Excel Formulas

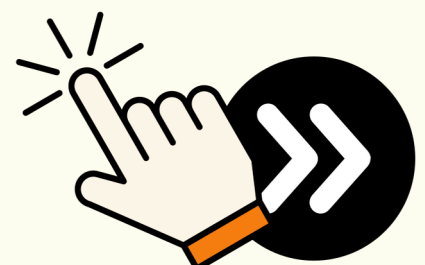# Every Data Analyst Must Know (with Examples!)

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Basic Formulas

- SUM → **=SUM(A1:A10)** → Adds values in a range.

- AVERAGE → **=AVERAGE(A1:A10)** → Calculates the mean.

- COUNT → **=COUNT(A1:A10)** → Counts numeric values in a range.

- COUNTA → **=COUNTA(A1:A10)** → Counts all non-empty cells.

- COUNTBLANK → **=COUNTBLANK(A1:A10)** → Counts blank cells.

- LEN → **=LEN(A1)** → Returns the length of a string.

- TRIM → **=TRIM(A1)** → Removes extra spaces in text

- CONCATENATE (or CONCAT) → **=CONCAT(A1, B1)** → Joins text values.

- TEXTJOIN → **=TEXTJOIN(", ", TRUE, A1:A5)** → Joins text with a delimiter.

- NOW → **=NOW()** → Returns current date & time.

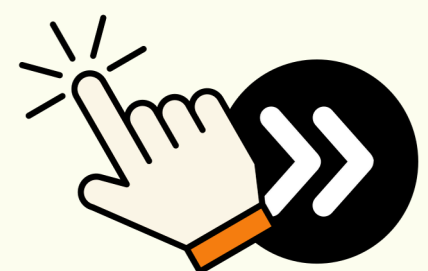- TODAY → **=TODAY()** → Returns current date only.

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Logical & Conditional Formulas:

- IF → **=IF(A1>50, "Pass", "Fail")** → Returns a value based on a condition.

- IFERROR → **=IFERROR(A1/B1, "Error")** → Handles errors gracefully.

- IFNA → **=IFNA(VLOOKUP(A1, B1:C10, 2, FALSE), "Not Found")** → Handles #N/A errors.

- IFS → **=IFS(A1>90, "A", A1>80, "B", A1>70, "C")** → Multiple conditions in one formula.

- AND → **=AND(A1>50, B1<100)** → Returns TRUE if all conditions are met.

- OR → **=OR(A1>50, B1<100)** → Returns TRUE if any condition is met.
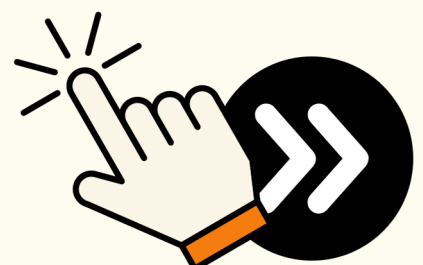
- NOT → **=NOT(A1=100)** → Reverses a logical condition.

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Lookup & Reference Formulas:

- VLOOKUP → **=VLOOKUP(101, A2:C10, 2, FALSE)** → Searches for a value in a column.

- HLOOKUP → **=HLOOKUP(101, A2:C10, 2, FALSE)** → Searches for a value in a row.

- XLOOKUP → **=XLOOKUP(101, A:A, B:B, "Not Found")** → Advanced lookup (no need for sorting).

- INDEX → **=INDEX(A2:C10, 3, 2)** → Returns a value at a specific row/column.

- MATCH → **=MATCH(50, A2:A10, 0)** → Returns the position of a value in a range.

- CHOOSE → **=CHOOSE(2, "Apple", "Banana", "Cherry")** → Returns a value based on an index.

- OFFSET → **=OFFSET(A1, 2, 1**) → Returns a value at a specific offset.

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Text Functions:

- LEFT → **=LEFT(A1, 5)** → Extracts the first 5 characters.

- RIGHT → **=RIGHT(A1, 3)** → Extracts the last 3 characters.

- MID → **=MID(A1, 3, 4)** → Extracts characters from a specific position.

- FIND → **=FIND("X", A1)** → Finds the position of a substring

- .SEARCH → **=SEARCH("X", A1)** → Like FIND but case-insensitive.

- SUBSTITUTE → **=SUBSTITUTE(A1, "Old", "New")** → Replaces a word.

- REPT → **=REPT("*", 5)** → Repeats a character multiple times.

- TEXT → **=TEXT(A1, "MM/DD/YYYY")** → Formats a number as text.

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Date & Time Functions:

- YEAR → **=YEAR(A1)** → Extracts year from a date.

- MONTH → **=MONTH(A1)** → Extracts month from a date.

- DAY → **=DAY(A1)** → Extracts day from a date.

- WEEKDAY → **=WEEKDAY(A1, 2)** → Returns the day of the week (1=Monday).

- EOMONTH → **=EOMONTH(A1, 1)** → Returns the last day of the month.

- DATEDIF → **=DATEDIF(A1, B1, "Y")** → Finds the difference in years.

- NETWORKDAYS → **=NETWORKDAYS(A1, B1)** → Calculates working days between two dates.

- WORKDAY → **=WORKDAY(A1, 5)** → Returns a future date skipping weekends.
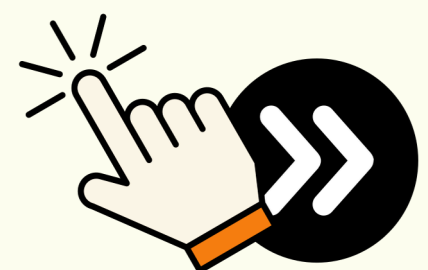
- TIME → **=TIME(12, 30, 0)** → Creates a time value.

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Statistical & Mathematical Functions:

- ROUND → **=ROUND(A1, 2)** → Rounds to 2 decimal places.

- ROUNDDOWN → **=ROUNDDOWN(A1, 2)** → Rounds down.

- ROUNDUP → **=ROUNDUP(A1, 2)** → Rounds up

- .RAND → **=RAND()** → Generates a random number between 0 and 1.

- RANDBETWEEN → **=RANDBETWEEN(1, 100)** Generates a random integer.

- ABS → **=ABS(A1)** → Returns the absolute value.

- SQRT → **=SQRT(A1)** → Returns the square root.

- MOD → **=MOD(A1, 3)** → Returns remainder after division.

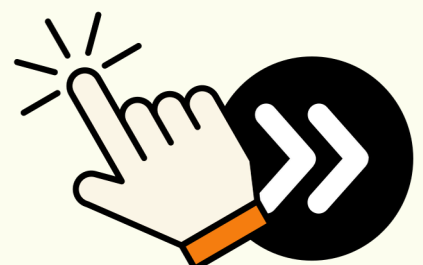- POWER → **=POWER(A1, 2)** → Raises a number to a power.

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Data Cleaning Functions:

- CLEAN → **=CLEAN(A1)** → Removes non-printable characters.

- UNIQUE → **=UNIQUE(A1:A10)** → Returns unique values

- .SORT → **=SORT(A1:A10, 1, TRUE)** → Sorts data in ascending order.

- FILTER → **=FILTER(A1:A10, B1:B10="Yes")** → Filters data based on a condition.

- REMOVE DUPLICATES (Excel Feature, Not Formula)

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