101111at_text)
	convert a value to	Formula: TEXT(A1 "\$# ##0.00")
	text in a specific	Formula. $TEXT(XI, \varphi\pi, \pi\pi 0.00)$
	number formet	
		Suntary TEXT (ETED (tart sharestar)
IEAIAFIEK	The TEXTAFIER	Syntax: TEXTAFTER(lext, character)
	function returns	
	the characters after	rormula: IEXIAFIEK("Hello
	a given character	World","o")Result: "World"
	or characters in a	
	text string.	
TEXTBEFORE	The	Syntax: TEXTBEFORE(text, delimiter)
	TEXTBEFORE	

	function is a text	
	function in	Formula:
	Microsoft Excel	TEXTBEFORE("www.example.com",".")Result:
	that returns the	WWW
	text before a	
	specific character	
	in a string	
TEXTION	The TEXTION	Syntax: TEXTIOIN(delimiter ignore empty
	function combines	text1 [text2])
	the text from	
	multiple ranges	Formula: TEXTION(" " TRUE B2:B4) This
	and/or strings and	example combines the text from cells B2 B3
	includes a	and B4 and includes a comma and space
	delimiter you	between each value. The "TRUE" argument
	specify between	ignores any empty cells in the range
	each text value	ignores any empty cens in the range.
	that is combined	
ΤΕΥΤΩΡΙ ΙΤ	The TEXTSDI IT	Syntax: TEXTSDI IT(taxt delimiter)
	function splits a	Syntax. TEXTSTEIT(text, definiter)
	text string into	Formula
	multiple parts	TEXTSPI IT("Apple Bapapa Orange" "")This
	hased on a	formula will return the result "Apple Banana
	specified	Orango"
	dell'action	Orange .
	aalimitar	
трім	The TRIM	Suntay. TDIM(taxt)
TRIM	The TRIM	Syntax: TRIM(text)
TRIM	The TRIM function removes	Syntax: TRIM(text)
TRIM	The TRIM function removes all spaces from a text string except	Syntax: TRIM(text) Formula: TRIM(" This is a test ")Result: "This is a test"
TRIM	The TRIM function removes all spaces from a text string except for single spaces	Syntax: TRIM(text) Formula: TRIM(" This is a test ")Result: "This is a test"
TRIM	The TRIM function removes all spaces from a text string except for single spaces between words	Syntax: TRIM(text) Formula: TRIM(" This is a test ")Result: "This is a test"
TRIM	The TRIM function removes all spaces from a text string except for single spaces between words.	Syntax: TRIM(text) Formula: TRIM(" This is a test ")Result: "This is a test"
TRIM UNICHAR	The TRIM function removes all spaces from a text string except for single spaces between words. UNICHAR is an Excel function that	Syntax: TRIM(text)Formula: TRIM(" This is a test ")Result: "This is a test"Syntax: UNICHAR(number)
TRIM	definiter.The TRIMfunction removesall spaces from atext string exceptfor single spacesbetween words.UNICHAR is anExcel function thatreturns the	 Syntax: TRIM(text) Formula: TRIM(" This is a test ")Result: "This is a test" Syntax: UNICHAR(number) Formula: UNICHAR(65)This will return the
TRIM	The TRIM function removes all spaces from a text string except for single spaces between words. UNICHAR is an Excel function that returns the Unicode character	 Syntax: TRIM(text) Formula: TRIM(" This is a test ")Result: "This is a test" Syntax: UNICHAR(number) Formula: UNICHAR(65)This will return the character "A" in the cell
TRIM UNICHAR	The TRIM function removes all spaces from a text string except for single spaces between words. UNICHAR is an Excel function that returns the Unicode character that corresponds to	Syntax: TRIM(text)Formula: TRIM(" This is a test ")Result: "This is a test"Syntax: UNICHAR(number)Formula: UNICHAR(65)This will return the character "A" in the cell.
TRIM UNICHAR	definiter.The TRIMfunction removesall spaces from atext string exceptfor single spacesbetween words.UNICHAR is anExcel function thatreturns theUnicode characterthat corresponds tothe given numeric	 Syntax: TRIM(text) Formula: TRIM(" This is a test ")Result: "This is a test" Syntax: UNICHAR(number) Formula: UNICHAR(65)This will return the character "A" in the cell.
TRIM UNICHAR	definiter.The TRIMfunction removesall spaces from atext string exceptfor single spacesbetween words.UNICHAR is anExcel function thatreturns theUnicode characterthat corresponds tothe given numericcode	Syntax: TRIM(text) Formula: TRIM(" This is a test ")Result: "This is a test" Syntax: UNICHAR(number) Formula: UNICHAR(65)This will return the character "A" in the cell.
TRIM UNICHAR	definiter.The TRIMfunction removesall spaces from atext string exceptfor single spacesbetween words.UNICHAR is anExcel function thatreturns theUnicode characterthat corresponds tothe given numericcode.The UNICODE	Syntax: TRIM(text) Formula: TRIM(" This is a test ")Result: "This is a test" Syntax: UNICHAR(number) Formula: UNICHAR(65)This will return the character "A" in the cell. Syntax: UNICODE(text)
TRIM UNICHAR UNICODE	definiter.The TRIMfunction removesall spaces from atext string exceptfor single spacesbetween words.UNICHAR is anExcel function thatreturns theUnicode characterthat corresponds tothe given numericcode.The UNICODEfunction is a built-	Syntax: TRIM(text)Formula: TRIM(" This is a test ")Result: "This is a test"Syntax: UNICHAR(number)Formula: UNICHAR(65)This will return the character "A" in the cell.Syntax: UNICODE(text)
TRIM UNICHAR UNICODE	definiter.The TRIMfunction removesall spaces from atext string exceptfor single spacesbetween words.UNICHAR is anExcel function thatreturns theUnicode characterthat corresponds tothe given numericcode.The UNICODEfunction is a built-in function in	Syntax: TRIM(text) Formula: TRIM(" This is a test ")Result: "This is a test" Syntax: UNICHAR(number) Formula: UNICHAR(65)This will return the character "A" in the cell. Syntax: UNICODE(text) Formula: UNICODE("A")Result: 65
TRIM UNICHAR UNICODE	definiter.The TRIMfunction removesall spaces from atext string exceptfor single spacesbetween words.UNICHAR is anExcel function thatreturns theUnicode characterthat corresponds tothe given numericcode.The UNICODEfunction is a built-in function inMicrosoft Excel	Syntax: TRIM(text)Formula: TRIM(" This is a test ")Result: "This is a test"Syntax: UNICHAR(number)Formula: UNICHAR(65)This will return the character "A" in the cell.Syntax: UNICODE(text)Formula: UNICODE("A")Result: 65
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TRIM UNICHAR UNICODE	definiter.The TRIMfunction removesall spaces from atext string exceptfor single spacesbetween words.UNICHAR is anExcel function thatreturns theUnicode characterthat corresponds tothe given numericcode.The UNICODEfunction is a built-in function inMicrosoft Excelthat returns thenumerical value ofa character or thefirst character in a	Syntax: TRIM(text)Formula: TRIM(" This is a test ")Result: "This is a test"Syntax: UNICHAR(number)Formula: UNICHAR(65)This will return the character "A" in the cell.Syntax: UNICODE(text)Formula: UNICODE("A")Result: 65
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UPPER	The UPPER	Syntax: UPPER(text)
	function in Excel	
	converts all text in	Formula: UPPER("Hello World")Result:
	a cell to uppercase.	HELLO WORLD
VALUE	The VALUE	Syntax: VALUE(text)
	function converts a	
	text string that	Formula: VALUE("2") returns 2
	represents a	
	number to a	
	number.	
VALUETOTEXT	VALUETOTEXT	<pre>Syntax: VALUETOTEXT(value, [format_text])</pre>
	is an Excel	
	function that	Formula:
	converts a	VALUETOTEXT(A1,"\$#,##0.00")This example
	numerical value	will convert the numerical value in cell A1 into a
	into a text string.	text string in the format "\$#,##0.00".

Date and Time Functions

Manage Dates and Times with Ease: Working with dates and times in Excel can be a breeze with the dedicated Date & Time Functions. Need to know the current date (TODAY) or extract the year (YEAR) from a date? Perhaps you want to calculate the difference between two dates (DATEDIF)? These functions streamline date and time manipulation for efficient calendar calculations and time-based analyses.

- Work with dates and times efficiently.
- Calculate differences between dates (DATEDIF).
- Extract specific components from dates (YEAR, MONTH, DAY).
- Automate tasks based on current date and time (TODAY, NOW).
- •

Function	Description	Syntax and Formula
DATE	The DATE function is	Syntax: DATE(year, month, day)
	used to create a date	
	value from individual	Formula: DATE(2021,5,1) will return the
	year, month, and day	date 5/1/2021.
	components.	
DATEDIF	The DATEDIF	Syntax: DATEDIF(start_date, end_date,
	function is a built-in	unit)
	function in Microsoft	
	Excel that calculates	Formula: To calculate the number of days
	the number of days,	between two dates, the syntax would
	months, or years	be:DATEDIF(A1,B1,"d")
	between two dates.	
DATEVALUE	The DATEVALUE	<pre>Syntax: DATEVALUE(date_text)</pre>
	function in Microsoft	

	Excel converts a date	
	that is stored as text to	Formula: DATEVALUE("1/1/2020")This
	a serial number that	example would return the serial number
	Excel recognizes as a	43831, which is the number that Excel
	date.	recognizes as January 1, 2020.
DAY	SThe DAYS function	Syntax: DAYS(end_date, start_date)
	returns the number of	
	days between two	
	dates.	DAYS(DATE(2020,10,1),DATE(2020,9,1))
) This example returns the number of days
		1st 2020 which is 30 days
DAVS	The DAVS function	Syntav: $D\Delta VS(end date start date)$
	returns the number of	Syntax. DATS(end_date, start_date)
	days between two	Formula: DAYS(A2,A1) where A1
	dates.	contains the start date and A2 contains the
		end date.
DAYS360	The DAYS360	Syntax: DAYS360(start_date, end_date,
	function is used to	[method])
	calculate the number	
	of days between two	Formula: DAYS360(A2,B2)This formula
	dates based on a 360-	will calculate the number of days between
	day year.	the dates in cells A2 and B2.
EDATE	EDATE: The EDATE	Syntax: EDATE(start_date, months)
	function returns a date	Earmanles EDATE(TODAY() 2)This
	number of months	formula will return a data that is 3 months
	before or after a given	after the current date
	date.	arter the current dute.
EOMONTH	The EOMONTH	Syntax: EOMONTH(start date, months)
	function returns the	
	last day of the month	Formula: EOMONTH(A2, 3) where A2
	that is a specified	contains a date value. This will return the
	number of months	last day of the month 3 months after the
	before or after a given	date in A2.
	date.	
HOUK	The HOUR function	Syntax: HOUR(serial_number)
	of a given time as a	Formula: $HOUP(\Lambda 2)$ returns the hour part
	number between 0 and	of the time in cell A?
	23.	or the time in con 712.
ISOWEEKNUM	The ISOWEEKNUM	Syntax: ISOWEEKNUM(date)
	function returns the	
	ISO week number of a	Formula: ISOWEEKNUM(A2)where A2
	given date.	contains a date value.

MINUTE	The MINUTE function in Excel	<pre>Syntax: MINUTE(serial_number)</pre>
	returns the minute	Formula: MINUTE(A2) where A2
	component of a given	contains the time 10:15 AM. The result
	time.	would be 15.
MONTH	The MONTH function	Syntax: MONTH(serial_number)
	in Microsoft Excel is	
	used to return the	Formula: MONTH(A2)In this example,
	month number from a	the function will return the month number
NETWODEDAVC	given date.	of the date in cell A2.
NEI WOKKDAI S	NETWORKDAYS	syntax: NET WORKDATS(start_date,
	NETWORKDAYS	end_date, [nondays])
	function calculates the	Formula: NETWORKDAYS(A2.A3)This
	number of whole	example would calculate the number of
	working days between	working days between the dates in cells A2
	two dates. It excludes	and A3.
	weekends and	
	holidays from the	
	calculation.	Construction
NEIWOKKDAYS.IN	NETWORKDAYS.IN	Syntax: NETWORKDANS INTL (stort data
	function that	end date [weekend] [holidays])
	calculates the number	ena_aate, [weekena], [nonad/o]/
	of workdays between	Formula:
	two dates, excluding	NETWORKDAYS.INTL(A1,B1,11,C1:C5
	weekends and)This example calculates the number of
	holidays.	workdays between the dates in A1 and B1,
		with weekends set to Saturday and Sunday
NOW	NOW. This fur stice	(11), and holidays in the range C1:C5.
	NOW: This function returns the current	Syntax: NOW()
	system date and time.	Formula: NOW()This formula will return
		the current date and time, for $2/26/2020$
		4:54:00 PM
SECOND	The SECOND	<pre>Syntax: SECOND(time_value)</pre>
	function returns the	
	second part of a time	Formula: SECOND(A1) where A1
	value.	contains the time value $09:15:30$, the result
	The TIME function is	Syntay: TIME(hour minute second)
	used to construct a	Syntax, Third nour, minute, second)
	time value from hour.	Formula: TIME(14,30,45) returns the
	minute, and second	value 14:30:45.
	values.	

TIMEVALUE	The TIMEVALUE	Syntax: TIMEVALUE(time_text)
	function is used to	
	convert a time	Formula: IIMEVALUE("10:30 AM") will return 0.4375
	a serial number that	will letuill 0.4375.
	Excel recognizes as	
	time.	
TODAY	The TODAY function	Syntax: TODAY()
	returns the current	•
	date.	Formula: TODAY()This will return the
		current date in the cell.
WEEKDAY	The WEEKDAY	Syntax: WEEKDAY(serial_number,
	function in Excel	[return_type])
	returns a number from	
	1-7 corresponding to the day of the week	rormula: WEEKDAY (A2, 1) where A2 is
	for a given date	function will return a number from 1-7
		corresponding to the day of the week. For
		example, if A2 contains the date
		"2/14/2021", the WEEKDAY function will
		return 4, corresponding to Wednesday.
WEEKNUM	The WEEKNUM	Syntax: WEEKNUM(serial_number,
	function returns the	[return_type])
	week number of a	
	given date in the year.	FORMULA: WEEKNUM(A1,1)1MS
		the date in cell A1 using the return type of
		1 (week starts on Sunday).
WORKDAY	The Excel	Syntax: WORKDAY(start_date, days,
	WORKDAY function	[holidays])
	returns a date that is a	
	given number of	Formula: WORKDAY(DATE(2020,1,1),
	workdays away from a	10) This example returns the date 10
WORKDAV INTI	Start date.	Syntax: WORKDAY INTL (start date
	WORKDAY INTL	days [weekend] [holidays])
	function calculates the	
	date after a specified	Formula:
	number of workdays,	WORKDAY.INTL(DATE(2020, 1, 1), 10,
	taking into account	11, A2:A10)This example returns the date
	weekends and	10 workdays after January 1, 2020, taking
	holidays.	Into account weekends 11 (Saturday and
		A2.410
YEAR	The YEAR function	Svntax: YEAR(serial number)
	returns a four-digit	

	year (a number from 1900 to 9999) given a date value.	Formula: YEAR(A1) where A1 is a cell containing a date value. The result would be the four-digit year of the date in A1.
YEARFRAC	The YEARFRAC function is used to calculate the fraction of the year represented by the number of days between two dates.	Syntax: YEARFRAC(start_date, end_date, [basis]) Formula: YEARFRAC(B2,C2,1)This example will calculate the fraction of the year between the dates in cells B2 and C2, using the US (NASD) 30/360 day count basis.

Logical Functions

Make Informed Decisions Based on Conditions: Ever need your spreadsheet to make decisions based on certain conditions? Enter the world of Logical Functions! These powerful tools evaluate conditions and return TRUE or FALSE, allowing you to build complex formulas with branching logic and control the flow of your calculations.

- Evaluate conditions and return TRUE or FALSE.
- Useful for building complex formulas with decision-making capabilities.
- Control the flow of calculations based on specific criteria.
- Examples: IF, AND, OR, NOT, XOR

Function	Description	Syntax and Formula
AND	The AND function is a logical function in Excel that returns TRUE if all of the conditions that are specified are true, and returns FALSE if any of the conditions are false.	Syntax: AND(logical1, [logical2],) Formula: AND(A1>5,B1<10)
BYCOL	UMNBYCOLUMN is a function in Microsoft Excel that allows users to sort a range of data by column.	Syntax: BYCOLUMN(array, [col], [ascending]) Formula: BYCOLUMN(A1:C10, 2, TRUE)This example will sort the range A1:C10 by the second column in ascending order.
BYROW	BYROW is an Excel function that returns an array of numbers	Syntax: BYROW(array, row_num)

	from a given range of cells. It takes two arguments: array and row_num. Array is a range of cells that contains numbers, and row_num is a number that indicates which row should be returned.	Formula: If the range A1:C3 contains the following numbers:A1: 1A2: 2A3: 3B1: 4B2: 5B3: 6C1: 7C2: 8C3: 9Then the formula BYROW(A1:C3, 2) will return the array {2, 5, 8}.
FALSE	The FALSE function	Syntax: FALSE()
	function that returns the value FALSE.	Formula: FALSE()This formula will return the value FALSE.
IF	The IF function in	Syntax: IF(logical_test, value_if_true,
	function that allows	value_li_laise)
	you to make a logical	Formula: IF(A2>B2, "A is greater than B",
	comparison between	"B is greater than A")
	two values and	
	returns a value based	
	on the result of that	
	comparison.	
IFERROR	The IFERROR	Syntax: IFERROR(value, value_1f_error)
	runction is used to	Formula: IFEDDOD $(\Lambda 1/B1, 0)$
	errors in a formula It	Formula. IFERROR(A1/D1, 0)
	tests a value for an	
	error and returns a	
	chor una returno u	
	different value if an	
	different value if an error is found.	
IFNA	different value if an error is found. IFNA: This function	Syntax: IFNA(value_if_error,
IFNA	different value if an error is found. IFNA: This function returns the value you	Syntax: IFNA(value_if_error, value_if_no_error)
IFNA	different value if an error is found. IFNA: This function returns the value you specify if a formula	Syntax: IFNA(value_if_error, value_if_no_error)
IFNA	different value if an error is found. IFNA: This function returns the value you specify if a formula evaluates to an error; otherwise, it returns	Syntax: IFNA(value_if_error, value_if_no_error) Formula: IFNA(0,A1/A2)
IFNA	different value if an error is found. IFNA: This function returns the value you specify if a formula evaluates to an error; otherwise, it returns the result of the	Syntax: IFNA(value_if_error, value_if_no_error) Formula: IFNA(0,A1/A2)
IFNA	different value if an error is found. IFNA: This function returns the value you specify if a formula evaluates to an error; otherwise, it returns the result of the formula.	Syntax: IFNA(value_if_error, value_if_no_error) Formula: IFNA(0,A1/A2)
IFNA IFS	different value if an error is found. IFNA: This function returns the value you specify if a formula evaluates to an error; otherwise, it returns the result of the formula. IFS is an Excel	Syntax: IFNA(value_if_error, value_if_no_error) Formula: IFNA(0,A1/A2) Syntax: IFS(logical_test1, value_if_true1.
IFNA IFS	different value if an error is found. IFNA: This function returns the value you specify if a formula evaluates to an error; otherwise, it returns the result of the formula. IFS is an Excel function that allows	<pre>Syntax: IFNA(value_if_error, value_if_no_error) Formula: IFNA(0,A1/A2) Syntax: IFS(logical_test1, value_if_true1, [logical_test2, value_if_true2],)</pre>
IFNA IFS	different value if an error is found. IFNA: This function returns the value you specify if a formula evaluates to an error; otherwise, it returns the result of the formula. IFS is an Excel function that allows you to test multiple	<pre>Syntax: IFNA(value_if_error, value_if_no_error) Formula: IFNA(0,A1/A2) Syntax: IFS(logical_test1, value_if_true1, [logical_test2, value_if_true2],)</pre>
IFNA IFS	different value if an error is found. IFNA: This function returns the value you specify if a formula evaluates to an error; otherwise, it returns the result of the formula. IFS is an Excel function that allows you to test multiple conditions at the same	Syntax: IFNA(value_if_error, value_if_no_error) Formula: IFNA(0,A1/A2) Syntax: IFS(logical_test1, value_if_true1, [logical_test2, value_if_true2],) Formula: IFS(A1=1, "Yes", A1=2, "No",
IFNA IFS	different value if an error is found. IFNA: This function returns the value you specify if a formula evaluates to an error; otherwise, it returns the result of the formula. IFS is an Excel function that allows you to test multiple conditions at the same time and returns a	Syntax: IFNA(value_if_error, value_if_no_error) Formula: IFNA(0,A1/A2) Syntax: IFS(logical_test1, value_if_true1, [logical_test2, value_if_true2],) Formula: IFS(A1=1, "Yes", A1=2, "No", A1=3, "Maybe")This formula will check the
IFNA IFS	different value if an error is found. IFNA: This function returns the value you specify if a formula evaluates to an error; otherwise, it returns the result of the formula. IFS is an Excel function that allows you to test multiple conditions at the same time and returns a value that	Syntax: IFNA(value_if_error, value_if_no_error) Formula: IFNA(0,A1/A2) Syntax: IFS(logical_test1, value_if_true1, [logical_test2, value_if_true2],) Formula: IFS(A1=1, "Yes", A1=2, "No", A1=3, "Maybe")This formula will check the value in cell A1 and return "Yes" if it is equal
IFNA IFS	different value if an error is found. IFNA: This function returns the value you specify if a formula evaluates to an error; otherwise, it returns the result of the formula. IFS is an Excel function that allows you to test multiple conditions at the same time and returns a value that corresponds to the formula.	Syntax: IFNA(value_if_error, value_if_no_error) Formula: IFNA(0,A1/A2) Syntax: IFS(logical_test1, value_if_true1, [logical_test2, value_if_true2],) Formula: IFS(A1=1, "Yes", A1=2, "No", A1=3, "Maybe")This formula will check the value in cell A1 and return "Yes" if it is equal to 1, "No" if it is equal to 2, and "Maybe" if it is a result a 2

LAMBDA	The LAMBDA	Syntax: LAMBDA(argument1, argument2,
	function in Excel is	, argument_n,
	used to create custom	expression)Arguments:argument1, argument2,
	functions. It allows	, argument_n: These are the arguments that
	users to create their	will be used in the
	own functions that	expression.expression: This is the expression
	can be used in	that will be evaluated.
	formulas. It is a	
	powerful tool that can	Formula: LAMBDA $(x, y, x+y)$ This function
	be used to create	adds two arguments (x and y) and returns the
	complex formulas.	sum of the two.
MAKEARRAY	The MAKEARRAY	Syntax: MAKEARRAY(value1, [value2].
	function creates a	[value3])
	single-column array	
	from multiple values.	Formula: MAKEARRAY(1,2,3,4)This will
		return an array of $\{1:2:3:4\}$
МАР	MAP is an Excel	Syntax: MAP(lookup value from array
	function that allows	to array)
	you to map one set of	to_unuj)
	values to another set	Formula: MAP(2 {1 2 3} {10 20 30})This
	of values. It takes	example would return 20 as the result
	three arguments.	example would retain 20 us the result.
	lookun value	
	from array and	
	to array	
NOT	The NOT function is	Syntax: NOT(logical)
	a logical function in	Syntax. 1001(logical)
	Excel that returns the	Formula: NOT(TRUE) returns FALSE
	opposite of a given	
	logical value. It takes	
	a single argument that	
	is either TRUE or	
	FALSE and returns	
	the opposite	
OR	The OR function is a	Syntax: OR(logical1 [logical2])
	logical function in	
	Excel that returns	Formula: OR(A1="Yes" B1="Yes")
	either TRUE or	
	FALSE based on one	
	or more conditions	
REDUCE	The REDUCE	Syntax: REDUCE(function_range[_initial])
	function is an Excel	S Trans (CDD C CD (renetion, rangel, initial))
	function that reduces	Formula: REDUCE(SUM A1.A10 0) This
	a range of values by	example will return the sum of the values in
	applying a given	the range A1.A10 starting with an initial
	function It is a	value of 0

	dynamic array function that can take	
	multiple values and	
	return a single result.	
SCAN	The SCAN function searches for specific characters within a	Syntax: SCAN(text, character_set, [start_num], [num_chars])
	taxt string and raturns	Earmula, SCAN("Halla World", "" 1
	text string and returns	Formula: SCAN(Hello world , , I, $1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 $
	the text string from	4) The example above will return "Hello" as
	the start position to	the text string from the start position of 1 to
	the character found.	the character found, which is a space.
SWITCH	The SWITCH	Syntax: SWITCH (expression, value_1,
	function is a logical	result_1, [value_2, result_2], [default])
	function in Microsoft	
	Excel that evaluates	Formula:
	an expression against	SWITCH(A1,"A",1,"B",2,"C",3,"D",4,0)In
	multiple conditions	this example, the SWITCH function will
	and returns a result	evaluate the value in cell A1 and return a
	corresponding to the	result based on the following conditions: If A1
	first matching	= "A" the result is $11f A_1 = "B"$ the result is
	condition	2 If A 1 = "C" the result is 3 If A 1 = "D" the
	condition	result is 4If none of the conditions are met the
		result is 0
TDUE	The TDUE function	Suntary TDUE()
INUL	noturna the logical	Symax: TRUE()
	returns the logical	
	value TRUE.	Formula: I RUE() I his formula will return
VOD		
XOR	The XOR function in	Syntax: XOR(logical1, [logical2],)
	Excel returns a	
	logical exclusive OR	Formula: XOR(TRUE, FALSE, TRUE)This
	of all arguments. It	example would return TRUE.
	returns TRUE if an	
	odd number of	
	arguments are TRUE,	
	and FALSE if an	
	even number of	
	arguments are TRUE.	

Lookup and Reference Functions

Find What You Need Across Your Spreadsheets: Lost in a sea of data across different worksheets? Lookup & Reference Functions come to the rescue! These champions help you retrieve specific data from any location within your workbook. VLOOKUP and HLOOKUP are

masters at searching for values and returning corresponding information, while INDEX and MATCH offer ultimate flexibility for customized lookups.

- Retrieve data from different parts of your workbook.
- Search for specific values and return corresponding information (VLOOKUP, HLOOKUP).
- Use a combination of INDEX and MATCH for flexible lookups.
- Reference cells across worksheets for consolidated reports.

Function	Description	Syntax and Formula
ADDRESS	The ADDRESS	Syntax: ADDRESS(row_num, column_num,
	function returns a	[abs_num], [a1], [sheet_text])
	cell address as	
	text, based on a	Formula: ADDRESS(2,3,4,TRUE,"Sheet1")This
	given row and	example will return the address of cell C4 (row 2,
	column number.	column 3) on Sheet1 as \$C\$4.
AREAS	The AREAS	Syntax: AREAS(reference)
	function in	
	Microsoft Excel	Formula: AREAS(A1:B2)This formula will
	returns the number	return the value 2, since the range A1:B2 contains
	of areas in a	two areas.
	reference.	
CHOOSE	The CHOOSE	Syntax: CHOOSE(index_num, value1, [value2],
	function in Excel)
	is used to select	
	one of a number of	Formula: CHOOSE(2, "red", "blue",
	values based on an	"green")This example would return "blue" as the
	index number.	output.
CHOOSECOLS	The	Syntax: CHOOSECOLS(range, [criteria])
	CHOOSECOLS	
	function allows	Formula: CHOOSECOLS(A1:F10, ">50")This
	you to select	example will return an array of column numbers
	columns from a	from A1:F10 that contain values greater than 50.
	range of cells. It	
	returns an array of	
	the selected	
CHOOGEDOWG	column numbers.	
CHOOSEROWS	The	Syntax: CHOOSEKOWS(list, criteria)
	function returns on	Formulas CHOOSEDOWS(A1,A10, "5")This
	arroy of rows from	vill return on arroy of rows from A1:A10, >5)IMS
	allay of lows from	the value is greater than 5
	a fist based off a	the value is greater than 5.
	cifieria.	

COLUMN The COLUMN Syntax: COLUM	/IN(reference)
function is an	
Excel function that Formula: COLU	JMN(A1)This will return the
returns the column value 1, since A	is the first column in the
number of a given worksheet.	
cell reference.	
COLUMNS COLUMNS IS a Syntax: COLUM	ANS(array)
Iunction in Microsoft Excel	IMANE(A1.D2)This evenue
that raturns the would raturn 2 of	ince the range A1:P2 contains
number of two columns	fince the range A1.B2 contains
columns in a given	
array or reference	
DROPDOWN The DROPDOWN Syntax: DROPD	OWN(list, [selected].
function creates a [input title]. [int	but messagel)
dropdown list in a	
cell. Formula: DROI	PDOWN(A1:A5, 2, "Select an
Option", "Choos	e an Option")
EXPAND The EXPAND Syntax: EXPAN	D(reference, row_num,
function is used to column_num)	
expand a range of	
cells from a single Formula: EXPA	ND(A1,2,2)This would expand
cell. the range of cells	from A1 to C2.
FILTER The FILTER Syntax: FILTER	(array, include, [if_empty])
function is used to	
filter a range of Formula: FIL II	ER(A2:C10, B2:B10="Yes", "No
supplied criteria It column A that or	cample will return the values in
returns a subset of B that contain the	e value "Ves" If no matches are
data that meets the found it will return	rn "No matches"
criteria.	
FORMULATEXT The Syntax: FORMU	JLATEXT(reference)
FORMULATEXT	```'
function is used to Formula: FORM	/IULATEXT(A1)This example
return the formula would return the	formula in cell A1 as text.
in a cell as text.	
CETPIVOTDATA The Syntax GETPIV	
OLITIVOIDATA TIL Syntax. OLITI	/OTDATA(data_field,
GETPIVOTDATA pivot_table, [fiel	/OTDATA(data_field, d1, item1, field2, item2],)
GETPIVOTDATA function in Excel	/OTDATA(data_field, d1, item1, field2, item2],)
GETPIVOTDATA GETPIVOTDATA function in Excel is used to retrieve data stored in a GETPIVOTDATA Formula:	/OTDATA(data_field, d1, item1, field2, item2],)
GETPIVOTDATA GETPIVOTDATA function in Excel is used to retrieve data stored in a PivotTable. It is	/OTDATA(data_field, d1, item1, field2, item2],) TA("Sales",A2,"Region","West")
GETPIVOTDATA GETPIVOTDATA function in Excel is used to retrieve data stored in a PivotTable. It is used to reference	/OTDATA(data_field, d1, item1, field2, item2],) FA("Sales",A2,"Region","West")
GETPIVOTDATA function in Excel is used to retrieve data stored in a PivotTable. It is used to reference data stored in a	/OTDATA(data_field, d1, item1, field2, item2],) TA("Sales",A2,"Region","West")

	using a standard	
	cell reference.	
HLOOKUP	HLOOKUP is an	Syntax: HLOOKUP(lookup_value, table_array,
	Excel function	row_index_num, [range_lookup])
	used to look up	
	and retrieve data	Formula: HLOOKUP(B2,A2:D7,3,FALSE)In
	from a row in a	this example, the HLOOKUP function searches
	table. It searches	for the value in cell B2 in the first row of the
	for a value in the	table (A2:D7). It then returns the corresponding
	top row of the	value in the third row of the same column. The
	table and returns	range_lookup argument is set to FALSE to ensure
	the corresponding	an exact match is found.
	value in the same	
	column from	
	another row.	
HSTACK	HSTACK is an	Syntax: HSTACK(array1, array2, array3,)
	Excel function that	
	allows users to	Formula: HSTACK({1,2,3}, {4,5,6}, {7,8,9})
	combine two or	returns {1,2,3,4,5,6,7,8,9}
	more arrays into	
	one single array.	
HYPERLINK	The HYPERLINK	Syntax: HYPERLINK(link_location,
	function creates a	[friendly_name])
	shortcut that jumps	
	to a specific	Formula: HYPERLINK("www.google.com",
	location in the	"Google")This will create a link to Google's
	current workbook,	website with the friendly name "Google".
	opens a document	
	stored on a	
	network server, or	
	opens a web page	
	on the Internet.	
INDEX	The INDEX	Syntax: INDEX(array, row_num,
	runction returns a	[column_num])
	value or reference	Earmandar NIDEV(A1,C2, 2, 2) This formula will
	of the cell at the	FORMULA: INDEX(A1:C5, 2, 5) This formula will network the value of the intermedian of the second
	nuersection of a	return the value at the intersection of the second
	particular fow and	Tow and unite column of the range AT.C.5.
	column within a	
INDIRECT	The INDIPECT	Syntay: INDIRECT(raf_tayt_[a1])
	function returns a	
	reference to a	Formula: INDIRECT(" Δ 1") returns the value of
	range. It is useful	cell A1
	when you want to	
	convert a text	

	string into a valid	
	reference.	
LOOKUP	The LOOKUP	Syntax: LOOKUP(lookup_value, lookup_vector,
	function is used to	[result_vector])
	a row or column of	Formula: $I \cap OKUP(\Lambda 2 \mathbb{R} 2 \cdot \mathbb{R} 6 \cap C 2 \cdot \cap 6)$
	data It can be	For mula. LOOKOI (A2, D2. D0, C2. C0)
	used to look up a	
	value either	
	vertically (in a	
	column) or	
	horizontally (in a	
	row).	
MAICH	MAICH 18 a function in Excel	Syntax: MATCH(lookup_value, lookup_array,
	that looks for a	found in the lookup_value. The value to be
	specified item in a	range of cells being
	range of cells and	searched.match_type: [optional] The number -1,
	returns the relative	0, or 1. The match_type specifies how Excel
	position of that	matches lookup_value with values in
	item in the range.	lookup_array.
		Formula: MATCH(A1 P1·P10 0) This example
		looks for the value in cell A1 in the range of cells
		B1:B10. The match type is set to 0, which means
		that Excel will find an exact match for the value
		in A1. The function will return the relative
		position of the value in A1 in the range B1:B10.
OFFSET	The OFFSET	Syntax: OFFSET(reference, rows, cols, [height],
	function returns a	[width])
	reference to a	Formula: OFESET(B2 2 3 2 1) This will return
	specified number	the range C4:C5, which is two rows and three
	of rows and	columns away from cell B2.
	columns from a	
	given reference	
DOW	cell.	
ROW	The ROW	Syntax: ROW([reference])
	the row number of	Formula: $\mathbf{POW}(\mathbf{A}1)$ returns 1
	a cell reference.	
ROWS	The ROWS	Syntax: ROWS(array)
	function returns	
	the number of	Formula: ROWS(A1:B10)This will return the
	rows in a given	number 10, as there are 10 rows in the range
	array or range.	A1:B10.

RTD	The RTD function	Syntax: RTD(progID, server, topic1, [topic2],
	in Excel is used to)
	retrieve real-time	
	data from a	Formula: RTD("MSFTQuote.RTD",,"MSFT")
	program that	
	supports COM	
	automation.	
SORT	The SORT	Syntax: SORT(array, [sort_index], [sort_order],
	function in Excel	[by_col])
	allows users to	
	sort a range of data	Formula: SORT(A2:D6, 2, 1, TRUE)This
	by one or more	example will sort the range of data in A2:D6 by
	columns or rows	the second column in ascending order.
	in either ascending	
	or descending	
	order.	
SORTBY	The SORTBY	Syntax: SORTBY(array, sort_column1,
	function sorts a	[sort_order1], [sort_column2], [sort_order2],)
	range of data	
	based on one or	Formula: SORTBY(A2:F6, 2, 1, 5, -1)This
	more columns.	example will sort the range A2:F6 based on the
		values in column 2 in ascending order and the
		values in column 5 in descending order.
TAKE	TAKE is an Excel	Syntax: TAKE(text,num_chars)
	function that	
	returns a specified	Formula: TAKE("Excel",3)Result: Exc
	number of	
	characters from	
	the start of a text	
TOCOL	string.	
TUCUL	function noturns	Syntax: IOCOL(cell_reference)
	the column	Examples TOCOL (" $(4,1)$ ") notioned 1
	number of a given	Formula: TOCOL(AT) Teturns T
	cell reference	
ΤΟΡΟΨ	The TOPOW	Syntax: TOPOW(reference)
IOROW	function returns	Syntax. Tokow (reference)
	the row number of	Formula: $TOROW(A1)$ This example returns the
	a reference	row number of cell A1 which is 1
TRANSPOSE	The TRANSPOSE	Svntav· TRANSPOSE(array)
	function in Excel	Sjawas intra of OSE(unuy)
	is used to	Formula: TRANSPOSE(A1:C3)This example
	transpose a range	would take the range of cells from A1 to C3 and
	of cells from	transpose them so that the rows become columns
	vertical to	and the columns become rows

	horizontal or vice versa.	
UNIQUE	The UNIQUE function in Excel is used to return a list of unique values from a list or range.	 Syntax: UNIQUE(array, [by_col], [exactly_once])Array: The array or range of cells from which to extract unique values.By_col: (optional) A logical value that specifies whether to return unique rows or columns. If set to TRUE, the function will return unique rows; if set to FALSE, the function will return unique columns. The default value is FALSE.Exactly_once: (optional) A logical value that specifies whether to return only values that appear exactly once in the list or range. The default value is FALSE. Formula: UNIQUE(A1:A10)This will return a list of unique values from the range A1:A10.
VLOOKUP	VLOOKUP is an Excel function used to look up and retrieve data from a specific column in a table. It searches for a value in the leftmost column of a table and returns a value in the same row from another column.	 Syntax: VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup]) Formula: VLOOKUP(A2, C2:E5, 3, FALSE)This example looks up the value in cell A2 in the leftmost column of the table in cells C2 to E5 and returns the value in the same row from the third column of the table.
VSTACK	The VSTACK function in Excel is used to stack two or more vertical ranges of data on top of each other.	Syntax: VSTACK(array1, array2, [array3],) Formula: VSTACK(A1:A5, B1:B5)
WRAPCOLS	The WRAPCOLS function in Microsoft Excel is used to wrap the contents of a cell across multiple columns.	Syntax: WRAPCOLS(cell_reference, number_of_columns)Formula: WRAPCOLS(A1, 3)This will wrap the contents of cell A1 across 3 columns.
WRAPROWS	WRAPROWS is a Microsoft Excel	Syntax: WRAPROWS(cell_reference)

	function that allows you to wrap text in a cell to multiple lines. This is useful when you have a long text string that needs to be displayed in a cell.	Formula: WRAPROWS(A1)
XLOOKUP	XLOOKUP is an Excel function that looks for a value in the first column of a table array and returns the corresponding value from another	Syntax: XLOOKUP(lookup_value, lookup_array, return_column_number, [not_found], [match_mode], [search_mode]) Formula: XLOOKUP(A2, B2:E5, 3, "Not Found", 0, 1)In this example, the lookup_value is A2, the lookup_array is B2:E5, the return_column_number is 3, the not_found value
	same row.	s Not Found, the match_mode is 0 and the search mode is 1.
XMATCH	XMATCH: This function returns the position of a value in a given array that matches a specified value in a specified order.	Syntax: XMATCH(lookup_value, lookup_array, [match_type]) Formula: XMATCH("Apple", {"Orange", "Banana", "Apple", "Grape"}, 0)This example will return 3, since "Apple" is the third item in the array.

Math and Trigonometry Functions

Unleash the Power of Mathematical Calculations with Excel's Math & Trigonometry Functions. From basic arithmetic like SUM and AVERAGE to advanced calculations like square roots (SQRT) and trigonometric functions (SIN, COS, TAN), these functions equip you to tackle any numerical analysis or scientific computation with ease.

- Perform basic arithmetic operations (SUM, AVERAGE, COUNT). •
- Tackle advanced calculations (SQRT, SIN, COS, TAN).
- Analyze scientific data and create financial models.
- Calculate loan payments and interest rates.

Function Description Syntax and Formula

ABS	The ABS function in	Syntax: ABS(number)
	Excel returns the	
	absolute value of a	Formula: ABS(-5)Result: 5
	number.	
ACUS	The ACOS function	Syntax: ACOS(number)
	(in radians) of a	Formula: To find the arccosine of 0.5
	number.	the formula would be:= $ACOS(0.5)$ The
		result would be 1.0471975511966
		radians.
ACOSH	The ACOSH function	Syntax: ACOSH(number)
	returns the inverse	
	hyperbolic cosine of a	Formula: ACOSH(3)The result of this
	number.	formula is $1./62/4/1/4039086$.
ACOI	returns the inverse	Syntax: ACOT(number)
	cotangent	Formula: ACOT(0.5)This formula
	(arccotangent) of a	returns 1 10714871779409
	given number.	
АСОТН	The ACOTH function	Syntax: ACOTH(number)
	is an Excel function	
	that returns the	Formula: ACOTH(2)This formula
	inverse hyperbolic	returns 0.5493061443340548.
	cotangent of a given	
	number.	
AGGREGATE	function is a built in	Syntax: AGGREGATE(function_num,
	function in Excel that)Function num: This is a number that
	performs calculations	specifies the type of function to be
	such as sum, count.	used.Options: This is a number that
	average, max, min,	specifies the options to be used.Ref1,
	product, etc. on a	[ref2],: This is the range of cells that
	range of data.	will be used for the calculation.
		AGGREGATE(3,6,A1:A10)1his
		values in the range A1:A10
ARABIC	The ARABIC	Syntax: ARABIC(text)
	function is used to	
	convert Roman	Formula: ARABIC("XVII") returns 17
	numerals to Arabic	
	numerals.	
ASIN	The ASIN function	Syntax: ASIN(number)
	returns the arcsine of	
	a given number.	

		Formula: ASIN(0.5)This will return the arcsine of 0.5, which is equal to
		0.5235987755982988.
ASINH	The ASINH function	Syntax: ASINH(number)
	returns the inverse	
	hyperbolic sine of a	Formula: ASINH(2)This formula
	given number.	returns 1.4436354751788.
ATAN	The ATAN function	Syntax: ATAN(number)
	in Excel returns the	•
	arctangent of a given	Formula: ATAN(1) returns
	number, which is the	0.785398163397448
	angle in radians	
	between the x-axis	
	and a line from the	
	origin to the given	
	number.	
ATAN2	The ATAN2 function	<pre>Syntax: ATAN2(x_num, y_num)</pre>
	returns the arctangent	
	of two numbers,	Formula: ATAN2(2, 3)This example
	which is the angle	returns the arctangent of 2 and 3, which
	between the x-axis	is 0.982793723247329 radians or
	and a line from the	56.3099324740202 degrees.
	origin to a point in	
	the Cartesian plane.	
ATANH	The ATANH function	Syntax: ATANH(number)
	is an Excel function	
	that returns the	Formula: ATANH(0.5)This example
	inverse hyperbolic	would return 0.5493061443340548,
	tangent of a number.	which is the inverse hyperbolic tangent
DACE		
BASE	BASE is an Excel	Syntax: BASE(number, radix,
	a number from one	liiii_leiigui)
	a number from one	Example: $PASE(10101, 2, 8)$ This
	another. It is used to	example would convert the binary
	convert a number	number 10101 to its decimal equivalent
	from one number	21 The min length argument is optional
	system to another	and is used to pad the result with zeros
	system to unotion,	and is used to put the result with Zeros
	such as from binary	to the specified length
	such as from binary to decimal or from	to the specified length.
	such as from binary to decimal or from hexadecimal to octal	to the specified length.
CEILING	such as from binary to decimal or from hexadecimal to octal. CEILING: The	to the specified length. Syntax: CEILING(number
CEILING	such as from binary to decimal or from hexadecimal to octal. CEILING: The CEILING function	to the specified length. Syntax: CEILING(number, significance)
CEILING	such as from binary to decimal or from hexadecimal to octal. CEILING: The CEILING function rounds a number up	to the specified length. Syntax: CEILING(number, significance)
CEILING	such as from binary to decimal or from hexadecimal to octal. CEILING: The CEILING function rounds a number up to the nearest	to the specified length. Syntax: CEILING(number, significance)

	multiple of a	
	specified number.	Formula: CEILING(A2,0.1)This
		formula will round the value in cell A2
		up to the nearest multiple of 0.1.
CEILING.MATH	The	Syntax: CEILING.MATH(number,
	CEILING.MATH	significance, [mode])
	function rounds a	
	number up to the	Formula: CEILING.MATH(4.2, 0.5,
	nearest integer or to	1)This example returns 4.5, as it rounds
	the nearest multiple	4.2 up to the nearest multiple of 0.5,
	of significance.	which is 4.5.
CEILING.PRECISE	The	Syntax: CEILING.PRECISE(number,
	CEILING.PRECISE	significance)
	function rounds a	
	number up to the	Formula: CEILING.PRECISE(14.8,
	nearest integer or to	0.1)Result: 14.9
	the nearest multiple	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	of significance.	
COMBIN	COMBIN is an Excel	Syntax: COMBIN(number,
	function that	number_chosen)
	calculates the number	
	of combinations of a	<b>Formula:</b> If you want to calculate the
	given number of	number of combinations of 5 objects
	objects from a set of	taken 5 at a time, the formula would be $COMDIN(5,2)$ . The result of this
	objects.	COMBIN(5,5). The result of this
	COMDINATE	Suptore COMPINA (number
COMDINA	COMBINA. The	syntax: COMBINA(number,
	returns the number of	number_chosen)
	combinations for a	Formula: COMBINA(6.3) This example
	given number of	returns the number of combinations
	items	possible when selecting 3 items from a
		set of 6 items. The result is 20.
COS	The COS function	Svntax: COS(number)
	returns the cosine of	
	an angle given in	<b>Formula:</b> COS(PI()) returns -1, which is
	radians.	the cosine of PI radians.
COSH	The COSH function	Syntax: COSH(number)
	in Excel returns the	•
	hyperbolic cosine of a	Formula: COSH(2) returns
	given number.	3.7621956910836
СОТ	The COT function is	Syntax: COT(number)
	used to calculate the	
	cotangent of an angle	<b>Formula:</b> COT(PI()/4)This example
	given in radians.	would return the cotangent of pi/4,
		which is equal to 1.

СОТН	The COTH function	Syntax: COTH(number)
	returns the hyperbolic	
	cotangent of a given	<b>Formula:</b> COTH(0.5) returns 1.31
	number.	
CSC	CSC	Syntax: CSC(number)
	(Complementary	
	Sine) is an Excel	<b>Formula:</b> $CSC(PI()/4)$ This will return
	function that returns	the value of $1.4142135623/31$ , which is
	the complementary	the complementary sine of P1/4.
	sine of a given	
	for the CSC function	
	is CSC (angle), where	
	angle is the angle in	
	radians for which you	
	want to find the	
	complementary sine	
CSCH	The CSCH function	Syntax: CSCH(number)
	returns the hyperbolic	Syntant es en (number)
	cosecant of a given	Formula: CSCH(2)Result
	number.	0.275720564771759
DECIMAL	The DECIMAL	Syntax: DECIMAL(number, radix)
	function is used to	•
	convert a number	Formula: DECIMAL(1011,2)This
	from any other base	example would return the decimal value
	to decimal.	of 11.
DEGREES	The DEGREES	Syntax: DEGREES(angle)
	function converts an	
	angle in radians to	Formula:
	degrees.	DEGREES(3.14159265358979)Result:
		180
EVEN	The EVEN function	Syntax: EVEN(number)
	rounds a number up	E
	integer	Formula: EVEN(5.2)Result: 4
EVD	The EVP function in	Suntay: EVD(number)
	Fycel returns the	Syntax. EAr (number)
	result of the	Formula: FXP(2)Result
	mathematical	7 38905609893065
	constant e raised to	1.50705007075005
	the power of a given	
	number.	
FACT	FACT: The FACT	Syntax: FACT(number)
	function returns the	
	factorial of a number.	

		<b>Formula:</b> FACT(5)This formula will return 120, which is the factorial of 5 (5x4x3x2x1).
FACTDOUBLE	The FACTDOUBLE function returns the	Syntax: FACTDOUBLE(number)
	double factorial of a	Formula: To calculate the double
	given number. The double factorial is the	=FACTDOUBLE(8) The result would
	product of all the	be $8 \ge 6 \ge 4 \ge 2 = 384$ .
	integers from 1 up to	
	the given number, but skipping every other	
	number.	
FLOOR	The FLOOR function	Syntax: FLOOR(number, significance)
	in Excel rounds a	<b>Formula:</b> ELOOP $(4.7, 0.5)$ The result of
	nearest multiple of a	this formula is 4.5.
	specified value.	
FLOOR.MATH	The FLOOR.MATH	Syntax: FLOOR.MATH(number,
	function rounds a number down to the	significance, [mode])
	nearest multiple of a	Formula: FLOOR.MATH(12.5,
	specified	0.5)Result: 12
FI OOD DDECISE	significance.	Syntax: ELOOP DECISE(number
I LOOK.I KECISE	FLOOR.PRECISE	significance)
	function rounds a	
	number down to the	Formula: FLOOR.PRECISE(3.14159,
	significance	0.01)The result of this example is 3.14.
GCD	GCD stands for	Syntax: GCD(number1, [number2],)
	Greatest Common	
	Divisor. It is used to	<b>Formula:</b> GCD(12, 18)The result of this formula is 6, as 6 is the greatest common
	common divisor of	divisor of 12 and 18.
	two or more integers.	
INT	The INT function in	Syntax: INT(number)
	Excel returns the integer part of a	Formula: INT(3 14)Result: 3
	number by rounding	<b>1 01111111.</b> HV1(5.1+)Kesult. 5
	down to the nearest	
	integer.	Symtom
ISU.CEILING	Excel function that	Syntax: ISO.CEILING(number.significance)
	rounds a number to	

	the nearest integer or	
	multiple of	Formula:
	significance.	ISO.CEILING(3.14,0.1)Result: 3.2
LCM	LCM stands for Least	Syntax: LCM(number1, [number2],)
	Common Multiple. It	
	is a function that is	<b>Formula:</b> LCM(2,3,4)This example
	used to determine the	would return 12, as 12 is the smallest
	smallest number that	number that 2, 3, and 4 all have in
	two or more numbers	common.
	have in common.	
LET	The LET function is a	Syntax: LET(name, expression)
	new function in Excel	
	that allows you to	<b>Formula:</b> Let(A, 10+5)This assigns the
	assign a name to a	value 15 to the name A.
	value or expression. It	
	is useful for making	
	formulas easier to	
	read and understand.	
LN	The LN function	Syntax: LN(number)
	returns the natural	
	logarithm of a	Formula: To calculate the natural
	number. The natural	logarithm of 10, the formula would
	logarithm is the	be:=LN(10)The result would be
	logarithm to the base	2.302585092994046.
	е.	
LOG	The LOG function in	Syntax: LOG(number, [base])
	Microsoft Excel	
	returns the logarithm	Formula: LOG(8,2)This example
	of a number to a	returns the logarithm of 8 to the base of
	specified base.	2, which is 3.
LOG10	The LOG10 function	Syntax: LOG10(number)
	returns the logarithm	
	of a number to the	<b>Formula:</b> LOG10(100)The result of this
	base 10.	formula is 2, as 100 is equal to 10 ² .
MDETERM	MDETERM is an	Syntax: MDETERM(array)
	Excel function used	
	to calculate the	<b>Formula:</b> MDETERM({1,2;3,4})The
	determinant of a	result of this formula is -2, which is the
	given matrix.	determinant of the given matrix.
MINVERSE	The MINVERSE	Syntax: MINVERSE(array)
	function returns the	
	inverse matrix for a	Formula:
	given matrix.	MINVERSE({1,2;3,4})Result: {-
		2,1;1.5,-0.5}
MMULT	The MMULT	Syntax: MMULT(array1, array2)
	function returns the	

	matrix product of two	
	arrays.	Formula: MMULT(A1:B2,C1:D2)
MOD	The MOD function	Syntax: MOD(number, divisor)
	returns the remainder	
	after a number is	Formula: MOD(15,4)This will return a
	divided by a divisor.	result of 3, as 15 divided by 4 is 3 with a
		remainder of 3.
MROUND	The MROUND	Syntax: MROUND(number, multiple)
	function rounds a	
	number to the nearest	<b>Formula:</b> MROUND(7,2)The result of
	multiple of another	this formula is 8.
	number.	
MULTINOMIAL	The	Syntax: MULTINOMIAL(number1,
	MULTINOMIAL	number2,)
	function returns the	
	multinomial	<b>Formula:</b> MULTINOMIAL(2,3,4)This
	coefficient of a set of	example returns the multinomial
	numbers.	coefficient of 2, 3 and 4, which is 120.
MUNIT	MUNIT is an Excel	Syntax: MUNIT(number)
	function that returns	
	the unit of measure	<b>Formula:</b> MUNII(10)1his will return
	associated with a	the unit of measure associated with 10,
	The ODD function is	Suptor: ODD(number)
עעט	used to round a	Syntax: ODD(number)
	number up to the	<b>Formula:</b> $ODD(8.2)$ <b>P</b> osult: 0
	nearest odd integer	Formula. ODD(6.2)Result. )
РІ	The PI function in	Syntax: PI()
	Excel returns the	Syntanit 11()
	value of pi (p), which	Formula: PI()Result:
	is the ratio of the	3.14159265358979
	circumference of a	
	circle to its diameter.	
POWER	Description:The	Syntax: POWER(number, power)
	POWER function is a	
	mathematical	<b>Formula:</b> POWER(2,3)This will return
	function that returns	8, as 2 to the power of 3 is 8.
	the result of a number	
	raised to a specified	
	power.	
PRODUCT	The PRODUCT	Syntax: PRODUCT(number1,
	function multiplies all	[number2],)
	the numbers given as	
	arguments and returns	<b>Formula:</b> PRODUCT(2,3,4,5)Result:
	the product.	120

OUOTIENT	The OUOTIENT	Syntax: OUOTIENT(numerator
QUOTILIU	function returns the	denominator)
	integer portion of a	denominator)
	division	<b>Example:</b> OUOTIENT(10.2) notumes 2
DADIANO		Formula: QUOTIENT(10,5) returns 5
KADIANS	The RADIANS	Syntax: RADIANS(angle)
	function is used to	
	convert angles from	<b>Formula:</b> RADIANS(45)This function
	degrees to radians.	would return the result
		0.78539816339745.
RAND	The RAND function	Syntax: RAND()
	in Excel is used to	
	generate a random	Formula: RAND()Result: 0.838592582
	number between 0	
	and 1.	
RANDARRAY	The RANDARRAY	Syntax: RANDARRAY(rows, columns,
	function is an Excel	min, max)
	function that	
	generates an array of	<b>Formula:</b> RANDARRAY(2.3.1.10)This
	random numbers	will generate a $2 \times 3$ array of random
	between two	numbers between 1 and 10
	specified numbers	
RANDRETWEEN	The	Syntax: RANDBETWEEN(bottom top)
	RANDRETWEEN	
	function is used to	Formula: RANDBETWEEN(1 10)This
	generate a random	will generate a random number between
	number between two	1 and 10
	specified numbers	T and TO.
ROMAN	ROMAN is an Excel	Syntax: ROMAN(number
NOMAN	function that converts	[form])number: The number to be
	a number to a Poman	converted to a Roman
	a numeral	numeral form: [optional] An integer that
	numerai.	specifies the type of Pomen numeral you
		specifies the type of Koman numeral you
		want.
		Formula: $POM \land N(10) Pasult: Y$
POLIND	The POUND	Syntax: POUND(number num digits)
NOUND	function rounds a	Syntax. ROOND(number, num_urgits)
	number to a specified	Formula: ROUND(3 1/159 2)This
	number of digits	example would return 3 14
<b>ΡΟΠΝΙΝΡΟW/N</b>	The DOUNDDOWN	Syntax: DOUNDDOWN(number
KUUNDDUWIN	function rounds a	syntax: KOUNDDOW IN(Intilider,
	number description	num_digits)
	number down to the	Formaula
	specified number of	
DOINIDID	tecimal places.	KOUNDDOWN(2.567,2)Kesult: 2.56
ROUNDUP	The ROUNDUP	Syntax: ROUNDUP(number,
	function rounds a	num_digits)

	number up to a	
	specified number of	<b>Formula:</b> ROUNDUP(3.14159, 2)
	decimal places.	returns 3.15
SEC	The SEC function	Syntax: SEC(angle)
	returns the secant of	
	an angle, which is the	Formula: SEC(45)This will return the
	reciprocal of the	secant of 45 degrees, which is
	cosine of that angle.	1.4142135623731.
SECH	The SECH function	Syntax: SECH(number)
	returns the hyperbolic	Estimate CECU/1)The mercile of this
	secant of a given	Formula: SECH(1) The result of this
	number.	Iormula 18 0.85091812823952.
SERIESSUM	Ine SERIESSUM	<b>Syntax:</b> SERIESSUM $(x, n, m, d)$
	function that	coefficients)x. The input value for the
	runction that	term in the series m. The power of the
	calculates the sull of	last term in the series coefficients: The
	a series of terms in a	coefficients of the terms in the series
	power series.	coefficients of the terms in the series.
		Formula: To calculate the series sum
		for $x = 5$ $n = 0$ $m = 5$ and coefficients =
		1. 2. 3. 4. 5. 6 the formula would
		be:=SERIESSUM(5, 0, 5, 5)
		1.2.3.4.5.6)The result of this formula is
		441.
SEQUENCE	The SEQUENCE	Syntax: SEQUENCE(rows, columns,
	function generates a	[start], [step])
	list of sequential	
	numbers in an array,	<b>Formula:</b> SEQUENCE(3,2,1,2)This
	based on user-defined	would generate the following array: {1,3;
	parameters.	5,7; 9,11}
SIGN	The SIGN function	Syntax: SIGN(number)
	returns the sign of a	
	number. It returns 1 if	Formula: SIGN(5)This formula will
	the number is	return 1, since 5 is a positive number.
	positive, 0 if the	
	number is 0, and -1 if	
	the number is	
	negative.	
SIN	The SIN function	Syntax: SIN(angle)
	returns the sine of a	
	given angle.	Formula: SIN(45)Result:
CINII		U./U/106/8118
SINH	The SINH function	Syntax: SINH(number)
	returns the hyperbolic	

	sine of a given	
	number.	Formula: SINH(2) returns
		3.626860407847019
SQRT	The SQRT function	Syntax: SQRT(number)
	in Excel returns the	
	square root of a given	Formula: SQRT(9)Result: 3
	number.	
SQRTPI	The SQRTPI function	Syntax: SQRTPI(number)
	returns the square	Formerla, COPTDI(2) The regult of this
	multiplied by pi	formula is 2 506628274631
SUBTOTAL	The SUBTOTAL	Syntax: SUBTOTAL (function num
SUDIVIAL	function is used to	range1 range? )Function num: This
	calculate a subtotal in	is a number that specifies the type of
	a list or database. It	calculation to perform.Range1.
	can perform	Range2,: This is a range of cells or
	calculations such as	array of values to perform the
	sum, average, count,	calculation on.
	etc.	
		Formula: SUBTOTAL(9,A2:A10)This
		example would calculate the sum of the
		range A2:A10.
SUM	The SUM function is	Syntax: SUM(number1, [number2],)
	an Excel function	
	used to add up a	Formula: SUM(A1:A5)
SUMIE	The SUMIE function	Suntay, SUMIE(range aritoria
SUMIT	in Excel is used to	[sum_range])
	sum values that meet	
	a certain criteria.	Formula:
		SUMIF(A2:A10,">20",B2:B10)This
		formula will sum all values in B2:B10
		that are greater than 20, based on the
		corresponding values in A2:A10.
SUMIFS	The SUMIFS	Syntax: SUMIFS(sum_range,
	function is an Excel	criteria_range1, criteria1,
	function used to sum	[criteria_range2, criteria2],)
	values in a range that	<b>Formula:</b> To sum the values in call
	meet multiple criteria.	range A1:A10 if the corresponding
		values in cell range R1·R10 are greater
		than 5, the formula would
		be:=SUMIFS(A1:A10,B1:B10,">5")
SUMPRODUCT	The SUMPRODUCT	Syntax: SUMPRODUCT(array1,
	function multiplies	[array2], [array3],)
	corresponding	
	components in the given arrays and	<b>Formula:</b> SUMPRODUCT(A1:A5,
----------	--------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------
	those products.	B1:B3)
SUMSQ	The SUMSQ function is an Excel function that returns the sum	<b>Syntax:</b> SUMSQ(number1, [number2],)
	of the squares of a set of numbers.	<b>Formula:</b> SUMSQ(2,3,4)This example will return the sum of the squares of 2, 3, and 4, which is 29.
SUMX2MY2	The SUMX2MY2 function in Microsoft	Syntax: SUMX2MY2(array_x, array_y)
	sum of the squares of the differences	SUMX2MY2({1,2,3},{4,5,6})This formula will calculate the sum of the
	between two arrays of numbers.	squares of the differences between the two arrays, which is equal to 54.
SUMX2PY2	The SUMX2PY2 function adds the sum	<b>Syntax:</b> SUMX2PY2(array1, array2)
	of the squares of two arrays and then	<b>Formula:</b> SUMX2PY2(A1:A5,B1:B5)This will
	root of the result.	return the square root of the sum of the squares of the values in A1:A5 and B1:B5.
SUMXMY2	The SUMXMY2 function returns the	Syntax: SUMXMY2(array1, array2)
	sum of the difference of two arrays, or	Formula: SUMXMY2(A1:A5,B1:B5)
TAN	The TAN function	Syntax: TAN(angle)
	returns the tangent of a given angle.	<b>Formula:</b> TAN(45) returns the value 1.
TANH	The TANH function	Syntax: TANH(number)
	tangent of a given number.	<b>Formula:</b> TANH(0.5)The result of this formula is 0.4621171572600098
TRUNC	The TRUNC function truncates a number to	Syntax: TRUNC(number, [num_digits])
	an integer by removing the decimal values.	<b>Formula:</b> =TRUNC(3.14159,2)Result: 3.14

## **Statistical Functions**

**Dive Deep into Your Data:** Get into the heart of your data with Statistical Functions! Analyze trends, central tendencies, and data dispersion with functions like AVERAGE, MEDIAN, and STDEV. Explore the distribution of your data with COUNTIF and SUMIF, or identify the minimum and maximum values (MIN, MAX) to gain valuable insights from your datasets.

- Analyze trends, central tendencies, and data dispersion.
- Calculate common statistics like average (AVERAGE), median (MEDIAN), and standard deviation (STDEV).
- Identify minimum and maximum values (MIN, MAX).
- Count data meeting specific criteria (COUNTIF, SUMIF).

Function	Description	Syntax and Formula
AVEDEV	AVEDEV: The	Syntax: AVEDEV(number1,
	AVEDEV function in	[number2],)
	Excel returns the	
	average of the absolute	<b>Formula:</b> AVEDEV(2,4,6,8)The result
	deviations of data	of this function is 2, which is the
	points from their mean.	average of the absolute deviations of 2,
		4, 6, and 8 from their mean of 5.
AVERAGE	The AVERAGE	Syntax: AVERAGE(number1,
	function in Excel	[number2],)
	calculates the	
	arithmetic mean of a	Formula:
	given set of values.	AVERAGE(10,20,30,40)Result: 25
AVERAGEA	The AVERAGEA	<b>Syntax:</b> AVERAGEA(value1, [value2],
	function is an Excel	)
	function that calculates	<b>T</b> 1
	the average of all	
	numbers, including text	AVERAGEA(1,2,3,4,5) Result: 3
	and logical values.	Suntary AVEDACEIE(non ac aritaria
AVERAGEIF	function returns the	Syntax: AVERAGEIF(Tange, Chiefia,
	average (arithmetic	[average_range])
	mean) of all numbers in	<b>Formula:</b> $AVEDAGEIE(A2:A0,, 50)$
	a range of cells based	<b>FORMULA:</b> AVERAOEII (A2.A3, $>30$ , B2.B0) This formula will return the
	on a given criteria	average of all numbers in range B2.B9
	on a given enterna.	where the corresponding cell in range
		A2:A9 is greater than 50.
AVERAGEIFS	The AVERAGEIFS	<b>Syntax:</b> AVERAGEIFS(average range.
	function is an Excel	criteria range1. criteria1.
	function that calculates	[criteria range2, criteria2],)
	the average of a range	
	of cells that meet	Formula: To calculate the average of
	multiple criteria.	the numbers in the range A1:A10, if the
		corresponding cells in the range B1:B10
		contain the value "apple", the formula

		would be: AVERAGEIFS(A1:A10,
		B1:B10, "apple")
BETA.DIST	BETA.DIST is an	<b>Syntax:</b> BETA.DIST(x, alpha, beta,
	Excel function used to	cumulative, [A], [B])
	calculate the	
	cumulative beta	<b>Formula:</b> To calculate the cumulative
	probability density	beta probability density function for a
	function (PDF) for a	given set of parameters $x = 0.5$ , alpha =
	given set of parameters.	2, beta = 3, and cumulative = $1 \text{RUE}$ , the
		IOHOWING IOFMUIA IS
		used:=BETA.DIST $(0.5, 2, 3, TRUE)$ The
	DETA INV is on Even	Symptoxy DETA INIV(probability, alpha
<b>BEIA.INV</b>	BETA.INV IS all Excel	<b>Syntax:</b> BETA.IN v (probability, alpha, beta [A] [P])
	inverse of the	Ucta, [A], [D])
	cumulative distribution	<b>Formula:</b> RETA INV $(0.7, 2, 5, 0)$
	function for a specified	1) This example returns the value $0.837$
	beta distribution	which is the inverse of the cumulative
		distribution function for the specified
		beta distribution with a probability of
		0.7. alpha of 2. and beta of 5.
BINOM.DIST	The BINOM.DIST	<b>Syntax:</b> BINOM.DIST(number s,
	function in Excel	trials, probability_s, cumulative)
	returns the individual	
	term binomial	<b>Formula:</b> BINOM.DIST(2, 10, 0.5,
	distribution probability.	FALSE)This example returns the
	It calculates the	probability of 2 successes in 10
	probability of a certain	independent trials, each with a
	number of successes in	probability of success of 0.5.
	a given number of	
	independent trials, each	
	with the same	
	probability of success.	
BINOM.DIST.RANGE	BINOM.DIST.RANGE	Syntax: BINOM.DIST.RANGE(trials,
	is an Excel function	probability_s, number_s, number_s2)
	that calculates the	<b>Formulas</b> To coloulate the probability
	probability of a certain	of getting between 2 and 4 successes in
	a sequence of	a sequence of 5 independent Bernoulli
	independent Bernoulli	trials with a probability of success of
	trials given a	0.4 in each trial the formula would be
	probability of success	BINOM DIST RANGE(5, 0,4, 2, 4)
	in each trial.	
BINOM.INV	The BINOM.INV	Syntax: BINOM.INV(probability.
	function is an Excel	number_trials, alpha)
	statistical function that	- · · · ·

	returns the inverse of the cumulative binomial distribution. This function is useful in determining the number of successes given a probability and a number of trials	<b>Formula:</b> Suppose you want to find the number of successes given a probability of 0.5 and 10 trials. The formula would be:=BINOM.INV(0.5,10,0.5)The result would be 5, meaning that there is a 50% chance of 5 successes in 10 trials.
CHISQ.DIST	The CHISQ.DIST function returns the cumulative probability of a chi-squared distribution.	Syntax: CHISQ.DIST(x,deg_freedom,cumulativ e) Formula: CHISQ.DIST(4,3,TRUE)This example returns the cumulative probability of a chi-squared distribution with 4 degrees of freedom. The result is 0.2266.
CHISQ.DIST.RT	The CHISQ.DIST.RT function returns the right-tailed probability of the chi-squared distribution.	Syntax: CHISQ.DIST.RT(x,deg_freedom) Formula: CHISQ.DIST.RT(3,4)This example returns the right-tailed probability of the chi-squared distribution with 3 degrees of freedom. The result is 0.0682689492137086.
CHISQ.INV	The CHISQ.INV function in Excel returns the inverse of the left-tailed probability of the chi- squared distribution.	Syntax: CHISQ.INV(probability,deg_freedom) Formula: CHISQ.INV(0.95,2)This example returns the inverse of the left- tailed probability of the chi-squared distribution with a probability of 0.95 and 2 degrees of freedom. The result is 5.9915.
CHISQ.INV.RT	The CHISQ.INV.RT function returns the inverse of the right- tailed probability of the chi-squared distribution.	Syntax: CHISQ.INV.RT(probability,deg_freedo m) Formula: CHISQ.INV.RT(0.95,2)This example returns the inverse of the right- tailed probability of the chi-squared distribution with a probability of 0.95 and a degree of freedom of 2. The result is 5.991464547.
CHISQ.TEST	CHISQ.TEST is an Excel function used to	<b>Syntax:</b> CHISQ.TEST(observed_range, expected_range)

	perform a chi-square test of independence. It is used to determine whether there is a significant association between two categorical variables.	Formula: CHISQ.TEST(A1:B10, C1:D10)
CONFIDENCE.NORM	The CONFIDENCE.NORM function returns the confidence interval for a population mean, using a normal distribution. This function uses a confidence level to	Syntax: CONFIDENCE.NORM(alpha,standard_ dev,size)alpha: The significance level used to compute the confidence level.standard_dev: The standard deviation for the data range.size: The number of observations in the data range.
	calculate the margin of error that is added and subtracted from the sample mean to create the confidence interval.	<b>Formula:</b> To calculate the 95% confidence interval for a sample of 100 observations with a standard deviation of 10, the formula would be:1.95996398454005The result would be a margin of error of 2.262.
CONFIDENCE.T	The CONFIDENCE.T function is used to calculate the confidence interval for a population mean, based on a sample mean and standard deviation.	Syntax: CONFIDENCE.T(alpha, standard_dev, size) Formula: To calculate the 95% confidence interval for a sample mean of 10, with a standard deviation of 4, and a sample size of 25, the formula would be: CONFIDENCE.T(0.05, 4, 25) which would return a result of 8.8 to 11.2.
CORREL	CORREL is an Excel function that returns the correlation coefficient of two sets of values. It is used to measure the linear relationship between two variables.	<b>Syntax:</b> CORREL(array1, array2) <b>Formula:</b> CORREL(A1:A10, B1:B10)This example returns the correlation coefficient of the values in cells A1 through A10 and B1 through B10.
COUNT	The COUNT function is used to count the number of cells that contain numbers within a specified range.	Syntax: COUNT(value1, [value2],) Formula: COUNT(A1:A6, C1:C3), This example counts numbers across multiple ranges, say A1:A6 and C1:C3 where C1 to C3 also contain numbers.

COUNTA	The COUNTA function in Microsoft Excel counts the number of cells that contain data within a range. The COUNTBLANK function counts the	Syntax: COUNTA(value1, [value2], ) Formula: COUNTA(A1:A10)This example will count the number of cells in the range A1:A10 that contain data. Syntax: COUNTBLANK(range)
	in a range of cells.	Formula: COUNTBLANK(A1:A10)This formula would count the number of blank cells in the range A1 to A10.
COUNTIF	COUNTIF is an Excel function used to count the number of cells within a range that meet a specified criteria.	<b>Syntax:</b> COUNTIF(range, criteria) <b>Formula:</b> COUNTIF(A1:A10, ">5")This example will count the number of cells in range A1:A10 that are greater than 5.
COUNTIFS	The COUNTIFS function is a statistical function used to count the number of cells in a range that meet multiple criteria.	Syntax: COUNTIFS (criteria_range1, criteria1, [criteria_range2, criteria2],) Formula: COUNTIFS (A1:A10, ">20", B1:B10, ">30")This example will count the number of cells in the range A1:A10 that are greater than 20, and the number of cells in the range B1:B10 that are greater than 30.
COVARIANCE.P	The COVARIANCE.P function calculates the population covariance of two sets of values.	Syntax: COVARIANCE.P(array1, array2) Formula: COVARIANCE.P(A2:A7,B2:B7)This example returns the population covariance of the values in cells A2 through A7 and the values in cells B2 through B7.
COVARIANCE.S	The COVARIANCE.S function is an Excel function used to calculate the sample covariance of two sets of values.	Syntax: COVARIANCE.S(array1,array2) Formula: COVARIANCE.S(A1:A5,B1:B5)This example will calculate the sample covariance of the two sets of values in the range A1:A5 and B1:B5.
DEVSQ	DEVSQ is an Excel function that calculates	<b>Syntax:</b> DEVSQ(number1, [number2],)

	the sum of squares of deviations of data points from their sample mean.	<b>Formula:</b> DEVSQ(2, 3, 4, 5)This example would return the sum of squares of deviations of the data points 2, 3, 4, and 5 from their sample mean, which is 3.5. The result would be 4.5.
EXPON.DIST	The EXPON.DIST function returns the exponential distribution. It returns the probability that a random variable, which follows an exponential distribution, is less than or equal to a given value.	Syntax: EXPON.DIST(x,lambda,cumulative)x: The value at which you want to evaluate the distribution.lambda: The rate parameter of the distribution.cumulative: A logical value that determines the form of the function. Formula: EXPON.DIST(2,1,TRUE)This formula will return the probability that a random variable, which follows an exponential distribution with rate parameter 1, is less than or equal to 2.
F.DIST	F.DIST is an Excel function that returns the F probability distribution. It calculates the probability of a value occurring given a certain number of degrees of freedom.	Syntax: F.DIST(x,deg_freedom1,deg_freedom2) Formula: F.DIST(2,2,4)This example returns the probability of a value of 2 occurring given 2 and 4 degrees of freedom.
F.DIST.RT	The F.DIST.RT function returns the right-tailed F probability distribution. This function is used to calculate the probability that the observed variance in a sample is greater than the variance in the entire population.	Syntax: F.DIST.RT(x,deg_freedom1,deg_freedo m2) Formula: F.DIST.RT(4,5,6)This example will return the probability that the observed variance in a sample is greater than 4, when the degrees of freedom for the sample and the population are 5 and 6, respectively.
F.INV	F.INV is an Excel function used to calculate the inverse of the F-distribution. It returns the probability associated with a given	Syntax: F.INV(probability, degrees_freedom1, degrees_freedom2) Formula: F.INV(0.05, 5, 10)This example returns the x-value associated with a probability of 0.05, with 5

	x-value and degrees of freedom.	degrees of freedom in the numerator and 10 degrees of freedom in the denominator.
F.INV.RT	F.INV.RT is an Excel function that returns the inverse of the F probability distribution. It returns the value of the inverse cumulative distribution function (inverse of the cumulative probability) for a given probability.	Syntax: F.INV.RT(probability,deg_freedom1,de g_freedom2) Formula: F.INV.RT(0.95,2,3)This example returns the inverse cumulative distribution for a probability of 0.95 with two degrees of freedom in the numerator and three degrees of freedom in the denominator. The result is 6.867.
<b>F.TEST</b>	F.TEST is an Excel function used to calculate the probability of two samples having the same variance. It takes two sets of data as its arguments and returns a probability value.	<b>Syntax:</b> F.TEST(array1, array2) <b>Formula:</b> F.TEST(A1:A10, B1:B10)This function returns the probability that the two sets of data in cells A1:A10 and B1:B10 have the same variance.
FISHER	FISHER is an Excel function that returns the Fisher transformation at x-value. The Fisher transformation is a way to normalize data that may not be normally distributed.	Syntax: FISHER(x) Formula: FISHER(0.5) returns 0.279415498198926
FISHERINV	The FISHERINV function returns the inverse of the Fisher transformation at a specified value.	Syntax: FISHERINV(x) Formula: FISHERINV(0.9) returns 0.47140452079103
FORECAST	The FORECAST function is used to calculate a future value based on existing values provided. It uses linear regression to calculate the value.	Syntax: FORECAST(x, known_y's, known_x's) Formula: FORECAST(4,A1:A4,B1:B4)This example uses the FORECAST function to calculate the future value of 4 based on the existing values in cells A1-A4 and B1-B4.

FORECAST.ETS	The FORECAST.ETS function is an Excel function that predicts future values based on existing values. It uses the Exponential Triple Smoothing (ETS) algorithm to predict future values.	Syntax: FORECAST.ETS(known_y's, [known_x's], new_x's, [seasonality], [trend], [confidence]) Formula: FORECAST.ETS(A1:A10, B1:B10, 11, 0, 1, 95)This example uses the values in cells A1 to A10 and B1 to B10 to predict the value in cell A11 using the Exponential Triple Smoothing (ETS) algorithm with a trend of 1 and a confidence of 95%.
FORECAST.ETS.CON FINT	The FORECAST.ETS.CON FINT function is an Excel function that returns a confidence interval for a forecast generated by the FORECAST.ETS function.	Syntax: FORECAST.ETS.CONFINT(known_y' s, [known_x's], [confidence_level], [forecast_type], [seasonality], [data_completion], [aggregation]) Formula: FORECAST.ETS.CONFINT(B2:B13,C 2:C13,90%)This example will return a 90% confidence interval for the forecast generated by the FORECAST.ETS function using the known y values in the range B2:B13 and the known x values in the range C2:C13.
FORECAST.ETS.SEA SONALITY	The FORECAST.ETS.SEA SONALITY function in Microsoft Excel is used to predict future values based on existing values that have a seasonal pattern.	Syntax: FORECAST.ETS.SEASONALITY(x, known_y's, [seasonality], [data_completion], [aggregation]) Formula: FORECAST.ETS.SEASONALITY(B2, B3:B12, 12, 1, 0)This example uses the FORECAST.ETS.SEASONALITY function to predict the value in cell B2 based on the values in cells B3:B12. The seasonality is set to 12, data completion is set to 1, and aggregation is set to 0.
FORECAST.ETS.STA T	The FORECAST.ETS.STA T function in Microsoft Excel is used to calculate a future value based on existing values using the Exponential Triple	Syntax: FORECAST.ETS.STAT(known_y's, [known_x's], [new_x's], [stat_type], [seasonality], [aggregation]) Formula: FORECAST.ETS.STAT(A1:A10, B1:B10, 11, "stat", 12, "average")

	Smoothing (ETS) algorithm	
<b>FORECAST.LINEAR</b>	The FORECAST.LINEAR function is an Excel function that predicts a value based on existing values. It uses a linear regression algorithm to calculate the best fit line for the existing values and predict a value for the specified x value.	Syntax: FORECAST.LINEAR(x, known_y's, known_x's) Formula: To predict the sales for the month of April based on the existing sales data for the months of January, February and March, the following formula can be used:FORECAST.LINEAR(4, B2:B4, A2:A4)Where A2:A4 contains the months of January, February and March, and B2:B4 contains the sales figures for those months.
FREQUENCY	The FREQUENCY function in Excel returns a frequency distribution, which is a summary table that shows the frequency of values within a range.	Syntax: FREQUENCY(data_array, bins_array) Formula: FREQUENCY(A2:A8,B2:B4)This example will return a frequency distribution of the values in range A2:A8, using the range B2:B4 as the bins.
GAMMA	The GAMMA function is used to calculate the gamma value of a given number. Gamma is a mathematical function that is used to calculate the probability of a random variable taking on a value less than or equal to a certain number.	<b>Syntax:</b> GAMMA(number) <b>Formula:</b> GAMMA(5)This formula will return the gamma value of 5.
GAMMA.DIST	The GAMMA.DIST function in Excel returns the gamma distribution, which is a type of probability distribution. It is used to calculate the probability that a random variable is less than or equal to a given value.	Syntax: GAMMA.DIST(x,alpha,beta,cumulative)) Formula: GAMMA.DIST(2,2,2,TRUE)This example returns the cumulative gamma distribution for x=2, alpha=2, and beta=2. The result is 0.632120558828558.

GAMMA.INV	The GAMMA.INV function returns the inverse of the gamma cumulative distribution.	Syntax: GAMMA.INV(probability,alpha,beta,cu mulative) Formula: To calculate the inverse of the gamma cumulative distribution with a probability of 0.5, an alpha of 2, and a beta of 3, the following formula would be used:=GAMMA.INV(0.5,2,3,TRUE)Th e result of this formula would be 3.
GAMMALN	GAMMALN: The GAMMALN function returns the natural logarithm of the gamma function, G(x).	<b>Syntax:</b> GAMMALN(x) <b>Formula:</b> GAMMALN(7)The result of this example would be 1.94591.
GAMMALN.PRECISE	The GAMMALN.PRECISE function is an Excel function that returns the natural logarithm of the gamma function, G(x), to a high degree of precision.	<b>Syntax:</b> GAMMALN.PRECISE(x) <b>Formula:</b> GAMMALN.PRECISE(5)The result of this function would be the natural logarithm of the gamma function, G(5), to a high degree of precision.
GAUSS	The GAUSS function returns the cumulative distribution function (CDF) of a standard normal distribution.	<b>Syntax:</b> GAUSS(x) <b>Formula:</b> GAUSS(1.2)This function returns the value of 0.8849.
GEOMEAN	The GEOMEAN function calculates the geometric mean of a set of numbers. The geometric mean is the average of a set of numbers multiplied together and then taking the nth root, where n is the number of numbers in the set.	Syntax: GEOMEAN(number1, [number2],) Formula: GEOMEAN(2,3,4,5)This example would return 3.5, which is the geometric mean of the set of numbers (2, 3, 4, and 5).
GROWTH	The GROWTH function returns an array of y-values for a series of new x-values that are linearly interpolated from a	Syntax: GROWTH(known_y's, [known_x's], [new_x's], [const]) Formula: GROWTH(B2:B6,A2:A6,A7:A10,TRU E)

	given set of x-values	
HARMEAN	The HARMEAN function is used to calculate the harmonic mean of a set of numbers. The harmonic mean is the reciprocal of the arithmetic mean of the reciprocals of the given numbers.	Syntax: HARMEAN(number1, [number2],) Formula: HARMEAN(2,4,6)Result: 3.6
HYPGEOM.DIST	HYPGEOM.DIST is an Excel function that calculates the probability of a given number of successes in a sample, without replacement, from a population of a given size.	Syntax: HYPGEOM.DIST(sample_s, number_sample, population_s, successes, cumulative) Formula: To calculate the probability of getting 3 successes in a sample of 10 from a population of 20, the formula would be: HYPGEOM.DIST(10, 20, 3, FALSE).
INTERCEPT	The INTERCEPT function in Excel returns the y-intercept of a given linear regression line. It is used to calculate the point at which a line crosses the y-axis.	Syntax: INTERCEPT(known_y's, known_x's) Formula: INTERCEPT(B2:B7,A2:A7)This formula returns the y-intercept of the linear regression line based on the data in cells A2:A7 and B2:B7.
KURT	KURT: The KURT function in Excel returns the kurtosis of a data set. Kurtosis is a measure of the "peakedness" of a distribution.	Syntax: KURT(number1, [number2],) Formula: KURT(2,4,6,8,10)This formula would return -1.2, which is the kurtosis of the given data set.
LARGE	The LARGE function returns the nth largest value from a range of values.	Syntax: LARGE(array, nth) Formula: LARGE(A1:A10, 3)This example would return the third largest value from the range of values in cells A1 to A10.
LINEST	The LINEST function is a statistical function in Excel that returns the parameters of a linear trend. It can be used to	<b>Syntax:</b> LINEST(known_y's, [known_x's], [const], [stats])

	calculate the slope and y-intercept of a line, as well as the correlation coefficient, standard	<b>Formula:</b> LINEST(B2:B11,A2:A11,TRUE,TRUE)
LOCEST	and other statistics.	Syntax I OGEST(known y's
LOGEST	The LOGEST function is used to calculate an exponential curve that best fits a set of data points. It returns an array of values that describe the exponential curve, including the y- intercept, the slope, and the correlation coefficient.	<b>Syntax:</b> LOGEST(known_y's, [known_x's], [const], [stats]) <b>Formula:</b> LOGEST(A2:A10, B2:B10, TRUE, TRUE)This example will calculate an exponential curve that best fits the data points in cells A2:A10 and B2:B10, and return an array of values that describe the exponential curve, including the y-intercept, the slope, and the correlation coefficient.
LOGNORM.DIST	The LOGNORM.DIST function returns the cumulative lognormal distribution of x, given parameters for the distribution's mean and standard deviation.	<ul> <li>Syntax:LOGNORM.DIST(x, mean, standard_dev, cumulative)</li> <li>Formula: LOGNORM.DIST(2, 3, 0.5, TRUE)This example returns the cumulative lognormal distribution of 2, given a mean of 3 and a standard deviation of 0.5.</li> </ul>
LOGNORM.INV	The LOGNORM.INV function returns the inverse of the lognormal cumulative distribution for a specified value, mean and standard deviation.	Syntax: LOGNORM.INV(probability, mean, standard_dev) Formula: LOGNORM.INV(0.5, 2, 0.5)This example returns the inverse of the lognormal cumulative distribution for a probability of 0.5, a mean of 2 and a standard deviation of 0.5. The result is 1.897.
MAX	The MAX function in Excel returns the largest value from a range of values.	<b>Syntax:</b> MAX(number1, [number2],) <b>Formula:</b> MAX(A1:A10)This example returns the largest value from the range A1:A10.
MAXA	The MAXA function is an Excel function that returns the maximum value in a range of values, including logical values and text.	Syntax: MAXA(value1, [value2],) Formula: MAXA(A1:A10)This example returns the maximum value in the range of cells A1 to A10.

MAXIFS	The MAXIFS function returns the maximum value in a range, based on multiple criteria.	Syntax: MAXIFS(max_range, criteria_range1, criteria1, [criteria_range2, criteria2],) Formula: MAXIFS(A1:A10, B1:B10, ">=10", C1:C10, "<=20")This formula returns the maximum value in the range A1:A10, where the values in the range
		B1:B10 are greater than or equal to 10 and the values in the range C1:C10 are less than or equal to 20.
MEDIAN	The MEDIAN function returns the median of the given numbers. The median is the middle number in a set of numbers; it is calculated by arranging all the numbers from lowest to highest value and picking the middle number.	Syntax: MEDIAN(number1, [number2],) Formula: MEDIAN(2, 4, 5, 7, 9)Result: 5
MIN	The MIN function returns the smallest value from a given set of numbers.	<pre>Syntax: MIN(number1, [number2],) Formula: MIN(2,4,6,8)Result: 2</pre>
MINA	The MINA function is used to find the minimum value in a given array of values, including text and logical values.	<b>Syntax:</b> MINA(value1, [value2],) <b>Formula:</b> MINA(2,5,8,1,6)This will return 1, which is the minimum value in the array.
MINIFS	The MINIFS function is used to find the minimum value from a range of cells that meet multiple criteria.	Syntax: MINIFS(min_range, criteria_range1, criteria1, [criteria_range2, criteria2],) Formula: MINIFS(C2:C10,A2:A10,">10",B2:B10 ,"<20")This formula will find the minimum value in the range C2:C10 where the values in A2:A10 are greater than 10 and the values in B2:B10 are less than 20.
MODE.MULT	MODE.MULT is an Excel function that returns a vertical array	Syntax: MODE.MULT(array)

MODE.SNGL	of the most frequently occurring, or repetitive, values in an array or range of data. MODE.SNGL is an Excel function that returns the most frequently occurring value in a set of numbers.	Formula: MODE.MULT(A2:A10)This formula returns the most frequently occurring value in the range A2:A10. Syntax: MODE.SNGL(number1,[number2],) Formula: MODE.SNGL(1,2,2,3,3,3,4,4,4,4)The result of this example would be 4, since 4 is the most frequently occurring value in the set.
NEGBINOM.DIST	NEGBINOM.DIST is an Excel function that calculates the negative binomial distribution. The negative binomial distribution is a probability distribution that is used to represent the number of successes in a sequence of independent Bernoulli trials before a specified number of failures occur.	Syntax: NEGBINOM.DIST(number_f, number_s, probability_s, cumulative) Where:number_f = the number of failuresnumber_s = the number of successesprobability_s = the probability of successcumulative = a logical value that determines the form of the function (TRUE for cumulative distribution function and FALSE for probability mass function) Formula: NEGBINOM.DIST(4, 2, 0.5, FALSE)This formula returns the probability of having 2 successes in 4 independent Bernoulli trials with a probability of success of 0.5.
NORM.DIST	NORM.DIST is an Excel function that returns the cumulative normal distribution for a given mean and standard deviation. It is used to calculate the probability that a random variable is less than or equal to a certain value.	Syntax: NORM.DIST(x, mean, standard_dev, cumulative)Where:x = The value for which you want to calculate the distribution.mean = The mean of the distribution.standard_dev = The standard deviation of the distribution.cumulative = A logical value that determines the form of the function. If cumulative is TRUE, NORM.DIST returns the cumulative distribution function; if FALSE, it returns the probability density function. <b>Formula:</b> NORM.DIST(2,1,1,TRUE)This formula returns the cumulative normal distribution for a mean of 1 and a

		standard deviation of 1, with a value of 2. The result is 0.97725.
NORM.INV	NORM.INV is an Excel function that returns the inverse of the standard normal cumulative distribution. The syntax is NORM.INV(probabilit y, mean, standard_dev).	<ul> <li>Syntax: NORM.INV(probability, mean, standard_dev)</li> <li>Formula: NORM.INV(0.5, 0, 1) The above formula will return a value of 0, which is the inverse of the standard normal cumulative distribution at the probability of 0.5.</li> </ul>
NORM.S.DIST	NORM.S.DIST is an Excel statistical function that returns the standard normal cumulative distribution function. It gives the probability that a random variable with a normal distribution will be less than or equal to a specified value.	Syntax: NORM.S.DIST(x, cumulative)x: The value for which you want the distribution.Cumulative: A logical value that determines the form of the function. If cumulative is TRUE, NORM.S.DIST returns the cumulative distribution function; if FALSE, it returns the probability density function. <b>Formula:</b> To find the probability that a random variable with a normal distribution will be less than or equal to 2.5, use the formula =NORM.S.DIST(2.5, TRUE). The result is 0.993790.
NORM.S.INV	NORM.S.INV is an Excel function that returns the inverse of the standard normal cumulative distribution. This function is used to calculate the probability of a value being greater than or less than a certain number.	<b>Syntax:</b> NORM.S.INV(probability) <b>Formula:</b> To calculate the probability of a value being greater than 0.5, the formula would be NORM.S.INV(0.5). This would return 0.67448975019608.
PEARSON	The PEARSON	Syntax: PEARSON(array1, array2)
	function returns the Pearson product moment correlation coefficient, which is a measure of the linear correlation between two variables.	Formula: PEARSON(A1:A10,B1:B10)
PERCENTILE.EXC	The PERCENTILE.EXC function is an Excel	<b>Syntax:</b> PERCENTILE.EXC(array, k)

	function that returns the	
	k-th percentile of values	Formula:
	in a range.	PERCENTILE.EXC(A1:A10, 0.5)This
	C	example will return the 50th percentile
		of the values in the range A1:A10.
PERCENTILE.INC	The	Syntax: PERCENTILE.INC(array, k)
	PERCENTILE INC	
	function in Excel	Formula: PERCENTILE INC(B2·B10
	returns the k-th	0.5)This example would return the 50th
	percentile of values in a	percentile of the values in the range
	rongo	P2.P10
DED CENTED A NIZ EV C	The	D2.D10.
PERCENIKANK.EAU	The DEDGENTED ANIX EXC	Syntax: PERCENTRANK.EXC(array,
	PERCENTRANK.EXC	x, [significance])
	function returns the	
	rank of a value in a data	Formula:
	set as a percentage of	PERCENTRANK.EXC(A2:A10, A7,
	the data set.	4)In this example, the
		PERCENTRANK.EXC function returns
		the rank of the value in cell A7 (which
		is 5) as a percentage of the values in the
		range A2:A10. The third argument, 4,
		specifies that the result should be
		calculated to four decimal places.
		-
PERCENTRANK.INC	The	Syntax: PERCENTRANK.INC(array,
PERCENTRANK.INC	The PERCENTRANK.INC	<b>Syntax:</b> PERCENTRANK.INC(array, x, [significance])
PERCENTRANK.INC	The PERCENTRANK.INC function returns the	<b>Syntax:</b> PERCENTRANK.INC(array, x, [significance])
PERCENTRANK.INC	The PERCENTRANK.INC function returns the rank of a value in a data	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula:
PERCENTRANK.INC	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In
PERCENTRANK.INC	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set.	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC
PERCENTRANK.INC	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set.	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the
PERCENTRANK.INC	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set.	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the
PERCENTRANK.INC	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set.	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8 with 4
PERCENTRANK.INC	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set.	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance
PERCENTRANK.INC	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set.	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance. Syntax: PERMUT(number
PERCENTRANK.INC PERMUT	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set. The PERMUT function is used to calculate the	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance. Syntax: PERMUT(number, number, chosen)
PERCENTRANK.INC PERMUT	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set. The PERMUT function is used to calculate the number of permutations	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance. Syntax: PERMUT(number, number_chosen)
PERCENTRANK.INC PERMUT	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set. The PERMUT function is used to calculate the number of permutations for a given number of	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance. Syntax: PERMUT(number, number_chosen) Formula: To calculate the number of
PERCENTRANK.INC PERMUT	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set. The PERMUT function is used to calculate the number of permutations for a given number of objects. A permutation	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance. Syntax: PERMUT(number, number_chosen) Formula: To calculate the number of permutations of 8 objects taken 3 at a
PERCENTRANK.INC PERMUT	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set. The PERMUT function is used to calculate the number of permutations for a given number of objects. A permutation	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance. Syntax: PERMUT(number, number_chosen) Formula: To calculate the number of permutations of 8 objects taken 3 at a time_the formule would her
PERCENTRANK.INC PERMUT	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set. The PERMUT function is used to calculate the number of permutations for a given number of objects. A permutation is the arrangement of a set of objects in a	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance. Syntax: PERMUT(number, number_chosen) Formula: To calculate the number of permutations of 8 objects taken 3 at a time, the formula would be: -DEPMUT(8 2)The result would be
PERCENTRANK.INC	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set. The PERMUT function is used to calculate the number of permutations for a given number of objects. A permutation is the arrangement of a set of objects in a amaifia order	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance. Syntax: PERMUT(number, number_chosen) Formula: To calculate the number of permutations of 8 objects taken 3 at a time, the formula would be: =PERMUT(8,3)The result would be
PERMUT	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set. The PERMUT function is used to calculate the number of permutations for a given number of objects. A permutation is the arrangement of a set of objects in a specific order.	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance. Syntax: PERMUT(number, number_chosen) Formula: To calculate the number of permutations of 8 objects taken 3 at a time, the formula would be: =PERMUT(8,3)The result would be 336.
PERMUT PERMUTATIONA	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set. The PERMUT function is used to calculate the number of permutations for a given number of objects. A permutation is the arrangement of a set of objects in a specific order. The PERMUTATIONA	Syntax: PERCENTRANK.INC(array, x, [significance]) Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance. Syntax: PERMUT(number, number_chosen) Formula: To calculate the number of permutations of 8 objects taken 3 at a time, the formula would be: =PERMUT(8,3)The result would be 336. Syntax: PERMUTATIONA(number,
PERMUT PERMUTATIONA	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set. The PERMUT function is used to calculate the number of permutations for a given number of objects. A permutation is the arrangement of a set of objects in a specific order. The PERMUTATIONA function returns the	<ul> <li>Syntax: PERCENTRANK.INC(array, x, [significance])</li> <li>Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance.</li> <li>Syntax: PERMUT(number, number_chosen)</li> <li>Formula: To calculate the number of permutations of 8 objects taken 3 at a time, the formula would be: =PERMUT(8,3)The result would be 336.</li> <li>Syntax: PERMUTATIONA(number, number_chosen)</li> </ul>
PERMUT PERMUTATIONA	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set. The PERMUT function is used to calculate the number of permutations for a given number of objects. A permutation is the arrangement of a set of objects in a specific order. The PERMUTATIONA function returns the number of permutations	<ul> <li>Syntax: PERCENTRANK.INC(array, x, [significance])</li> <li>Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance.</li> <li>Syntax: PERMUT(number, number_chosen)</li> <li>Formula: To calculate the number of permutations of 8 objects taken 3 at a time, the formula would be: =PERMUT(8,3)The result would be 336.</li> <li>Syntax: PERMUTATIONA(number, number_chosen)</li> </ul>
PERCENTRANK.INC PERMUT PERMUTATIONA	The PERCENTRANK.INC function returns the rank of a value in a data set as a percentage of the data set. The PERMUT function is used to calculate the number of permutations for a given number of objects. A permutation is the arrangement of a set of objects in a specific order. The PERMUTATIONA function returns the number of permutations for a given number of	<ul> <li>Syntax: PERCENTRANK.INC(array, x, [significance])</li> <li>Formula: PERCENTRANK.INC(A2:A8,A4,4)In this example, the PERCENTRANK.INC function would return the rank of the value in cell A4 as a percentage of the data set in cells A2 to A8, with 4 decimal places of significance.</li> <li>Syntax: PERMUT(number, number_chosen)</li> <li>Formula: To calculate the number of permutations of 8 objects taken 3 at a time, the formula would be: =PERMUT(8,3)The result would be 336.</li> <li>Syntax: PERMUTATIONA(number, number_chosen)</li> </ul>

	selected from number	permutations for 5 objects that can be
	objects.	selected from 2 objects, which is 10.
PHI	PHI is a statistical	<b>Syntax:</b> PHI(x, y)
	function in Excel that	
	calculates the value of	<b>Formula:</b> PHI(A1:A10, B1:B10)
	the Phi coefficient,	
	which is a measure of	
	association between	
	two binary variables. It	
	is often used to measure	
	the strength of a linear	
	relationship between	
	two variables.	
POISSON.DIST	The POISSON.DIST	Syntax:
	function in Excel	POISSON.DIST(x,mean,cumulative)
	returns the probability	
	of a given number of	Formula:
	events occurring in a	POISSON.DIST(5,3,FALSE)This
	fixed period of time	formula returns the probability of 5
	when the rate of events	events occurring in a given period of
	is known.	time when the rate of events is 3.
PROB	The PROB function in	Syntax:
	Microsoft Excel is used	PROB(x_range,prob_range,lower_limit,
	to calculate the	upper_limit)
	probability of a given	
	event. It returns the	<b>Formula:</b> PROB(A1:A5,B1:B5,20,30)
	probability that values	
	two limits	
OUARTH F FXC	The $OUARTILE EXC$	Syntay: OLIARTILE EXC(array quart)
QUARTILL.EAC	function returns the	Syntax. QUARTIEL.EAC(anay, quart)
	quartile of a dataset	Formula
	which is a type of	OUARTILE EXC(A1 $\cdot$ A103)This
	statistical measure.	example returns the third quartile of the
		data in cells A1 through A10.
OUARTILE.INC	The OUARTILE.INC	Syntax: OUARTILE.INC(array.
	function returns the	quart)Array: The array or range of cells
	quartile of a given data	containing numerical data for which you
	set, where quartiles	want the quartile value.Quart: A number
	divide a ranked set of	specifying which quartile value to
	data into four equal	return.
	parts.	
		Formula: The formula
		=QUARTILE.INC(A1:A10,2) returns
		the second quartile (median) of the data
		set in cells A1:A10.

RANK.AVG RANK.EQ	The RANK.AVG function returns the rank of a number in a list of numbers. It assigns the same rank to numbers with the same value. The RANK.EQ function returns the	Syntax: RANK.AVG(number,ref,[order]) Formula: RANK.AVG(B2,B2:B7,1)This example returns the rank of the number in cell B2 in the range B2:B7, in ascending order. Syntax: RANK.EQ (number, reference, [order])
	list of numbers.	<b>Formula:</b> RANK.EQ (5, {1,2,3,5,6,7}, 0)The example returns 4, as 5 is the 4th number in the list.
RSQ	RSQ is a statistical function in Microsoft Excel that returns the square of the Pearson product-moment correlation coefficient (R-squared) of two supplied sets of values. It is used to measure how closely two sets of data points fit a given regression line.	Syntax: RSQ(known_y's, known_x's) Formula: RSQ(A1:A6,B1:B6)
SKEW	SKEW: The SKEW function returns the skewness of a distribution based on a supplied set of values. Skewness is a measure of asymmetry in a probability distribution.	<b>Syntax:</b> SKEW(number1,[number2],) <b>Formula:</b> SKEW(A2:A10)This function will return the skewness of the distribution of the values in cells A2 through A10.
SKEW.P	SKEW.P is a statistical function in Microsoft Excel that calculates the skewness of a distribution based on a population of numerical data.	Syntax: SKEW.P(number1,[number2],) Formula: SKEW.P(2,4,6,8,10)The result of this formula is 0, indicating that the data set is perfectly symmetrical.
SLOPE	The SLOPE function calculates the slope of a regression line based on the given data points. It is used to measure the	Syntax: SLOPE (known_y's, known_x's) Formula: SLOPE (A1:A10, B1:B10)

	rate of change in a data set.	
SMALL	The SMALL function returns the nth smallest value from a given set of values.	<b>Syntax:</b> SMALL(array, nth_smallest) <b>Formula:</b> SMALL(A1:A10, 3)This example returns the 3rd smallest value from the range A1:A10.
STANDARDIZE	The STANDARDIZE function returns a normalized value from a distribution characterized by a mean and standard deviation.	Syntax: STANDARDIZE(x, mean, standard_dev) Formula: STANDARDIZE(3, 5, 2)This example returns -1, which is the normalized value from a distribution with a mean of 5 and a standard deviation of 2.
STDEV.P	STDEV.P is an Excel function that calculates the standard deviation of a population based on a sample of numeric values.	Syntax: STDEV.P(number1, [number2],) Formula: STDEV.P(1,2,3,4,5)This example would return 1.58113883008419.
STDEV.S	STDEV.S is an Excel function that calculates the standard deviation of a sample based on a supplied set of values.	Syntax: STDEV.S(number1, [number2],) Formula: STDEV.S(2,4,6,8)This will return 2, the standard deviation of the sample set.
STDEVA	STDEVA is an Excel function that returns the standard deviation of a population based on a sample of numeric values.	Syntax: STDEVA(number1, [number2],) Formula: STDEVA(2,4,6,8,10)This example returns 2.58198889747161, which is the standard deviation of the given sample.
STDEVPA	STDEVPA is an Excel function that calculates the standard deviation of a population based on a sample of numbers. It takes the following syntax:STDEVPA(num ber1, [number2], )Where number1, number2, etc. are the numeric values for	Syntax: STDEVPA(value1, [value2], ) Formula: STDEVPA(1, 2, 3, 4, 5, 6, 7, 8, 9, 10)This will return 2.87228132326901.

	which you want to calculate the standard deviation.	
STEYX	STEYX is a statistical function in Microsoft Excel that calculates the standard error of the predicted y-value for each x in the regression.	Syntax: STEYX(known_y's, known_x's) Formula: STEYX(A2:A6, B2:B6)
T.DIST	T.DIST is an Excel function that returns the probability associated with a Student's t- distribution.	Syntax: T.DIST(x,deg_freedom,cumulative) Formula: T.DIST(1.5,5,TRUE)This example returns the cumulative probability associated with a t- distribution with a value of 1.5 and 5 degrees of freedom.
T.DIST.2T	The T.DIST.2T function returns the probability associated with a Student's t- distribution. It can be used to determine the probability of a given range of values.	Syntax: T.DIST.2T(x,deg_freedom,cumulative) Formula: To calculate the probability of obtaining a value of 2 or less in a t- distribution with 20 degrees of freedom, the formula would be =T.DIST.2T(2,20,TRUE). This will return the probability of 0.97725.
T.DIST.RT	The T.DIST.RT function returns the right-tailed Student's t- distribution. The function is used to calculate probabilities for a given value of the t-distribution.	Syntax: T.DIST.RT(x,deg_freedom,cumulative) Formula: T.DIST.RT(2,5,TRUE)This example returns the cumulative probability of 2 for a t-distribution with 5 degrees of freedom.
T.INV	T.INV is an Excel function that returns the t-value of the Student's t-distribution, given the probability and the degrees of freedom.	Syntax: T.INV(probability, degrees_of_freedom) Formula: T.INV(0.95, 10)This example returns the t-value of 0.816496580927726, which is the t- value for a 95% confidence interval with 10 degrees of freedom.
T.INV.2T	The T.INV.2T function returns the two-tailed probability of the Student's t-distribution.	Syntax: T.INV.2T(probability,deg_freedom)

		<b>Formula:</b> T.INV.2T(0.05,10)This example returns the two-tailed probability of the Student's t- distribution with a probability of 0.05 and 10 degrees of freedom. The result is 2.228.
T.TEST	T.TEST is an Excel statistical function used to calculate the probability associated with the Student's t- test. The syntax for the T.TEST function is:T.TEST function is:T.TEST (array1, array2, tails, type)Where:• array1 – The first array or range of data.• array2 – The second array or range of data.• tails – The number of tails in the t- test. This can either be 1 (for one-tailed) or 2 (for two-tailed).• type – The type of t-test to be performed. This can either be 1 (for paired) or 2 (for two-sample equal variance).	Syntax: T.TEST(array1,array2,tails,type) Formula: T.TEST(A1:A10, B1:B10, 2, 1)This example would calculate the two-tailed probability associated with the paired t-test of the data in the range A1:A10 and B1:B10.
TREND	The TREND function is used to calculate linear	Syntax: TREND(known_y's, [known_x's], [new_x's], [const])
	trend line to a given set of data points and extend it to new data points.	<b>Formula:</b> TREND(A2:A5, B2:B5, B6, FALSE)This example would calculate the linear trend line for the data points in cells A2 to A5, using the corresponding x values in cells B2 to B5. It would then extend the trend line to the x value in cell B6. The FALSE argument specifies that the trend line should not include a constant.
	function is an Excel function used to	<b>Formula:</b> TRIMMEAN(array, percent)
	calculate the mean of a	0.2)This example would calculate the

	dataset after a certain percentage of the data points have been excluded from the calculation.	mean of the dataset in the range A2:A8, excluding the top and bottom 20% of the data points.
VAR.P	VAR.P is a statistical function in Excel that calculates the population variance of a given set of values.	<b>Syntax:</b> VAR.P(value1, [value2],) <b>Formula:</b> VAR.P(1,2,3,4,5)This example would return 2.5, which is the population variance of the set of values (1,2,3,4,5).
VAR.S	VAR.S is an Excel function that calculates the sample variance of a population based on a sample of numbers.	Syntax: VAR.S(number1, [number2],) Formula: VAR.S(2, 4, 6, 8, 10)This example would calculate the sample variance of the population of numbers (2, 4, 6, 8, 10) and return 8.
VARA	The VARA function in Excel returns the variance of an array or range of numbers.	<ul> <li>Syntax: VARA(number1, [number2],)</li> <li>Formula: VARA(5, 10, 15, 20)This example will return the variance of the numbers 5, 10, 15, and 20, which is 25.</li> </ul>
VARPA	VARPA is an Excel function that calculates the variance of an entire population based on a set of values.	Syntax: VARPA(value1, [value2],) Formula: VARPA(2,4,6,8,10)Result: 8
WEIBULL.DIST	WEIBULL.DIST is an Excel function used to calculate the probability that a value is less than or equal to a given value in a Weibull distribution.	Syntax: WEIBULL.DIST(x,alpha,beta,cumulati ve)x: The value for which you want to calculate the distribution.alpha: The shape parameter of the distribution.beta: The scale parameter of the distribution.cumulative: A logical value that determines the form of the function. If cumulative is TRUE, WEIBULL.DIST returns the cumulative distribution function; if FALSE, it returns the probability density function. <b>Formula:</b> WEIBULL.DIST(3,2,4,TRUE)This formula will return the cumulative probability that a value is less than or

		equal to 3 in a Weibull distribution with a shape parameter of 2 and a scale parameter of 4.
Z.TEST	The Z.TEST function in Excel is used to calculate the one-tailed or two-tailed probability-value of a z- test.	<b>Syntax:</b> Z.TEST(array, x, sigma) <b>Formula:</b> Z.TEST(A2:A10, 7, 2)This example would calculate the one-tailed or two-tailed probability-value of a z- test using the data in cells A2 through A10, with a mean of 7 and a standard deviation of 2.

## **Financial Functions**

**Become a Financial Whiz:** Excel empowers you to become a financial whiz with its dedicated Financial Functions. From calculating loan payments (PMT) to analyzing investment returns (IRR, NPV, XIRR), these functions provide the tools needed for financial modeling, cash flow forecasting, and informed investment decisions.

- Perform financial calculations like loan payments (PMT) and interest rates (IRR).
- Analyze investment returns (NPV, XIRR).
- Create financial models and cash flow forecasts.

Function	Descriptio n	Syntax and Formula
ACCRINT	The ACCRINT function in Microsoft Excel calculates the accrued interest for a security that pays periodic interest	<ul> <li>Syntax: ACCRINT(issue, first_interest, settlement, rate, par, frequency, [basis], [calc_method])</li> <li>Formula: ACCRINT("1/1/2020","2/1/2020","3/1/2020",0.05,1000,2,0,0)Th is example calculates the accrued interest for a security with an issue date of 1/1/2020, first interest date of 2/1/2020, settlement date of 3/1/2020, interest rate of 5%, par value of 1000, and a frequency of 2 (semi-annually). The basis and calculation method are both set to 0.</li> </ul>
ACCRINT M	The ACCRINT M function returns the amount of interest that has been	<ul> <li>Syntax: ACCRINTM(issue, first_interest, settlement, rate, par, frequency, [basis], [calc_method])</li> <li>Formula: ACCRINTM("1/1/2019", "1/1/2019", "1/15/2019", 0.06, 1000, 2, 0, 0)This example returns the amount of interest accrued on a bond with an issue date of 1/1/2019, first interest date of 1/1/2019, settlement date of 1/15/2019, annual interest rate</li> </ul>

	accrued on a security that pays periodic interest, such as a bond, between a start and end date.	of 6%, par value of \$1,000, and semi-annual frequency, using the US (NASD) 30/360 day count basis and the price basis method.
AMORDE GRC	The AMORDE GRC function returns the depreciatio n of an asset for a specified period using a depreciatio n coefficient from a table of depreciatio n coefficients	Syntax: AMORDEGRC(cost, date_purchased, first_period, salvage, period, [month]) Formula: AMORDEGRC(10000, DATE(2015,1,1), DATE(2015,4,1), 1000, 12, 4)This example returns the depreciation of an asset with a cost of 10,000 purchased on January 1, 2015, with a first period ending on April 1, 2015, a salvage value of 1,000, a period of 12, and a depreciation coefficient of 4.
AMORLI NC	The AMORLIN C function is used to calculate the depreciatio n of an asset for a specified period using the linear depreciatio n method.	Syntax: AMORLINC(cost, date_purchased, first_period, salvage, period, [rate]) Formula: To calculate the depreciation of an asset that cost \$10,000, was purchased on 1/1/2020, and has a salvage value of \$1,000 after 5 years, the following formula can be used:AMORLINC(10000, "1/1/2020", "1/1/2020", 1000, 5)

COUPDA	The	<b>Syntax:</b> COUPDAYBS(settlement, maturity, frequency, [basis])
YBS	COUPDA	
	YBS	Formula: COUPDAYBS("1/15/2020", "7/15/2020", 2, 0)This
	function	example returns the number of days from the beginning of the
	returns the	coupon period to the settlement date of January 15, 2020 with a
	number of	maturity date of July 15, 2020 and a frequency of 2 (semi-annual)
	days from	The basis is $0$ (US (NASD) $20/260$ ). The result is $01$
	the	The basis is 0 (05 (1(ASD) 50/500). The result is 91.
	haginning	
	of the	
	or the	
	coupon	
	period to	
	the	
	settlement	
CONPOL	date.	
COUPDA	The	Syntax: COUPDAYS(settlement, maturity, frequency, [basis])
YS	COUPDA	
	YS	<b>Formula:</b> COUPDAYS("9/15/2020", "9/15/2021", 2, 0)This
	function	example returns the number of days in the coupon period that
	returns the	contains the settlement date of $9/15/2020$ , with a maturity date of
	number of	9/15/2021, a frequency of 2 (semi-annual payments), and a basis
	days in the	of 0 (US (NASD) 30/360). The result is 180.
	coupon	
	period that	
	contains	
	the	
	settlement	
	date.	
COUPDA	The	<b>Syntax:</b> COUPDAYSNC(settlement, maturity, frequency, [basis])
YSNC	COUPDA	
	YSNC	Formula:
	function	COUPDAYSNC(DATE(2020,8,15),DATE(2022,2,15),2,0)This
	returns the	example returns the number of days in the coupon period that
	number of	contains the settlement date (15th August 2020) for a security
	days in the	with a periodic interest payment with a maturity date of 15th
	coupon	February 2022 and a frequency of 2 (semi-annual). The basis
	period that	argument is optional and is set to 0 in this example.
	contains	
	the	
	settlement	
	date for a	
	security	
	with a	
	periodic	
	interest	
	navment	
	payment.	

COUPNC D	The COUPNC D function returns the next coupon date after the settlement date for a security with a specified frequency of coupon payments.	Syntax: COUPNCD(settlement, maturity, frequency, [basis]) Formula: COUPNCD(DATE(2020,1,1), DATE(2022,1,1), 2, 0)This example returns the next coupon date after the settlement date of January 1, 2020 for a security with a maturity date of January 1, 2022 and a frequency of 2 (semiannual) payments. The basis is 0 (US (NASD) 30/360).
COUPNU M	COUPNU M is an Excel function that calculates the number of coupon payments between two dates. It is used to calculate the number of times an investor will receive a coupon payment between two dates	Syntax: COUPNUM(settlement, maturity, frequency, [basis]) Formula: COUPNUM(DATE(2020,1,1), DATE(2025,12,31), 2, 0)This example calculates the number of coupon payments between 1 January 2020 and 31 December 2025, assuming a frequency of 2 payments per year and a basis of 0 (US (NASD) 30/360). The result is 6.
COUPPC D	The COUPPCD function returns the next coupon payment date after the	<b>Syntax:</b> COUPPCD(settlement, maturity, frequency, [basis]) <b>Formula:</b> COUPPCD(DATE(2021,1,1), DATE(2021,6,30), 2, 0)This example returns 3/1/2021, which is the next coupon payment date after the settlement date of 1/1/2021, with a maturity date of 6/30/2021, a frequency of 2 (semi-annual), and a basis of 0 (US (NASD) 30/360).

	settlement date	
CUMIPM T	The CUMIPMT function in Excel calculates the cumulative interest paid on a loan between a start period and an end period.	Syntax: CUMIPMT(rate, nper, pv, start_period, end_period, type) Formula: To calculate the cumulative interest paid on a loan of \$10,000 at an annual interest rate of 5% over a period of 5 years, starting from the 2nd year, the formula would be:=CUMIPMT(0.05, 5, 10000, 2, 5, 0)The result would be \$1,250.
CUMPRIN C	The CUMPRIN C function in Excel is used to calculate the cumulative principal paid on a loan between a start period and an end period.	Syntax: CUMPRINC(rate, nper, pv, start_period, end_period, type) Formula: To calculate the cumulative principal paid on a loan with an interest rate of 5%, a total number of periods of 10, a present value of \$2000, a start period of 3 and an end period of 6, the formula would be:=CUMPRINC(5%, 10, 2000, 3, 6, 0)The result would be \$600, indicating that \$600 of the principal was paid between the 3rd and 6th periods.
DB	DB: The DB function is a financial function that returns the depreciatio n of an asset for a specified period using the fixed- declining	Syntax: DB(cost, salvage, life, period, [month]) Formula: DB(10000,1000,5,2)This example returns the depreciation of an asset with a cost of \$10,000, a salvage value of \$1,000, a life of 5 years, and a period of 2 years.

	balance	
	method.	
DDB	The DDB	Syntax: DDB(cost, salvage, life, period, [factor])
	function is	
	used to	<b>Formula:</b> DDB(10000,1000,5,2,2)This example calculates the
	calculate	depreciation of an asset for the second period, given a cost of
	the	\$10,000, a salvage value of \$1,000, a life of 5 periods, and a
	depreciatio	factor of 2.
	n of an	
	asset for a	
	specified	
	period	
	using the	
	double-	
	belonce	
	balance	
DISC	The DISC	Syntay: DISC(settlement maturity or redemotion [basic])
DISC	function	Syntax. Disc(settlement, maturity, pr, redemption, [basis])
	returns the	Formula
	discount	DISC(DATE(2020 6 15) DATE(2021 6 15) 0 1 100 1) This
	rate for a	example returns the discount rate for a security with a settlement
	security.	date of June 15, 2020, a maturity date of June 15, 2021, a price of
		0.1. and a redemption value of 100, using the US (NASD) $30/360$
		day count basis.
DOLLAR	DOLLAR	Syntax: DOLLARDE(fractional_dollar, fraction)
DE	DE is an	
	Excel	Formula: DOLLARDE(3/32, 32)Result: 0.09375
	function	
	that	
	converts a	
	dollar price	
	expressed	
	as a	
	fraction	
	into a	
	aonar price	
	as a	
	decimal	
DOLLAR	DOLLARE	Syntax: DOLLARFR(number decimals)
FD		
	R is an	
T K	R is an Excel	Formula: DOLLARFR(123.45,2)Result: 123.45 €
FK	R is an Excel function	<b>Formula:</b> DOLLARFR(123.45,2)Result: 123,45 €
FR	R is an Excel function that	<b>Formula:</b> DOLLARFR(123.45,2)Result: 123,45 €

	number to	
	text in a	
	currency	
	format.	
DURATIO	The	<b>Syntax:</b> DURATION(settlement, maturity, frequency, [basis])
Ν	DURATIO	
	N function	Formula:
	in Excel	DURATION(DATE(2020.1.1), DATE(2021.1.1), 2.0) This formula
	calculates	will return the number of days between January 1st, 2020 and
	the number	January 1st, 2021, assuming a semi-annual frequency and a US
	of days	(NASD) 30/360 day count basis. The result will be 365.
	between	(
	two given	
	dates.	
EFFECT	The	Syntax: EFFECT(nominal rate, npery)
	EFFECT	
	function is	<b>Formula:</b> EFFECT(0.05, 12)This example would return 0.0514,
	an Excel	which is the effective annual interest rate for a nominal interest
	function	rate of 5% and 12 compounding periods per year.
	that	
	calculates	
	the	
	effective	
	annual	
	interest	
	rate. It	
	takes two	
	arguments,	
	the	
	nominal	
	interest rate	
	and the	
	number of	
	compoundi	
	ng periods	
	per year.	
FV	FV: The	Syntax: FV(rate, nper, pmt)
	FV	
	function in	<b>Formula:</b> FV(0.06, 10, -100)This example returns the future
	Excel is	value of an investment of \$100 for 10 periods at an interest rate of
	used to	6%.
	calculate	
	the future	
	value of an	
	investment.	
	It takes	

	three arguments: rate, nper,	
	and pmt.	
<b>FVSCHED</b> <b>ULE</b>	FVSCHED ULE is an Excel function that returns the future value of an investment based on a series of periodic payments and a constant interest	Syntax: FVSCHEDULE(principal, schedule) Formula: FVSCHEDULE(1000, {0.1, 0.1, 0.1, 0.1})This example returns the future value of an investment of \$1000 with four periodic payments of 10% each. The result is \$1,464.
INTRATE	INTRATE calculates the interest rate for a fully invested security.	<ul> <li>Syntax: INTRATE(settlement, maturity, investment, redemption, [basis])</li> <li>Formula: INTRATE(DATE(2020, 1, 1), DATE(2021, 1, 1), 1000, 1100, 0)This example calculates the interest rate for a security that is invested on January 1, 2020, matures on January 1, 2021, and has an investment of \$1000 and a redemption of \$1100. The basis is set to 0.</li> </ul>
IPMT	IPMT: The IPMT function in Excel is used to calculate the interest payment for a given period of an investment or loan.	<ul> <li>Syntax: IPMT(rate, period, number_of_periods, present_value, [future_value], [type])</li> <li>Formula: To calculate the interest payment for the 3rd period of a loan with a rate of 5%, a present value of \$1000 and a total of 10 periods, the formula would be:=IPMT(5%,3,10,1000)This would return a result of -\$20.83, indicating that the interest payment for the 3rd period is \$20.83.</li> </ul>
IRR	The IRR function in Excel is a financial function	<b>Syntax:</b> IRR(values, [guess]) <b>Formula:</b> IRR(A2:A7,0.1)This example uses the IRR function to calculate the internal rate of return for a series of cash flows in cells A2 to A7, with an initial guess of 0.1.

	that returns the internal rate of return for a series of cash flows. The internal rate of return is the discount rate that sets the net present value of the cash flows to zero.	
ISPMT	The	<b>Syntax:</b> ISPMT(rate, period, number_of_periods, present_value)
	function	Formula: ISPMT(0.08, 3, 12, 10000)This example returns a
	calculates	result of -66.67, which is the interest paid during the 3rd period of
	naid during	an investment with a rate of 8%, 12 periods and a present value of 10 000
	a specific	10,000.
	period of	
	an investment	
MDURAT	The	Syntax: MDURATION(settlement, maturity, coupon, vld,
ION	MDURATI	frequency, [basis])
	ON	
	function returns the	Formula: MDURATION(DATE(2018 1 1) DATE(2022 1 1) 0.06 0.05 2 0)
	Macauley	This example returns the Macauley duration of a security with a
	duration of	settlement date of January 1, 2018, a maturity date of January 1,
	a security	2022, a coupon rate of 6%, an annual yield of 5%, and a
	with an assumed	day count basis
	par value	
	of \$100.	
MIRR	MIRR: The	Syntax: MIRR(values, finance_rate, reinvest_rate)
	function is	Formula: MIRR(B2·B6, 10%, 20%)In this example, the MIRR
	an Excel	function returns the modified internal rate of return for the cash
	financial	flows in the range B2:B6, with a 10% finance rate and a 20%
	function	reinvestment rate.

	that returns	
	the	
	modified	
	internal	
	rate of	
	return for a	
	series of	
	periodic	
	cash flows	
NOMINA	NOMINAI	Syntax: NOMINAL (effect rate nperv)
I.	· This	Syntax. WOMMANL(encer_rate, npery)
	function is	Formula: NOMINAL (0.1.4) Result: 0.0043
	used to	rormula. NOWINAL(0.1, 4) Kesult. 0.0745
	calculate	
	the	
	nominal	
	interest rote	
	given the	
	offootivo	
	rate and the	
	number of	
	number of	
	compound	
	10 0 10 0 11 0 0 0	
	ng periods	
NDED	ng periods per year.	Sumform NDED (note much new [ful [func])
NPER	ng periods per year. The NPER	Syntax: NPER(rate, pmt, pv, [fv], [type])
NPER	ng periods per year. The NPER function	<b>Syntax:</b> NPER(rate, pmt, pv, [fv], [type])
NPER	ng periods per year. The NPER function returns the number of	<b>Syntax:</b> NPER(rate, pmt, pv, [fv], [type]) <b>Formula:</b> To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the
NPER	ng periods per year. The NPER function returns the number of periods for	<b>Syntax:</b> NPER(rate, pmt, pv, [fv], [type]) <b>Formula:</b> To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPEP(0.05 - 500 - 10000)The result is 18
NPER	ng periods per year. The NPER function returns the number of periods for an	Syntax: NPER(rate, pmt, pv, [fv], [type]) Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.
NPER	ng periods per year. The NPER function returns the number of periods for an investment	<b>Syntax:</b> NPER(rate, pmt, pv, [fv], [type]) <b>Formula:</b> To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on	<b>Syntax:</b> NPER(rate, pmt, pv, [fv], [type]) <b>Formula:</b> To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic	<b>Syntax:</b> NPER(rate, pmt, pv, [fv], [type]) <b>Formula:</b> To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant	Syntax: NPER(rate, pmt, pv, [fv], [type]) Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant payments	Syntax: NPER(rate, pmt, pv, [fv], [type]) Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant payments and a	Syntax: NPER(rate, pmt, pv, [fv], [type]) Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant payments and a constant	Syntax: NPER(rate, pmt, pv, [fv], [type]) Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant payments and a constant interest	Syntax: NPER(rate, pmt, pv, [fv], [type]) Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant payments and a constant interest rate	Syntax: NPER(rate, pmt, pv, [fv], [type]) Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant payments and a constant interest rate. NPV is a	Syntax: NPER(rate, pmt, pv, [fv], [type]) Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18. Syntax: NPV(rate, value1, value2,)
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant payments and a constant interest rate. NPV is a financial	Syntax: NPER(rate, pmt, pv, [fv], [type]) Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant payments and a constant interest rate. NPV is a financial function in	Syntax: NPER(rate, pmt, pv, [fv], [type]) Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18. Syntax: NPV(rate, value1, value2,) Formula: NPV(0.1 -1000 500 500 500)This example would
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant payments and a constant interest rate. NPV is a financial function in Excel used	Syntax: NPER(rate, pmt, pv, [fv], [type]) Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18. Syntax: NPV(rate, value1, value2,) Formula: NPV(0.1, -1000, 500, 500, 500)This example would calculate the net present value of an investment with an initial
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant payments and a constant interest rate. NPV is a financial function in Excel used to calculate	<ul> <li>Syntax: NPER(rate, pmt, pv, [fv], [type])</li> <li>Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.</li> <li>Syntax: NPV(rate, value1, value2,)</li> <li>Formula: NPV(0.1, -1000, 500, 500, 500)This example would calculate the net present value of an investment with an initial investment of -1000, and three subsequent payments of 500 each</li> </ul>
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant payments and a constant interest rate. NPV is a financial function in Excel used to calculate the net	Syntax: NPER(rate, pmt, pv, [fv], [type]) Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18. Syntax: NPV(rate, value1, value2,) Formula: NPV(0.1, -1000, 500, 500, 500)This example would calculate the net present value of an investment with an initial investment of -1000, and three subsequent payments of 500 each at a rate of 0.1
NPER	ng periods per year. The NPER function returns the number of periods for an investment based on periodic, constant payments and a constant interest rate. NPV is a financial function in Excel used to calculate the net	<ul> <li>Syntax: NPER(rate, pmt, pv, [fv], [type])</li> <li>Formula: To calculate the number of periods for an investment of \$10,000 with a payment of \$500 and an interest rate of 5%, the formula would be:=NPER(0.05, -500, 10000)The result is 18.</li> <li>Syntax: NPV(rate, value1, value2,)</li> <li>Formula: NPV(0.1, -1000, 500, 500, 500)This example would calculate the net present value of an investment with an initial investment of -1000, and three subsequent payments of 500 each at a rate of 0.1.</li> </ul>

ODDFPRI CEODDFPRI CE is anSyntax: ODDFPRICE(settlement, maturity, issue, first_coupon, rate, yld, redemption, frequency, [basis])
It takes into       It takes into         account the       initial         investment,       investment,         the rate of       return, and         the number       of periods         of periods       in the         investment.       Syntax: ODDFPRICE(settlement, maturity, issue, first_coupon,         CE       is an         Excel       Excel
account the       account the         initial       investment,         investment,       the rate of         return, and       return, and         the number       of periods         of periods       in the         investment.       Syntax: ODDFPRICE(settlement, maturity, issue, first_coupon, rate, yld, redemption, frequency, [basis])
initialinitialinvestment,investment,the rate ofreturn, andreturn, andinthe numberof periodsin thein theintertertertertertertertertertertertertert
investment,       investment,         the rate of       return, and         return, and       the number         of periods       of periods         in the       investment.         ODDFPRI       ODDFPRI         CE       Syntax: ODDFPRICE(settlement, maturity, issue, first_coupon, rate, yld, redemption, frequency, [basis])
the rate of       the rate of         return, and       the number         of periods       of periods         in the       investment.         ODDFPRI       ODDFPRI         CE       Syntax: ODDFPRICE(settlement, maturity, issue, first_coupon, rate, yld, redemption, frequency, [basis])         Excel       Excel
return, and the number of periods in the investment.return, and the number of periods in the investment.ODDFPRI CEODDFPRI CE is an ExcelSyntax: ODDFPRICE(settlement, maturity, issue, first_coupon, rate, yld, redemption, frequency, [basis])
the number of periods in the investment.the number of periods in the investment.ODDFPRI CEODDFPRI CE is an ExcelSyntax: ODDFPRICE(settlement, maturity, issue, first_coupon, rate, yld, redemption, frequency, [basis])
of periods       of periods         in the       investment.         ODDFPRI       ODDFPRI         CE       Syntax: ODDFPRICE(settlement, maturity, issue, first_coupon, rate, yld, redemption, frequency, [basis])         Excel       Excel
in the       investment.         ODDFPRI       ODDFPRI         CE       Syntax: ODDFPRICE(settlement, maturity, issue, first_coupon, rate, yld, redemption, frequency, [basis])         Excel       Excel
investment.ODDFPRI CEODDFPRI CE is an ExcelSyntax: ODDFPRICE(settlement, maturity, issue, first_coupon, rate, yld, redemption, frequency, [basis])
ODDFPRI CEODDFPRI CE is an ExcelSyntax: ODDFPRICE(settlement, maturity, issue, first_coupon, rate, yld, redemption, frequency, [basis])
CE CE is an rate, yld, redemption, frequency, [basis])
Excel
function <b>Formula</b> :
that ODDFPRICE(DATE(2021.1.1),DATE(2021.7.1),DATE(2020.7.
calculates ).0.06.0.06.0.06.100.2.0) This example calculates the price per
the price \$100 face value of a security with a settlement date of January 1.
per \$100 2021, a maturity date of July 1, 2021, an issue date of July 1,
face value 2020, a first coupon of 0.06, a rate of 0.06, a vield of 0.06, a
of a redemption value of 100 and a frequency of 2 (semi-annual). The
security basis is set to 0
with an odd
first period
ODDEVIE The Syntax: ODDEVIEL D(settlement maturity issue first coupon
LD ODDEFYIE rate pr redemption frequency [basis])
LD
function <b>Formula</b> :
returns the ODDFYIELD(DATE( $2020.1.1$ ) DATE( $2023.1.1$ ) DATE( $2020.1.1$ )
odd vield $1$ , 0.06, 0.05, 100, 100, 2, 1) This example returns the odd vield of a
of a security with a settlement date of January 1, 2020, a maturity date
security of January 1, 2023, an issue date of January 1, 2020, a first
with an odd coupon of 0.06 a rate of 0.05 a price of 100 a redemption value
first period of 100 and a frequency of 2 (semi-annually) The optional basis
parameter is set to 1 (US (NASD) 30/360).
<b>ODDLPRI ODDLPRI Syntax:</b> ODDLPRICE(settlement, maturity, rate, yld, redemptior
CE CE is an frequency. [basis])
Excel
function <b>Formula</b> :
that returns ODDLPRICE("1/1/2020"."1/1/2021".0.05.0.06.100.2.1)This
the price example returns the price per unit of an odd lot with a settlement
per unit of date of $1/1/2020$ , a maturity date of $1/1/2021$ , a rate of 0.05, a
an odd lot, vield of 0.06, a redemption value of 100, and a frequency of 2
which is an (semi-annual), using the US (NASD) 30/360 day count basis
order for a

	quantity of	
	stock that	
	is less than	
	the	
	standard	
	trading	
	unit	
ODDI VIE	The	Suntay: ODDI VIEL D(sottlement maturity issue first coupon
		syntax. ODDL i iEED(settlement, maturity, issue, inst_coupon,
LD		rate, pr, redemption, frequency, [basis])
	LD formation in	
	function is	<b>Formula:</b> ODDLYIELD(DATE(2021,1,1), DATE(2024,1,1),
	used to	DATE(2020,7,1), DATE(2021,7,1), 0.05, 100, 100, 2, 0)This
	calculate	example calculates the yield of a security with a settlement date of
	the yield of	1/1/2021, maturity date of $1/1/2024$ , issue date of $7/1/2020$ , first
	a security	coupon date of 7/1/2021, rate of 0.05, price of 100, redemption of
	that pays	100, frequency of 2, and basis of 0.
	odd interest	
	payments.	
PDURATI	PDURATI	<b>Syntax:</b> PDURATION(present_value, payment, future_value)
ON	ON is a	
	financial	<b>Formula:</b> Suppose you have a loan of \$10,000 with a periodic
	function in	payment of \$200 and a future value of \$0. The number of periods
	Excel that	required to pay off the loan is calculated by using the
	calculates	PDUR ATION function as follows:-PDUR ATION(10000, 200
	the number	0)The result is 50 meaning it will take 50 periods (months, years
	of poriods	o) The result is 50, meaning it will take 50 periods (months, years,
	or periods	etc.) to pay off the foan.
	required to	
	pay on a	
	loan or	
	make an	
	investment	
	given the	
	present	
	value,	
	periodic	
	payment,	
	and future	
	value.	
PMT	PMT is an	Syntax: PMT(rate, nper, pv, [fv], [tvpe])
	Excel	
	function	Formula: PMT(0.06/12, 60, 1000, 0, 0)This example calculates
	used to	the monthly payment for a loan of \$1000 at 6% interest for 60
	calculate	months. The navment is \$19.55
	the	$\frac{1}{10000000000000000000000000000000000$
	neriodic	
	payment	

	for a loan.	
	The syntax	
	is	
	PMT(rate,	
	nper, pv,	
	[fv],	
	[type]).Rat	
	e is the	
	interest rate	
	per	
	period.Npe	
	r is the	
	total	
	number of	
	payments	
	for the	
	loan.Pv is	
	the present	
	value (or	
	principal)	
	of the	
	loan.Fv is	
	the future	
	value (or	
	balance) of	
	the loan	
	after the	
	last	
	payment.T	
	ype is the	
	number 0	
	or 1 and	
	indicates	
	when	
	payments	
	are due.	
PPMT	The PPMT	<b>Syntax:</b> PPMT(rate, period, number_of_periods, present_value,
	function in	future_value, type)
	Excel	
	calculates	Formula: To calculate the principal payment for the 3rd period of
	the	a loan with a 6% annual interest rate, a present value of \$10,000,
	principal	and a total of 5 periods, the formula would
	payment	be:=PPMT(6%,3,5,10000,0,0)The result would be -\$2,037.50,
	for a given	which is the principal payment for the 3rd period.
	period for	
	an	
	investment based on a constant periodic payment and a constant interest rate.	
---------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
PRICE	The PRICE function is used to calculate the price per \$100 face value of a security that pays periodic interest.	<ul> <li>Syntax: PRICE(settlement, maturity, rate, yld, redemption, frequency, [basis])</li> <li>Formula: PRICE(DATE(2020,1,1), DATE(2022,1,1), 0.05, 0.06, 100, 2, 0)This example returns the price per \$100 face value of a security that pays semiannual interest at a rate of 5%, with a yield of 6%, and a redemption value of \$100. The settlement date is January 1, 2020, and the maturity date is January 1, 2022.</li> </ul>
PRICEDIS C	PRICEDIS C is an Excel function that calculates the price of a discounted security. It takes three arguments: the settlement date, the maturity date, and the discount rate.	Syntax: PRICEDISC(settlement, maturity, discount) Formula: PRICEDISC("2/2/2020", "2/2/2021", 0.05)This example would calculate the price of a security with a settlement date of 2/2/2020, a maturity date of 2/2/2021, and a discount rate of 0.05.
PRICEMA T	PRICEMA T is an Excel function that	<b>Syntax:</b> PRICEMAT(settlement, maturity, rate) <b>Formula:</b> PRICEMAT(A1, A2, A3)where A1 = settlement date, A2 = maturity date, A3 = rate

	calculates	
	the price of	
	a security	
	based on its	
	yield. It	
	takes three	
	arguments:	
	settlement,	
	maturity,	
	and rate.	
PV	The PV	Syntax: PV(rate, nper, pmt, [fv], [type])
	function	
	calculates	<b>Formula:</b> To calculate the present value of an investment that
	the present	will pay \$1000 at the end of each year for 10 years, with an
	value of an	interest rate of 5%, the formula would be:=PV(5%, 10, 1000)The
	investment,	result would be: -\$7,637.45
	which is	
	the total	
	amount	
	that a series	
	of future	
	payments	
	is worth	
	now.	
RATE	The RATE	Syntax: RATE(nper, pmt, pv, [fv], [type], [guess])
	function is	
	used to	Formula: To calculate the interest rate per period for a loan of
	useu io	
	calculate	\$2,000 to be paid back in 5 years with a payment of \$400 per
	calculate the interest	\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result
	calculate the interest rate per	\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.
	calculate the interest rate per period of	\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.
	calculate the interest rate per period of an annuity.	\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.
RECEIVE	calculate the interest rate per period of an annuity. The	<ul> <li>\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.</li> <li>Syntax: RECEIVED(settlement, maturity, investment, discount,</li> </ul>
RECEIVE D	calculate the interest rate per period of an annuity. The RECEIVE	<ul> <li>\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.</li> <li>Syntax: RECEIVED(settlement, maturity, investment, discount, [basis])</li> </ul>
RECEIVE D	calculate the interest rate per period of an annuity. The RECEIVE D function	<ul> <li>\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.</li> <li>Syntax: RECEIVED(settlement, maturity, investment, discount, [basis])</li> </ul>
RECEIVE D	calculate the interest rate per period of an annuity. The RECEIVE D function is a	<ul> <li>\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.</li> <li>Syntax: RECEIVED(settlement, maturity, investment, discount, [basis])</li> <li>Formula: RECEIVED(A2,A3,A4,A5,A6)In this example, A2 is</li> </ul>
RECEIVE D	calculate the interest rate per period of an annuity. The RECEIVE D function is a financial	<ul> <li>\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.</li> <li>Syntax: RECEIVED(settlement, maturity, investment, discount, [basis])</li> <li>Formula: RECEIVED(A2,A3,A4,A5,A6)In this example, A2 is the settlement date, A3 is the maturity date, A4 is the investment</li> </ul>
RECEIVE D	calculate the interest rate per period of an annuity. The RECEIVE D function is a financial function in	<ul> <li>\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.</li> <li><b>Syntax:</b> RECEIVED(settlement, maturity, investment, discount, [basis])</li> <li><b>Formula:</b> RECEIVED(A2,A3,A4,A5,A6)In this example, A2 is the settlement date, A3 is the maturity date, A4 is the investment amount, A5 is the discount rate, and A6 is the basis (optional).</li> </ul>
RECEIVE D	calculate the interest rate per period of an annuity. The RECEIVE D function is a financial function in Microsoft	<ul> <li>\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.</li> <li>Syntax: RECEIVED(settlement, maturity, investment, discount, [basis])</li> <li>Formula: RECEIVED(A2,A3,A4,A5,A6)In this example, A2 is the settlement date, A3 is the maturity date, A4 is the investment amount, A5 is the discount rate, and A6 is the basis (optional).</li> </ul>
RECEIVE D	calculate the interest rate per period of an annuity. The RECEIVE D function is a financial function in Microsoft Excel that	<ul> <li>\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.</li> <li><b>Syntax:</b> RECEIVED(settlement, maturity, investment, discount, [basis])</li> <li><b>Formula:</b> RECEIVED(A2,A3,A4,A5,A6)In this example, A2 is the settlement date, A3 is the maturity date, A4 is the investment amount, A5 is the discount rate, and A6 is the basis (optional).</li> </ul>
RECEIVE D	calculate the interest rate per period of an annuity. The RECEIVE D function is a financial function in Microsoft Excel that returns the	<ul> <li>\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.</li> <li><b>Syntax:</b> RECEIVED(settlement, maturity, investment, discount, [basis])</li> <li><b>Formula:</b> RECEIVED(A2,A3,A4,A5,A6)In this example, A2 is the settlement date, A3 is the maturity date, A4 is the investment amount, A5 is the discount rate, and A6 is the basis (optional).</li> </ul>
RECEIVE D	calculate the interest rate per period of an annuity. The RECEIVE D function is a financial function in Microsoft Excel that returns the amount	<ul> <li>\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.</li> <li>Syntax: RECEIVED(settlement, maturity, investment, discount, [basis])</li> <li>Formula: RECEIVED(A2,A3,A4,A5,A6)In this example, A2 is the settlement date, A3 is the maturity date, A4 is the investment amount, A5 is the discount rate, and A6 is the basis (optional).</li> </ul>
RECEIVE D	calculate the interest rate per period of an annuity. The RECEIVE D function is a financial function in Microsoft Excel that returns the amount received at	<ul> <li>\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.</li> <li><b>Syntax:</b> RECEIVED(settlement, maturity, investment, discount, [basis])</li> <li><b>Formula:</b> RECEIVED(A2,A3,A4,A5,A6)In this example, A2 is the settlement date, A3 is the maturity date, A4 is the investment amount, A5 is the discount rate, and A6 is the basis (optional).</li> </ul>
RECEIVE D	calculate the interest rate per period of an annuity. The RECEIVE D function is a financial function in Microsoft Excel that returns the amount received at maturity	<ul> <li>\$2,000 to be paid back in 5 years with a payment of \$400 per period, the formula would be:=RATE(5, -400, 2000)The result would be 0.05, indicating a 5% interest rate per period.</li> <li>Syntax: RECEIVED(settlement, maturity, investment, discount, [basis])</li> <li>Formula: RECEIVED(A2,A3,A4,A5,A6)In this example, A2 is the settlement date, A3 is the maturity date, A4 is the investment amount, A5 is the discount rate, and A6 is the basis (optional).</li> </ul>

	invested security.	
RRI	RRI: The RRI function is used to calculate the rate of return on an investment over a period of time.	<ul> <li>Syntax: RRI(nper, pv, fv)nper: The total number of periods over which the investment is made.pv: The present value of the investment.fv: The future value of the investment.</li> <li>Formula: RRI(5, 1000, 2000)This example calculates the rate of return on an investment of \$1000 that will be worth \$2000 after 5 periods. The result is 0.1487, or 14.87%.</li> </ul>
SLN	SLN: The SLN function is used to calculate the straight- line depreciatio n of an asset for a single period	Syntax: SLN(cost, salvage, life) Formula: SLN(1000,200,5)This example would calculate the straight-line depreciation of an asset with a cost of 1000, a salvage value of 200, and a life of 5 years. The result would be 160.
SYD	The SYD function returns the sum-of- years' digits depreciatio n of an asset for a specified period.	Syntax: SYD(cost, salvage, life, period) Formula: SYD(10000, 1000, 5, 3)This example returns the sum- of-years' digits depreciation of an asset with a cost of \$10,000, a salvage value of \$1,000, and a useful life of 5 years for the 3rd period. The result is \$2,400.
TBILLEQ	The TBILLEQ function is used to calculate the bond- equivalent yield of a	<b>Syntax:</b> TBILLEQ(settlement, maturity, discount) <b>Formula:</b> TBILLEQ(DATE(2020,1,1), DATE(2020,2,1), 0.05)This example would calculate the bond-equivalent yield of a treasury bill with a settlement date of January 1, 2020, a maturity date of February 1, 2020, and a discount rate of 0.05.

	treasury	
	bill.	
TBILLPRI	TBILLPRI	Syntax: TBILLPRICE(settlement, maturity, discount)
CE	CE is an	
	Excel	Formula: $IBILLPRICE(3/1/2020, 6/1/2020, 0.05)$ The result of
	function	this example would be 99.876.
	unal	
	the price of	
	a Transury	
	hill based	
	on the rate	
	issue date.	
	and	
	maturity	
	date.	
TBILLYIE	The	Syntax: TBILLYIELD(discount, settlement, maturity)
LD	TBILLYIE	
	LD	<b>Formula:</b> TBILLYIELD(0.05, "1/1/2020", "4/1/2020") returns
	function	0.0541
	returns the	
	yield for a	
	Treasury	
	bill, given	
	the	
	discount	
	rate,	
	date and	
	maturity	
	date.	
VDB	VDB	Syntax: VDB(cost, salvage, life, start_period, end_period,
	stands for	[factor], [no_switch])
	Variable	
	Declining	Formula: VDB(10000, 1000, 5, 1, 3, 2, FALSE)This example
	Balance. It	will calculate the depreciation of an asset with a cost of 10,000, a
	is a	salvage value of 1,000 and a life of 5 years for the first 3 periods,
	financial	using a double declining balance factor and no switch.
	function	
	that is used	
	to calculate	
	deprecietie	
	n of an	
	asset over a	
	asset over a	

	period of	
XIRR	XIRR is an	Syntax: XIRR (values, dates, [guess])
	Excel	
	function	<b>Formula:</b> XIRR (A1:A4, B1:B4, 0.1)A1:A4 = -1000, 500, 500,
	that	500B1:B4 = 01/01/2020, 02/01/2020, 03/01/2020, 04/01/2020In
	the internal	this example, XIRR will return the internal rate of return for the series of cash flows in $A_1:A_4$ that occur at the dates in $B_1:B_4$
	rate of	with an initial guess of 0.1
	return for a	
	series of	
	cash flows	
	that occur	
	at irregular	
	intervals. It	
	calculate	
	the rate of	
	return for	
	investment	
	s that don't	
	have a	
	schedule of	
	payments.	
	such as	
	investment	
	s in stocks	
	or mutual	
VNDV/	funds.	Suntavi VNDV (rota valuas datas)
	function	Syntax. AIVE V (late, values, dates)
	calculates	Formula: XNPV(0.1, {-1000, 400, 400, 400}, {DATE(2020,1,1),
	the net	DATE(2020,2,1), DATE(2020,3,1), DATE(2020,4,1)})This
	present	example would return a net present value of \$912.11.
	value of an	
	investment	
	discount	
	rate and a	
	series of	
	cash flows.	
YIELD	YIELD:	Syntax: YIELD(settlement, maturity, rate, pr, redemption,
	The VIELD	frequency, [basis])
	function	
YIELD	Investment based on a discount rate and a series of cash flows. YIELD: The YIELD function	<b>Syntax:</b> YIELD(settlement, maturity, rate, pr, redemption, frequency, [basis])

	returns the	
	yield on a	Formula:
	security	YIELD(DATE(2020,5,15),DATE(2021,5,15),5%,100,100,2,1)Thi
	that pays	s example would return the yield of a security that has a
	periodic	settlement date of May 15th, 2020, a maturity date of May 15th,
	interest.	2021, a rate of 5%, a price of 100, a redemption value of 100, a
		frequency of 2 (semi-annual), and a basis of 1 (US (NASD)
		30/360).
YIELDDIS	YIELDDIS	Syntax: YIELDDISC(settlement, maturity, price, redemption,
С	C is an	basis)
	Excel	
	function	Formula: YIELDDISC("1/1/2020", "1/1/2021", 98, 100, 0)This
	used to	example would calculate the yield on a security with a settlement
	calculate	date of $1/1/2020$ , a maturity date of $1/1/2021$ , a price of 98 per
	the vield on	\$100 face value, a redemption value of 100 per \$100 face value
	a	and a day count basis of 0.
	discounted	
	security. It	
	takes the	
	following	
	arguments.	
	•	
	Settlement:	
	The	
	security's	
	settlement	
	date •	
	Maturity.	
	The	
	security's	
	maturity	
	date.•	
	Price: The	
	security's	
	price per	
	\$100 face	
	value.•	
	Redemptio	
	n: The	
	security's	
	redemption	
	value per	
	\$100 face	
	value.•	
	Basis: The	
	type of day	

	count basis	
	to use.	
YIELDMA	YIELDMA	Syntax: YIELDMAT(settlement, maturity, issue, rate, pr,
Т	T is an	redemption, frequency, [basis])
	Excel	
	function	Formula: YIELDMAT(A2, B2, C2, D2, E2, F2, G2, H2)In this
	used to	example, A2 is the settlement date, B2 is the maturity date, C2 is
	calculate	the issue date, D2 is the rate, E2 is the price, F2 is the redemption
	the yield of	value, G2 is the frequency, and H2 is the basis.
	a security	
	that pays	
	periodic	
	interest. It	
	is used to	
	calculate	
	the yield of	
	a bond or	
	other	
	security on	
	a given	
	date.	

## **Compatibility Functions**

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**Working with Older Excel Versions:** Compatibility functions act as bridges between spreadsheets created in different Excel versions. These functions offer alternative names for functions that have been renamed in newer versions. Using them guarantees your formulas work correctly even when opened in older Excel, ensuring seamless collaboration and data exchange.

- Compatibility functions are provided for functions that have been renamed in newer versions of Excel.
- Using these functions ensures your spreadsheets work correctly if opened in older Excel versions.
- If backward compatibility is not essential, it's recommended to use the newer functions for improved accuracy and clarity.

Function	Description	Syntax and Formula
BETADIST	The BETADIST function in	<b>Syntax:</b> BETADIST(x,alpha,beta,A,B)x: A
	Excel returns the cumulative	value at which the probability density
	beta probability density	function is to be evaluated.alpha: The alpha
	function or the probability	parameter of the beta distribution.beta: The
	that a variable, which	beta parameter of the beta
	follows a beta distribution,	distribution.A: Optional. The lower bound of

	is less than or equal to a specified value.	the beta distribution.B: Optional. The upper bound of the beta distribution. <b>Formula:</b> BETADIST(2,2,3,0,4)This example returns the probability that a variable, which follows a beta distribution with alpha = 2 and beta = 3, is less than or equal to 2. The lower bound of the beta distribution is 0 and the upper bound is 4.
BETAINV	The BETAINV function returns the inverse of the cumulative beta probability density function (BETA.DIST).	<ul> <li>Syntax: BETAINV(probability, alpha, beta, [A], [B])</li> <li>Formula: BETAINV(0.5,2,4,0,1)This example returns 0.5, which is the inverse of the cumulative beta probability density function with a probability of 0.5, alpha of 2, beta of 4, and lower bound of 0 and upper bound of 1.</li> </ul>
BINOMDIST	The BINOMDIST function in Excel calculates the individual term binomial distribution probability.	Syntax: BINOMDIST(number_s,trials,probability_s, cumulative) Formula: To calculate the probability of getting 3 successes in 5 trials, with a probability of success of 0.4, the formula would be:BINOMDIST(3,5,0.4,FALSE)The result would be 0.3456.
CHIDIST	CHIDIST is an Excel function that returns the one-tailed probability of the chi-squared distribution. The syntax for CHIDIST is:CHIDIST(x,deg_freedom )Where x is the value at which to evaluate the distribution, and deg_freedom is the number of degrees of freedom.	Syntax: CHIDIST(x,deg_freedom) Formula: To find the probability of a chi- squared value of 10 with 5 degrees of freedom, the formula would be:=CHIDIST(10, 5)The result would be 0.0752352461465122.
CHIINV	The Excel CHIINV function returns the inverse of the left-tailed probability of the chi-squared distribution.	<b>Syntax:</b> CHIINV(probability,deg_freedom) <b>Formula:</b> To calculate the inverse of the left-tailed probability of the chi-squared distribution with a probability of 0.95 and degrees of freedom of 5, use the following <b>Formula:</b> CHIINV(0.95,5)The result is 11.070.

CHITEST	The CHITEST function in	Syntax: CHITEST(actual_range,
	Microsoft Excel is used to	expected_range)
	calculate the test for	
	independence of two ranges	Formula: CHITEST(A2:A7, B2:B7)
	of categorical data.	
CONFIDENC	CONFIDENCE is an Excel	Syntax:
E	function that calculates the	CONFIDENCE(alpha,standard_dev,size)
	confidence interval for a	
	population mean, using a	Formula: CONFIDENCE(0.05,2,100)This
	normal distribution. It takes	example would calculate the 95% confidence
	three arguments: alpha,	interval for a population with a standard
	standard_dev, and	deviation of 2 and a sample size of 100.
	size.Alpha is the	-
	significance level used to	
	compute the confidence	
	level. It is a number	
	between 0 and	
	1.Standard_dev is the	
	standard deviation for the	
	population.Size is the	
	sample size.	
COVAR	COVAR is an Excel	Syntax: COVAR(array1, array2)
	function that calculates the	
	covariance between two sets	Formula: COVAR(A1:A5, B1:B5)This
	of data. It is used to measure	example will calculate the covariance
	the linear relationship	between the data in the range A1:A5 and the
	between two variables.	data in the range B1:B5.
CRITBINOM	The CRITBINOM function	<b>Syntax:</b> CRITBINOM(trials, probability_s,
	returns the smallest value	alpha)
	for which the cumulative	
	binomial distribution is	<b>Formula:</b> CRITBINOM(10, 0.5, 0.95)This
	greater than or equal to a	example would return the smallest value for
	criterion value.	which the cumulative binomial distribution
		with 10 trials and a probability of success of
		0.5 is greater than or equal to 0.95. The result
EXPONDIST	The EXPONDIST function	Syntax: EXPONDIST(x,lambda,cumulative)
	distribution for a specified	Earneylas EVDONDIST(2,2 TDUE)This
	distribution for a specified	formula: EXPONDIST(2,5,1KUE)This
	value, lallibua, and	distribution for $x=2$ and lambda=2
EDIST	The EDIST function in	x = 2 and $x = 2$ and $x = 3$ .
TUIST	Exact is a statistical function	Syntax: EDIST(y dog froodom1 dog froodom2)
	that raturns the E probability	TDIST(x,ueg_freedom1,ueg_freedom2)
	distribution. It returns the	Formula: EDIST(2.3.4) This avample returns
	probability that the random	the probability that the random variable has a
	probability that the random	the probability that the random variable has a

	variable has a value between two specified values.	value between 2 and 3 with degrees of freedom 3 and 4.
FINV	FINV is an Excel function used to calculate the inverse of the F-Distribution.	Syntax: FINV(probability, degrees_freedom1, degrees_freedom2) Formula: FINV(0.95, 10, 10)This example would return the inverse of the F-Distribution with a probability of 0.95, 10 degrees of freedom for the numerator, and 10 degrees of freedom for the denominator.
FTEST	The FTEST function returns the result of an F-test. An F- test is a type of statistical test that is used to compare the variances of two data sets.	Syntax: FTEST(array1, array2) Formula: FTEST(A1:A10, B1:B10)
GAMMADIST	GAMMADIST is an Excel function that calculates the Gamma probability density function or the cumulative Gamma distribution.	<b>Syntax:</b> GAMMADIST(x,alpha,beta,cumulative) <b>Formula:</b> GAMMADIST(2,3,4,TRUE)This example will calculate the cumulative Gamma distribution for $x = 2$ , alpha = 3, and beta = 4.
GAMMAINV	The GAMMAINV function returns the inverse of the gamma cumulative distribution.	Syntax: GAMMAINV(probability,alpha,beta) Formula: GAMMAINV(0.95,2,2)This example returns the inverse of the gamma cumulative distribution for a probability of 0.95, an alpha of 2, and a beta of 2.
HYPGEOMDI ST	The HYPGEOMDIST function returns the hypergeometric distribution. It is used to calculate the probability of a given number of successes in a sample of a given size, taken from a population of a given size containing a certain number of successes.	<ul> <li>Syntax: HYPGEOMDIST(sample_s, number_sample, population_s, number_successes)</li> <li>Formula: HYPGEOMDIST(10, 5, 20, 3)This example returns the probability of 3 successes in a sample of 5 taken from a population of 20 containing 3 successes.</li> </ul>
LOGINV	LOGINV is an Excel function that returns the inverse of the lognormal cumulative distribution.	<ul><li>Syntax: LOGINV(probability, mean, standard_dev)</li><li>Formula: LOGINV(0.5, 0.5, 0.5) returns 1.29</li></ul>

LOGNORMD IST MODE	The LOGNORMDIST function in Microsoft Excel returns the cumulative log- normal distribution for a given set of parameters. MODE: The MODE	Syntax: LOGNORMDIST(x, mean, standard_dev) Formula: To find the cumulative log-normal distribution for a value of x = 0.5, with a mean of 0.3 and a standard deviation of 0.2, the formula would be: LOGNORMDIST(0.5, 0.3, 0.2). The result of this formula is 0.788. Syntax: MODE(number1, [number2],)
	function returns the most frequently occurring, or repetitive, value in an array or range of data.	<b>Formula:</b> MODE(1,2,3,3,3,4,5)Result: 3
NEGBINOMD IST	The NEGBINOMDIST function returns the probability of a given number of failures occurring before a specified number of successes in a negative binomial experiment.	Syntax: NEGBINOMDIST(number_f, number_s, probability_s) Formula: To calculate the probability of 3 failures occurring before 5 successes in a negative binomial experiment with a success probability of 0.4, the formula would be:=NEGBINOMDIST(3, 5, 0.4)The result would be 0.09216.
NORMDIST	NORMDIST is a statistical function in Microsoft Excel which returns the normal cumulative distribution for a specified mean and standard deviation.	Syntax: NORMDIST(x, mean, standard_dev, cumulative) Formula: To find the normal cumulative distribution for a mean of 10 and a standard deviation of 2, the formula would be =NORMDIST(10, 10, 2, TRUE).
NORMINV	The NORMINV function returns the inverse of the normal cumulative distribution for a given mean and standard deviation.	<ul> <li>Syntax: NORMINV(probability, mean, standard_dev)</li> <li>Formula: To find the inverse of the normal cumulative distribution for a probability of 0.5, a mean of 10 and a standard deviation of 2, the formula would be:=NORMINV(0.5, 10, 2)The result would be 10.</li> </ul>
NORMSDIST	The NORMSDIST function returns the cumulative normal distribution for a given value. It is used to calculate the probability that a random variable will take a value less than or equal to a given value.	Syntax: NORMSDIST(x) Formula: To calculate the probability that a random variable will take a value less than or equal to 0.5, the formula would be: =NORMSDIST(0.5)

NORMSINV	NORMSINV is an Excel function that calculates the inverse of the standard normal cumulative distribution. It returns the value of the inverse standard normal distribution for a	<b>Syntax:</b> NORMSINV(probability) <b>Formula:</b> To calculate the inverse of the standard normal cumulative distribution for a probability of 0.5, the formula would be:=NORMSINV(0.5)This would return a value of 0, as the inverse of the standard
	given probability.	normal cumulative distribution for a probability of 0.5 is 0.
PERCENTIL E	The PERCENTILE function returns the k-th percentile of values in a range.	<b>Syntax:</b> PERCENTILE(array,k) <b>Formula:</b> PERCENTILE(A1:A10,0.5)This example returns the 50th percentile of the values in cells A1 through A10.
PERCENTRA NK	The PERCENTRANK function in Excel returns the rank of a value in a data set as a percentage of the data set.	Syntax: PERCENTRANK(array, x, [significance]) Formula: PERCENTRANK(A2:A10, A2)This formula will return the rank of the value in cell A2 as a percentage of the values in the range A2:A10.
POISSON	The POISSON function in Excel calculates the probability of a given number of events occurring in a fixed period of time, given the average rate of occurrence.	Syntax: POISSON(x, mean, cumulative)x = The number of eventsmean = The expected mean number of eventscumulative = A logical value that determines the form of the function (TRUE for cumulative, FALSE for probability) Formula: POISSON(4,6,FALSE)This example would calculate the probability of 4 events occurring in a fixed period of time, given the average rate of occurrence is 6. The result would be 0.1839
QUARTILE	The QUARTILE function returns the quartile of a given set of data. Quartiles divide a set of data into four equal parts.	<b>Syntax:</b> QUARTILE(array, quart) <b>Formula:</b> QUARTILE(A2:A10,2)This example returns the second quartile of the data set in cells A2 to A10.
RANK	The RANK function in Excel is used to return the rank of a number within a set of numbers.	<b>Syntax:</b> RANK(number,ref,[order]) <b>Formula:</b> RANK(A2,A2:A7,1)In this example, the RANK function will return the rank of the number in cell A2 within the range of cells A2 to A7, in ascending order.
STDEV	STDEV is an Excel function that calculates the standard	Syntax: STDEV(number1, [number2],)

STDEVP	deviation of a set of numbers. It is used to measure the amount of variation or dispersion from the average of a set of values. STDEVP is a statistical function in Microsoft Excel that calculates the standard deviation of a population based on a sample of numbers.	<ul> <li>Formula: STDEV(2,4,6,8,10)The result of this example would be 2.87.</li> <li>Syntax: STDEVP(number1, [number2],)</li> <li>Formula: STDEVP(2, 4, 6, 8)This would return 2, which is the standard deviation of the sample set (2, 4, 6, 8).</li> </ul>
TDIST	The TDIST function returns the probability associated with a Student's t- distribution.	<b>Syntax:</b> TDIST(x,deg_freedom,tails) <b>Formula:</b> TDIST(2,5,1)This example returns the probability associated with a Student's t- distribution for x=2, degrees of freedom=5, and 1 tail.
TINV	TINV is an Excel function used to calculate the inverse of the t-distribution. It is used to calculate the critical value of the t-distribution, given a certain significance level.	Syntax: TINV(probability, degrees_of_freedom) Formula: TINV(0.05, 10)This example returns the critical value of the t-distribution with 10 degrees of freedom and a significance level of 0.05. The result is 1.81246.
TTEST	TTEST Function:The TTEST function calculates the probability associated with the Student's t-test. The Student's t-test is used to determine whether two samples are likely to have come from the same two underlying populations that have the same mean.	<ul> <li>Syntax: TTEST(array1, array2, tails, type)Array1: The first array of data.Array2: The second array of data.Tails: The number of tails in the t-test. The default value is 2.Type: The type of t-test. The default value is 1.</li> <li>Formula: TTEST(A2:A7, B2:B7, 2, 1)This example will calculate the probability associated with the Student's t-test for the two arrays of data in A2:A7 and B2:B7, using two tails and type 1.</li> </ul>
VAR	The VAR function in Excel is used to calculate the variance of a set of values.	<b>Syntax:</b> VAR(number1, [number2],) <b>Formula:</b> VAR(2,4,6,8)This will return 6, which is the variance of the set of values.
VARP	VARP is an Excel function that calculates the variance of a population based on a set of values.	<pre>Syntax: VARP(value1, [value2],) Formula: VARP(1,2,3,4,5)Result: 2</pre>

WEIBULL	The WEIBULL function in	<b>Syntax:</b> WEIBULL(x,alpha,beta,cumulative)
	Excel calculates the Weibull	
	probability density function	Formula: WEIBULL(2,3,4,TRUE)This
	or the Weibull cumulative	example will calculate the Weibull
	distribution function for a	cumulative distribution function with $x = 2$ ,
	supplied set of parameters.	alpha = 3, and $beta = 4$ .
ZTEST	The ZTEST function in	Syntax: ZTEST(array, x, [sigma])
	Excel calculates the one-	
	tailed probability-value (P-	Formula:=ZTEST(A1:A50, 70, 15),
	value) of a z-test.	calculates the one-tailed P-value of a z-test
		for a sample of data in cells A1 to A50 in
		Excel.

### **Cube Functions**

**Unlock the Secrets of Multidimensional Data Analysis** with Cube Functions, specifically designed for PivotTables. Explore data relationships, interact with different dimensions, and create dynamic reports to gain deeper insights from your complex datasets. (Note: Requires knowledge of PivotTables)

- Specifically designed for PivotTables.
- Explore data relationships and interact with different dimensions.
- Create dynamic reports for deeper insights from complex datasets.

Function	Description	Syntax and Formula
CUBEKPIMEMBER	CUBEKPIMEMBER is an Excel function that returns a key performance indicator (KPI) value from an OLAP cube.	Syntax: CUBEKPIMEMBER(cube_name, kpi_name) Formula: CUBEKPIMEMBER("Sales Cube", "Sales") returns the sales KPI value from the Sales Cube.
CUBEMEMBER	The CUBEMEMBER function returns information about a member or tuple within a cube.	Syntax: CUBEMEMBER(cube_name, member_name) Formula: CUBEMEMBER("Sales Cube", "Product[Beverages]")
CUBEMEMBERPROPE RTY	The CUBEMEMBERPROPE RTY function returns a property value for a given cube member.	Syntax: CUBEMEMBERPROPERTY(cube _name, member_name, property_name)

		Formula: CUBEMEMBERPROPERTY("Sale s Cube", "[Product].[Product].[Bread]", "UniqueName")This example
		returns the unique name of the cube member "[Product].[Product].[Bread]" from the "Sales Cube" cube.
CUBERANKEDMEMBE R	The CUBERANKEDMEMB ER function is a Microsoft Excel function that returns the nth item in a set, based on its rank in the set.	Syntax: CUBERANKEDMEMBER(set, rank [, [ascending   descending]]) Formula: To return the third highest value in the set {1,2,3,4,5}, the following formula can be used: CUBERANKEDMEMBER({1,2,3,4,5}, 3, descending)The result of the formula is 3.
CUBESET	The CUBESET function is used to create a set of members or tuples from a cube.	<pre>Syntax: CUBESET(cube_name, set_expression, [name]) Formula: CUBESET("Sales Cube", "[Measures].[Quantity] &gt; 1000", "High Quantity Sales")</pre>
CUBESETCOUNT	The CUBESETCOUNT function in Excel returns the number of sets in a cube.	Syntax: CUBESETCOUNT(cube_name) Formula: CUBESETCOUNT("Sales Cube")This example would return the number of sets in the cube named "Sales Cube".
CUBEVALUE	The CUBEVALUE function is a Microsoft Excel function that returns a value from an OLAP cube.	Syntax: CUBEVALUE(connection, cube_ref, field1, field2,) Formula: CUBEVALUE("OLAP", "[Sales].[Product].[Product]", "Revenue")

# **Database Functions**

**Bridge the Gap Between Excel and External Databases**. These advanced tools allow you to retrieve, manipulate, and aggregate data directly from database tables, streamlining data integration and analysis for power users.

- Retrieve, manipulate, and aggregate data directly from database tables.
- Requires a basic understanding of database structures and functionalities.

Function	Description	Syntax and Formula
DAVERAGE	DAVERAGE is an	Syntax: DAVERAGE(database, field, criteria)
	Excel function that	
	calculates the	Formula: To calculate the average of the prices of
	average of selected	all products in the database with the category of
	database entries	"Fruit", the following formula can be used:
	that meet certain	DAVERAGE(A2:E7,5,"Fruit")
	criteria.	
DCOUNT	DCOUNT: The	Syntax: DCOUNT(database, field,
	DCOUNT	criteria)Database: This is the range of cells that
	function counts the	makes up the list or database. A database is a list of
	cells that contain	related data in which rows of related information
	numbers in a	are records, and columns of data are
	database.	fields. Field: This is the column in the database that
		you want to count the numbers in Criteria: This is
		an optional range of cells that contains criteria.
		Formula: DCOUNT(A1:D10 "Age" A1:C10)This
		example counts the number of cells in the Age
		column (column 4) of the database range A1:D10
		that meet the criteria in the range A1.C10
DCOUNTA	DCOUNTA is an	Syntax: DCOUNTA(database_field_criteria)
20001111	Excel function that	
	counts the number	Formula: DCOUNTA(A1:C10, 1, ">10")This
	of cells in a	example counts the number of cells in the range
	database that	A1:C10 in the first field (field 1) that contain a
	contain numbers	number greater than 10.
	and meets a given	
	set of criteria.	
DGET	The DGET	Syntax: DGET(database, field, criteria)
	function is used to	
	extract a single	Formula: DGET(A1:D10, "Age",
	value from a	"Name"="John")This example will return the age
	specified database	of the person named John from the database range
	record (row) that	A1:D10.
	matches the given	
	Criteria.	Comton DMAY/database Citle State
DMAX	DIVIAX IS an Excel	Syntax: DMAA(database, field, criteria)
	function that	

	returns the	
	maximum value	Formula: DMAX(A1:B10, "Price", "Product =
	from a specified	Shoes")This example would return the maximum
	database column	price from the range A1:B10 where the product is
	that meets a given	equal to "Shoes"
	criteria.	
DMIN	The DMIN	Svntax: DMIN(database, field, criteria)
	function returns	
	the smallest	Formula: DMIN(A2:C10,"Price",
	number in a set of	"Category=Clothing")
	values from a	6, 6,
	database.	
DPRODUCT	The DPRODUCT	<b>Syntax:</b> DPRODUCT(array1, array2, [array3],)
	function multiplies	
	the corresponding	Formula: DPRODUCT(A1:A3.B1:B3)This
	values in two or	example multiplies the values in cells A1. A2 and
	more arrays and	A3 with the corresponding values in cells B1, B2
	returns the sum of	and B3, and returns the sum of the products.
	the products.	····· ··· ······ ······ ····· ···· ·····
DSTDEV	DSTDEV is an	Syntax: DSTDEV(number1, [number2],)
	Excel statistical	
	function that	<b>Formula:</b> DSTDEV(2, 4, 6, 8, 10)Result:
	calculates the	2.82842712474619
	standard deviation	
	of a population	
	based on a sample	
	of numbers.	
DSTDEVP	DSTDEVP is a	<b>Syntax:</b> DSTDEVP(database, field, criteria)
	statistical function	~ (=====, = (=====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, ====, =====, ====, =====, =====, =====, ====, =====, =====, =====, =====, =====, =====, =====, =====, =====, =====, =====, ======
	in Microsoft Excel	Formula: To find the standard deviation of the
	that returns the	population of people living in a certain city, the
	standard deviation	following formula could be used:
	of a population	=DSTDEVP(A1:A100, "population", "city")
	based on a sample	
	of data.	
DSUM	DSUM is a	Syntax: DSUM(database, field, criteria)
	function in	
	Microsoft Excel	Formula: DSUM(A1:C10, "Price",
	that allows users to	"Category=Clothing")This example will sum up all
	sum up values in a	of the values in the "Price" column of the range
	list that meet	A1:C10 that have the category "Clothing".
	certain criteria.	
DVAR	The DVAR	Syntax: DVAR(database, field, criteria)
	function in Excel	
	calculates the	Formula: To calculate the variance of the amount
		column in the table below, where the date is greater

	variance of a	than or equal to 1/1/2020:DVAR(A2:C10,
	sample set of data.	"Amount", "Date>= $1/1/2020"$ )
DVARP	The DVARP	Syntax: DVARP(number1,[number2],)
	function in Excel	
	is used to calculate	<b>Formula:</b> DVARP(2,4,6,8,10)This example would
	the variance of a	return 4.
	population based	
	on a sample of	
	data.	

# **Engineering Functions**

**Delve into Specialized Engineering Calculations** with Excel's Engineering Functions. From converting between degrees and radians (DEGREES, RADIANS) to complex unit conversions (CONVERT), these functions cater to specific engineering disciplines and provide solutions for advanced technical calculations.

- Cater to specific engineering disciplines.
- Perform complex unit conversions and engineering calculations.

Function	Description	Syntax and Formula
BESSELI	BESSELI is an Excel function that returns the modified Bessel function $In(x)$ . It is used to calculate the modified Bessel function of the first kind.	<b>Syntax:</b> BESSELI( $x,n$ ) $x$ – The value for which to calculate the modified Bessel function.n – The order of the modified Bessel function. <b>Formula:</b> BESSELI(1,2)This formula will return the modified Bessel function of the first kind for $x = 1$ and order = 2. The result will be 0.440050585744933.
BESSELJ	The BESSELJ function is an Excel function that returns the Bessel function of the first kind, Jn, of an order n and argument x.	Syntax: BESSELJ(x,n) Formula: BESSELJ(1,2) returns 0.440050585744933
BESSELK	The BESSELK function is an Excel function that returns the modified Bessel function K of the specified order and argument.	Syntax: BESSELK(x,n) Formula: BESSELK(2,3) returns 0.06899

BESSELY	The BESSELY function is an Excel function that calculates the Bessel function of the first kind, which is a mathematical function used to solve a variety of problems in physics, engineering, and mathematics.	Syntax: BESSELY(x,n) Formula: BESSELY(2,3)This formula will return the Bessel function of the first kind for $x = 2$ and $n = 3$ .
BIN2DEC	BIN2DEC is an Excel function that converts a binary number to a decimal number	Syntax: BIN2DEC(number) Formula: BIN2DEC(10101) returns 21
BIN2HEX	The BIN2HEX function is used to convert a binary number to a hexadecimal number.	Syntax: BIN2HEX(number, [places]) Formula: BIN2HEX(10101010, 8)Result: AA
BIN2OCT	BIN2OCT is an Excel function that converts a binary number to an octal number.	Syntax: BIN2OCT(number) Formula: BIN2OCT(10101010) returns 252
BITAND	BITAND is a logical function in Excel that performs a bitwise AND operation on two numbers. The syntax for the BITAND function is: BITAND(number1, number2).	<b>Syntax:</b> BITAND( number1, number2) <b>Formula:</b> BITAND(7, 11)This will return the result of 7 (111 in binary) AND 11 (1011 in binary), which is 3 (11 in binary).
BITLSHIFT	BITLSHIFT is an Excel function that shifts the bits of a number to the left or right. It takes two arguments: the number to be shifted, and the number of bits to shift it.	<ul><li>Syntax: BITLSHIFT(number, shift_amount)</li><li>Formula: BITLSHIFT(10, 2)This example shifts the bits of the number 10 to the left by two bits. The result is 40.</li></ul>
BITOR	BITOR is an Excel logical function that returns a bitwise OR of two numbers. The	<ul><li>Syntax: BITOR(number1, number2)</li><li>Formula: BITOR(4, 5)This will return 5 as the result.</li></ul>

	syntax for the BITOR function is: BITOR(number1,	
	number2).	
BITRSHIFT	BITRSHIFT is an Excel function that	<b>Syntax:</b> BITRSHIFT(number, shift_amount)
	number to the right. It takes two arguments: the number to be shifted and the number of positions to shift.	<b>Formula:</b> BITRSHIFT(10,2)This example shifts the bits of the number 10 two positions to the right, resulting in the value 2.
BITXOR	The BITXOR function returns a bitwise 'exclusive or' of two	<b>Syntax:</b> BITXOR(number1, number2) <b>Formula:</b> BITXOR(5,7)This will return 4, as $5 \times OP 7 = 4$
COMPLEX	The COMPLEX function is used to convert real and	Syntax: COMPLEX(real_num, i_num, [suffix])
	imaginary coefficients into a complex number.	<b>Formula:</b> COMPLEX(5,3,"i")This will return the complex number 5+3i.
CONVERT	The CONVERT function is used to convert a number from one unit of measurement to another.	Syntax: CONVERT(number, from_unit, to_unit) Formula: CONVERT(10, "mi", "km")This example would convert 10 miles to kilometers, and the result would be 16.09344 kilometers.
DEC2BIN	DEC2BIN is an Excel function that converts a decimal (base 10) number to a binary (base 2) number.	Syntax: DEC2BIN(number, [places]) Formula: DEC2BIN(10, 8) returns 00001010.
DEC2HEX	DEC2HEX is an Excel function that converts a decimal number to a hexadecimal number.	Syntax: DEC2HEX(number, [places]) Formula: DEC2HEX(255,2)Result: FF
DEC2OCT	The DEC2OCT function is a mathematical function in Microsoft Excel that converts a decimal number to an octal number.	Syntax: DEC2OCT(number, places) Formula: DEC2OCT(20,2)Result: 24

DELTA	The DELTA function	Syntax: DELTA(number1, number2)
	two values are equal	Formula: DFLTA(A1 B1)
	and 0 if they are not	
	equal.	
ERF	The ERF function	<pre>Syntax: ERF(lower_limit, upper_limit)</pre>
	returns the error	
	function integrated	<b>Formula:</b> ERF(-1,2)This example returns
	between two supplied	the value of 0.954499/36103642, which is
	function is a special	between -1 and 2
	function used in	between 1 and 2.
	probability and	
	statistics to measure	
	the area under a	
	normal distribution	
EDE DDECISE	CURVE.	Syntow: EDE DDECISE(w)
ENF.F NECISE	function is an Excel	Symax: EKF.FRECISE(x)
	function that calculates	Formula: ERF.PRECISE(0.5)This
	the error function of a	formula will return the error function of
	given value. The error	0.5, which is 0.5204999.
	function is a	
	mathematical function	
	used to calculate the	
	normally distributed	
	random variable will	
	be within a certain	
	range.	
ERFC	ERFC is an Excel	Syntax: ERFC(number)
	function that returns	Earneyles EDEC(0.5) This everyte returns
	error function of a	<b>Formula:</b> EKFC $(0.3)$ This example returns the value 0.479500122
	given number.	the value 0.479300122.
ERFC.PRECISE	The ERFC.PRECISE	Syntax: ERFC.PRECISE(lower_limit,
	function is an Excel	upper_limit)
	statistical function that	
	returns the	<b>Formula:</b> To calculate the complementary
	function integrated	the formula would be:
	between lower limit	=ERFC.PRECISE(0,1) which returns
	and upper_limit. The	0.842700792949715.
	complementary error	
	function is a special	
	function used in	

	statistics and	
	probability theory.	
GESTEP	The GESTEP function	Syntax: GESTEP(number, step)
	returns a logical value	
	of TRUE or FALSE	<b>Formula:</b> GESTEP(7, 3)This will return
	depending on whether	TRUE as 7 is greater than or equal to 3.
	a number is greater	
	than or equal to a	
	given step value.	
HEX2BIN	The HEX2BIN	Syntax: HEX2BIN(number, [places])
	function in Excel is	
	used to convert a	Formula: HEX2BIN(A1, 8)In this
	hexadecimal number	example, the HEX2BIN function will
	to a binary number.	convert the hexadecimal number in cell A1
	to a binary number with 8 places.	
HEX2DEC	HEX2DEC is an Excel	Syntax: HEX2DEC(number)
	function that converts	
	a hexadecimal number	Formula: HEX2DEC("FF") returns 255
	to its decimal	
	equivalent.	
HEX2OCT	The HEX2OCT	Syntax: HEX2OCT(number)
	function in Excel is	
	used to convert a	Formula: HEX2OCT(A1) where A1
	hexadecimal number	contains the hexadecimal number "F1"
	to an octal number.	will return the octal number "361".
IMABS	The IMABS function	Syntax: IMABS(inumber)
	is an Excel function	
	that returns the	Formula: IMABS(5+3i)Result: 5
	absolute value of a	
	complex number.	
IMAGINARY	The IMAGINARY	Syntax: IMAGINARY(inumber)
	function returns the	
	imaginary coefficient	Formula: IMAGINARY(2+3i)This
	of a complex number	formula will return 3, which is the
	in Excel.	imaginary coefficient of the complex
		number 2+31.
IMARGUMENT	The IMARGUMENT	Syntax: IMARGUMENT(inumber)
	function returns the	
	argument theta, which	<b>Formula:</b> IMARGUMEN I (2+31) returns
	is the angle associated	0.982/93/2324/329
	with the complex	
	number in $x + 1y$ (x	
	and y are real	
	The IMCONILICATE	Suntour IMCONULICATE
IMCONJUGATE	function notures the	Syntax: INICONJUGATE(Inumber)
	function returns the	

	complex conjugate of a complex number.	<b>Formula:</b> IMCONJUGATE(2+4i)Result: 2-4i
IMCOS	The IMCOS function returns the cosine of an angle given in radians.	Syntax: IMCOS(number) Formula: To calculate the cosine of 2 radians, use the following Formula:=IMCOS(2)The result would be -0.41614683654714.
IMCOSH	The IMCOSH function returns the hyperbolic cosine of a complex number in $x + yi$ or $x + yj$ text format.	Syntax: IMCOSH(inumber) Formula: IMCOSH(1+2i)Result: 3.76219 + 0.96623i
IMCOT	IMCOT is an Excel function that returns the imaginary part of a complex number.	Syntax: IMCOT(inumber) Formula: IMCOT(2+3i)Result: -3
IMCSC	The IMCSC function is used to calculate the complex conjugate of a complex number in Microsoft Excel.	Syntax: IMCSC(inumber) Formula: IMCSC(2+3i)Result: 2-3i
IMCSCH	EDULEThe IMCSCHEDULE function in Microsoft Excel is used to calculate the number of payments for a loan or an annuity.	Syntax: IMCSCHEDULE(principal, interest, payments, start_period, end_period, type) Formula: To calculate the number of payments for a loan of \$1000 with an interest rate of 5% and a payment period of 12 months, the following formula can be used:IMCSCHEDULE(1000, 0.05, 12, 1, 12, 0)The result of this formula will be 12, meaning that the loan will have 12 payments.
IMDIV	The IMDIV function returns the result of a complex number division in the imaginary number format.	Syntax: IMDIV(inumber1, inumber2) Formula: To divide the imaginary numbers 5i and 2i, the formula would be:=IMDIV(5i,2i)The result would be 2.5i.
IMEXP	The IMEXP function is an Excel function that imports data from a text file into a worksheet. It is a	<b>Syntax:</b> IMEXP(filename, [worksheet], [start_row], [start_column], [import_type], [import_options])

	useful tool for	
	importing data from	Formula: IMEXP("C:\mydata.txt",
	other sources into	"Sheet1", 1, 1, "Delimited",
	Excel.	"FieldsPerRecord=4")
IMLN	IMLN: The IMLN	Syntax: IMLN(matrix)
	function returns the	•
	inverse matrix	<b>Formula:</b> IMLN(A1:B2)Where A1:B2 is
	logarithm of a matrix.	a $2 \times 2$ matrix containing the values 1, 2, 3
		and 4 The result of this formula would be
		the inverse matrix logarithm of the matrix
IMLOG10	The IMLOG10	Syntax: IMLOG10(number)
	function returns the	Syntax IVIDO CTO(Indinioci)
	logarithm of a number	Formula: IMI OG10(100)The result of
	to the base 10	this formula is 2 as the logarithm of 100
	to the buse 10.	to the base 10 is 2
IMLOG2	IMI OG2 is an Excel	Syntay: IML OG2(number)
	function used to	Syntax. IviLoO2(Inumber)
	calculate the binary	<b>Formula:</b> IMLOG2(8)This formula will
	logarithm of a number.	return 3 as the binary logarithm of 8 is 3
	The function takes a	
	single argument, which	
	is the number for	
	which the binary	
	logarithm is to be	
	calculated.	
IMPOWER	The IMPOWER	Syntax: IMPOWER(number, power)
	function is an Excel	•
	function that returns	<b>Formula:</b> IMPOWER(2,3)This will return
	the given number	8, as 2 to the power of 3 is 8.
	raised to the power of	- · · · · · · · · · · · · · · · · · · ·
	raised to the power of	
	another number.	
IMPRODUCT	another number. The IMPRODUCT	Syntax:
IMPRODUCT	another number. The IMPRODUCT function returns the	<b>Syntax:</b> IMPRODUCT(inumber1,inumber2,)
IMPRODUCT	another number. The IMPRODUCT function returns the product of two or more	<b>Syntax:</b> IMPRODUCT(inumber1,inumber2,)
IMPRODUCT	another number. The IMPRODUCT function returns the product of two or more complex numbers.	Syntax: IMPRODUCT(inumber1,inumber2,) Formula: IMPRODUCT(2+3i,4+5i)This
IMPRODUCT	another number. The IMPRODUCT function returns the product of two or more complex numbers.	Syntax: IMPRODUCT(inumber1,inumber2,) Formula: IMPRODUCT(2+3i,4+5i)This would return 22+22i.
IMPRODUCT IMREAL	another number. The IMPRODUCT function returns the product of two or more complex numbers. IMREAL is an Excel	Syntax: IMPRODUCT(inumber1,inumber2,) Formula: IMPRODUCT(2+3i,4+5i)This would return 22+22i. Syntax: IMREAL(number)
IMPRODUCT IMREAL	another number. The IMPRODUCT function returns the product of two or more complex numbers. IMREAL is an Excel function that returns	Syntax: IMPRODUCT(inumber1,inumber2,) Formula: IMPRODUCT(2+3i,4+5i)This would return 22+22i. Syntax: IMREAL(number)
IMPRODUCT IMREAL	another number. The IMPRODUCT function returns the product of two or more complex numbers. IMREAL is an Excel function that returns TRUE if a number is a	Syntax: IMPRODUCT(inumber1,inumber2,)Formula:IMPRODUCT(2+3i,4+5i)This would return 22+22i.Syntax:IMREAL(number)Formula:IMREAL(3.14)This example
IMPRODUCT IMREAL	another number. The IMPRODUCT function returns the product of two or more complex numbers. IMREAL is an Excel function that returns TRUE if a number is a real number and	Syntax: IMPRODUCT(inumber1,inumber2,)Formula:IMPRODUCT(2+3i,4+5i)This would return 22+22i.Syntax:IMREAL(number)Formula:IMREAL(3.14)This example would return TRUE as 3.14 is a real
IMPRODUCT IMREAL	another number. The IMPRODUCT function returns the product of two or more complex numbers. IMREAL is an Excel function that returns TRUE if a number is a real number and FALSE if it is not.	Syntax: IMPRODUCT(inumber1,inumber2,)Formula: IMPRODUCT(2+3i,4+5i)This would return 22+22i.Syntax: IMREAL(number)Formula: IMREAL(3.14)This example would return TRUE as 3.14 is a real number.
IMPRODUCT IMREAL IMSEC	another number. The IMPRODUCT function returns the product of two or more complex numbers. IMREAL is an Excel function that returns TRUE if a number is a real number and FALSE if it is not. The IMSEC function	Syntax: IMPRODUCT(inumber1,inumber2,)Formula:IMPRODUCT(2+3i,4+5i)This would return 22+22i.Syntax:IMREAL(number)Formula:IMREAL(3.14)This example would return TRUE as 3.14 is a real number.Syntax:IMSEC(time)
IMPRODUCT IMREAL IMSEC	another number. The IMPRODUCT function returns the product of two or more complex numbers. IMREAL is an Excel function that returns TRUE if a number is a real number and FALSE if it is not. The IMSEC function returns the number of	Syntax: IMPRODUCT(inumber1,inumber2,)Formula:IMPRODUCT(2+3i,4+5i)This would return 22+22i.Syntax:IMREAL(number)Formula:IMREAL(3.14)This example would return TRUE as 3.14 is a real number.Syntax:IMSEC(time)
IMPRODUCT IMREAL IMSEC	<ul> <li>another number.</li> <li>The IMPRODUCT</li> <li>function returns the</li> <li>product of two or more</li> <li>complex numbers.</li> </ul> IMREAL is an Excel function that returns TRUE if a number is a real number and FALSE if it is not. The IMSEC function returns the number of seconds in a given	Syntax: IMPRODUCT(inumber1,inumber2,)Formula:IMPRODUCT(2+3i,4+5i)This would return 22+22i.Syntax:IMREAL(number)Formula:IMREAL(3.14)This example would return TRUE as 3.14 is a real number.Syntax:IMSEC(time)Formula:IMSEC("12:30:15") returns

IMSECH	The IMSECH function	Syntax: IMSECH(number)	
	returns the inverse		
	hyperbolic secant of a	<b>Formula:</b> IMSECH(0.5)The result of this	
	given number.	function is 1.3169578969248.	
IMSIN	VThe IMSINV	Syntax: IMSINV(array)	
	function returns the		
	inverse of the matrix	<b>Formula:</b> IMSINV({1,2,3;4,5,6;7,8,9})	
	which is provided as	returns the inverse of the matrix	
	an argument.	{1,2,3;4,5,6;7,8,9} as {-0.222, 0.111,	
		0.333; 0.167, -0.056, -0.139; 0.056, 0.167,	
		-0.056}.	
IMSINH	The IMSINH function	Syntax: IMSINH(number)	
	returns the hyperbolic		
	sine of a given	Formula: IMSINH(2) returns	
	number.	1.919154444	
IMSQRT	IMSQRT is an Excel	Syntax: IMSQRT(inumber)inumber – A	
	function that returns	complex number for which you want to	
	the imaginary	find the imaginary component of the	
	component of the	square root.	
	square root of a	Earmanles D(CODT(2 ; 2))This will return	
	complex number.	<b>Formula:</b> $IMSQR1(2+51)THS$ will return 1.5: which is the imaginary component of	
		1.51, which is the imaginary component of the square root of $2 \pm 3i$	
IMCIID	The IMCLIP function	Suptov: MSUP(arrow1, arrow2)	
INISUD	returns the difference	Syntax: IWSOB(array1, array2)	
	between two arrays of	Formula: IMSUB(A1:A5 B1:B5) This	
	any size	formula will return the difference between	
	uny size.	the two arrays A1:A5 and B1:B5	
IMSUM	The IMSUM function	<b>Syntax:</b> IMSUM(array, criteria)	
	calculates the sum of		
	an array of numbers	Formula: IMSUM(A1:A10, ">50")This	
	based on a given set of	formula will sum all the numbers in the	
	conditions.	range A1:A10 that are greater than 50.	
IMTAN	The IMTAN function	Syntax: IMTAN(x)	
	returns the modified		
	Bessel function of the	<b>Formula:</b> IMTAN(2)This example returns	
	first kind, which is a	the value 0.2078795763507619.	
	mathematical function		
	used to solve		
	differential equations.		
OCT2BIN	OCT2BIN is an Excel	Syntax: OCT2BIN(number,	
	function that converts	[places])number: The octal number that	
	an octal number to a	you want to convert to a binary	
	binary number.	number.places: (optional) The number of	
		characters to use.	

		Formula: OCT2BIN(11)Result: 1011
OCT2DEC	The OCT2DEC	Syntax: OCT2DEC(number)
	function converts an	
	octal number to a	Formula: OCT2DEC(77)This example
	decimal number in	would return the decimal number 63.
	Microsoft Excel.	
OCT2HEX	The OCT2HEX	Syntax:OCT2HEX(number, [places])
	function converts an	
	octal number to a	Formula:OCT2HEX(11, 4)Result: 13
	hexadecimal number.	

#### **Web Functions**

**Bring the Power of the Web Directly into Your Spreadsheet** with Web Functions! These tools allow you to retrieve data from web pages in real-time, keeping your spreadsheets dynamic and up-to-date with the latest information. (Requires internet connection and may be affected by website availability)

- Retrieve data from web pages in real-time.
- Requires internet connection and may be affected by website availability.

Function	Description	Syntax and Formula
ENCODEURL	ENCODEURL	Syntax: ENCODEURL(text)
	is an Excel	
	function that	Formula:
	encodes a	ENCODEURL("www.example.com/search?q=hello
	string of text	world")Result:
	into a URL-	www.example.com/search%3Fq%3Dhello%20world
	safe format.	
	This is useful	
	when creating a	
	hyperlink in a	
	cell.	
FILTERXML	The	Syntax: FILTERXML(xml, xpath)
	FILTERXML	
	function in	Formula: FILTERXML("Dr. Seuss","/book/title")The
	Excel is used to	result of this formula would be "The Cat in the Hat".
	extract data	
	from an XML	
	string, based on	
	an XPath	
	expression.	

WEBSERVICE	The	Syntax: WEBSERVICE(url)
	WEBSERVICE	
	function is used	Formula:
	to retrieve data	WEBSERVICE("https://www.example.com/data.xml")
	from a web	
	service in an	
	Excel	
	worksheet.	

## **Conclusion: Mastering the Art of Excel Functions**

Congratulations! You've embarked on a journey to conquer the vast landscape of Excel functions. This guide has equipped you with a foundational understanding of the core categories and their key functionalities.

Remember, this is just the beginning! As you delve deeper into Excel, you'll discover a treasure trove of even more specialized functions catering to specific needs. Here are some tips to solidify your Excel mastery:

- **Practice Makes Perfect:** Experiment with the functions covered in this guide. Create sample spreadsheets and play around with different formulas to solidify your understanding.
- **Explore Online Resources:** The internet is brimming with tutorials, examples, and cheat sheets for Excel functions. Utilize these resources to expand your knowledge and tackle more complex tasks.
- **Don't Be Afraid to Experiment:** The beauty of Excel lies in its versatility. Don't be afraid to combine functions and explore creative solutions to your data analysis challenges.

With dedication and practice, you'll transform from a spreadsheet novice to a data analysis guru. So, fire up Excel, unleash the power of functions, and unlock the hidden insights within your data!