Microsoft Excel Formula Cheat Sheet

Quick Reference for 80+ Essential Formulas

■ MATH & STATISTICS

`SUM(range)`	Adds all numbers in a range	*=SUM(A1:A10)*
`SUMIF(range,criteria,[sum_range])`	Conditional sum	*=SUMIF(B2:B10,"Sales",C2:C10)*
`SUMIFS(sum_range,range1,crit1,...)`	Sum with multiple conditions	*=SUMIFS(C2:C10,B2:B10,"Sales",D2:D10,">100")*
`AVERAGE(range)`	Mean of values	*=AVERAGE(A1:A10)*
`AVERAGEIF(range,criteria,[avg_range])`	Conditional average	*=AVERAGEIF(B2:B10,"Jan",C2:C10)*
`MIN(range) / MAX(range)`	Smallest / largest value	*=MIN(A1:A10) / =MAX(A1:A10)*
`COUNT(range)`	Count cells with numbers	*=COUNT(A1:A10)*
`COUNTA(range)`	Count non-empty cells	*=COUNTA(A1:A10)*
`COUNTIF(range,criteria)`	Count cells matching condition	*=COUNTIF(B2:B10,">50")*
`COUNTIFS(range1,crit1,...)`	Count with multiple conditions	*=COUNTIFS(B2:B10,"Sales",C2:C10,">100")*
`ROUND(number,digits)`	Round to specified decimals	*=ROUND(3.14159,2) → 3.14*
`ABS(number)`	Absolute value	*=ABS(-25) → 25*
`MOD(number,divisor)`	Remainder after division	*=MOD(10,3) → 1*
`POWER(number,power)`	Raise to a power	*=POWER(2,10) → 1024*
`SQRT(number)`	Square root	*=SQRT(144) → 12*
`INT(number)`	Round down to integer	*=INT(4.9) → 4*
`RAND() / RANDBETWEEN(low,high)`	Random number	*=RANDBETWEEN(1,100)*

■ LOOKUP & REFERENCE

`VLOOKUP(val,table,col,[match])`	Vertical lookup (legacy)	*=VLOOKUP(A2,D:F,2,FALSE)*
`HLOOKUP(val,table,row,[match])`	Horizontal lookup	*=HLOOKUP(A1,D1:Z3,2,FALSE)*
`XLOOKUP(val,lookup_arr,return_arr)`	Modern flexible lookup	*=XLOOKUP(A2,D2:D100,E2:E100)*
`INDEX(array,row,[col])`	Return value at position	*=INDEX(A1:C10,3,2)*
`MATCH(val,array,[type])`	Position of value in range	*=MATCH("Apple",A1:A10,0)*
`INDEX+MATCH combo`	Flexible 2-way lookup	*=INDEX(C1:C10,MATCH(A2,A1:A10,0))*
`CHOOSE(index,val1,val2,...)`	Select from list by index	*=CHOOSE(2,"Mon","Tue","Wed")*
`OFFSET(ref,rows,cols,[h],[w])`	Shift reference by rows/cols	*=OFFSET(A1,2,1) → C1 value*
`INDIRECT(ref_text)`	Reference from text string	*=INDIRECT("A"&ROW;())*
`ROW([ref]) / COLUMN([ref])`	Row or column number	*=ROW(A5) → 5*

■ TEXT FUNCTIONS

`LEN(text)`	Number of characters	*=LEN("Hello") → 5*
`LEFT(text,n) / RIGHT(text,n)`	Extract from left or right	*=LEFT(A1,3)*
`MID(text,start,n)`	Extract from middle	*=MID(A1,3,4)*
`FIND(find_text,within)`	Position (case-sensitive)	*=FIND("@",A1)*
`SEARCH(find,within)`	Position (case-insensitive)	*=SEARCH("excel",A1)*
`UPPER(text) / LOWER(text)`	Change case	*=UPPER(A1) / =LOWER(A1)*
`PROPER(text)`	Title Case	*=PROPER("john doe") → John Doe*
`TRIM(text)`	Remove extra spaces	*=TRIM(A1)*
`SUBSTITUTE(text,old,new)`	Replace text	*=SUBSTITUTE(A1," ","_")*
`REPLACE(text,start,n,new)`	Replace by position	*=REPLACE(A1,1,3,"XYZ")*
`CONCATENATE / &`	Join text	*=A1&" "&B1;*
`TEXTJOIN(delim,ignore,range)`	Join range with delimiter	*=TEXTJOIN(",",TRUE,A1:A5)*
`TEXT(value,format)`	Number to formatted text	*=TEXT(A1,"DD-MM-YYYY")*
`VALUE(text)`	Text to number	*=VALUE("1,234") → 1234*
`REPT(text,n)`	Repeat text n times	*=REPT("★",5)*

■ DATE & TIME

`TODAY() / NOW()`	Current date / datetime	*=TODAY() / =NOW()*
`DATE(year,month,day)`	Create a date	*=DATE(2024,12,31)*
`YEAR(date) / MONTH(date) / DAY(date)`	Extract date parts	*=YEAR(A1) / =MONTH(A1)*
`HOUR(time) / MINUTE(time) / SECOND(time)`	Extract time parts	*=HOUR(A1)*
`WEEKDAY(date,[type])`	Day of week (1-7)	*=WEEKDAY(TODAY(),2)*
`WEEKNUM(date)`	Week number of year	*=WEEKNUM(TODAY())*
`EDATE(date,months)`	Date N months away	*=EDATE(A1,3)*
`EOMONTH(date,months)`	Last day of month	*=EOMONTH(TODAY(),0)*
`NETWORKDAYS(start,end,[holidays])`	Working days between dates	*=NETWORKDAYS(A1,B1)*
`DATEDIF(start,end,"unit")`	Difference in Y/M/D	*=DATEDIF(A1,B1,"Y")*
`DATEVALUE(text)`	Text string to date	*=DATEVALUE("01/01/2024")*

■ LOGICAL FUNCTIONS

`IF(test,true_val,false_val)`	Conditional result	*=IF(A1>100,"High","Low")*
`IFS(test1,val1,test2,val2,...)`	Multiple conditions	*=IFS(A1>90,"A",A1>80,"B",TRUE,"C")*
`AND(cond1,cond2,...)`	All conditions true?	*=AND(A1>0,B1<100)*
`OR(cond1,cond2,...)`	Any condition true?	*=OR(A1="Y",B1="Yes")*
`NOT(logical)`	Reverse true/false	*=NOT(A1=0)*
`IFERROR(value,error_val)`	Trap errors	*=IFERROR(A1/B1,0)*
`IFNA(value,na_val)`	Trap #N/A only	*=IFNA(VLOOKUP(...),"Not found")*
`SWITCH(val,case1,res1,...)`	Match & return value	*=SWITCH(A1,1,"Jan",2,"Feb","Other")*
`TRUE() / FALSE()`	Boolean constants	*=IF(A1>0,TRUE(),FALSE())*
`XOR(cond1,cond2)`	Exclusive OR	*=XOR(A1>5,B1>5)*

■ FINANCIAL FUNCTIONS

`PMT(rate,nper,pv)`	Loan payment per period	*=PMT(5%/12,60,-10000)*
`PV(rate,nper,pmt)`	Present value	*=PV(5%/12,60,200)*
`FV(rate,nper,pmt,[pv])`	Future value	*=FV(5%/12,12,-100)*
`NPV(rate,values)`	Net present value	*=NPV(10%,B2:B6)*
`IRR(values)`	Internal rate of return	*=IRR(B1:B6)*
`RATE(nper,pmt,pv)`	Interest rate per period	*=RATE(60,200,-10000)*
`NPER(rate,pmt,pv)`	Number of periods	*=NPER(5%/12,-200,10000)*
`SLN(cost,salvage,life)`	Straight-line depreciation	*=SLN(10000,1000,5)*
`IPMT(rate,per,nper,pv)`	Interest part of payment	*=IPMT(5%/12,1,60,-10000)*
`PPMT(rate,per,nper,pv)`	Principal part of payment	*=PPMT(5%/12,1,60,-10000)*

■ ARRAY & DYNAMIC (Excel 365)

FILTER(array,include,[empty])	Filter by condition	*=FILTER(A2:C10, B2:B10="Sales")*
SORT(array,[idx],[order])	Sort a range	*=SORT(A2:B10,2,-1)*
SORTBY(array,by_arr,[order])	Sort by another array	*=SORTBY(A2:A10,B2:B10,-1)*
UNIQUE(array)	Remove duplicates	*=UNIQUE(A2:A100)*
SEQUENCE(rows,[cols],[start],[step])	Generate number sequence	*=SEQUENCE(10,1,1,2)*
RANDARRAY(rows,[cols])	Array of random numbers	*=RANDARRAY(5,3)*
VSTACK(arr1,arr2)	Stack arrays vertically	*=VSTACK(A1:C5, A10:C15)*
HSTACK(arr1,arr2)	Stack arrays horizontally	*=HSTACK(A1:A5, C1:C5)*
LET(name1,val1,...,calc)	Assign names to values	*=LET(x,A1*2,x+10)*
LAMBDA(param,formula)	Create custom function	*=LAMBDA(x,x*x)(5) → 25*

■ TIPS & SHORTCUTS

F4 (in formula)	Toggle $ absolute/relative refs	*A1 → A1 → A$1 → $A1*
Ctrl + Shift + Enter	Enter array formula (legacy)	*{=SUM(A1:A5*B1:B5)}*
$ sign in references	A1=absolute, A1=relative	*=A1 vs =A1*
Named Ranges	Use Formulas > Define Name	*=SUM(SalesData)*
F2	Edit active cell formula	*Shows formula in cell*
Ctrl + `	Toggle show formulas	*Shows all formulas in sheet*
Trace Precedents (Alt+TU)	Audit formula inputs	*Formulas > Trace Precedents*
FORMULATEXT(ref)	Show formula as text	*=FORMULATEXT(B2)*

Pro Tips: Use **Ctrl+Shift+L** to toggle filters • **Alt+=** to AutoSum • **Ctrl+T** to create a Table • **F9** to evaluate part of a formula • **Ctrl+Z** to undo