

# Excel Formulas for Students

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Here is a list of important Excel formulas that will help you perform your tasks more efficiently on a spreadsheet.

To better understand each of these, just copy the formula given in the “How to use” section for each formula in an empty cell and enter some random values to check the result.

## Mathematical Formulas:

1. SUM: =SUM(range)

**Purpose:** Add up a list of numbers.

**How to use:** =SUM(A1:A5) adds up the values in cells A1 to A5.

2. AVERAGE: =AVERAGE(range)

**Purpose:** Calculate the average of a set of numbers.

**How to use:** =AVERAGE(B1:B5) calculates the average of values in cells B1 to B5.

3. MAX: =MAX(range)

**Purpose:** Find the highest value in a range.

**How to use:** =MAX(C1:C5) finds the highest test score in cells C1 to C5.

4. MIN: =MIN(range)

**Purpose:** Find the lowest value in a range.

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**How to use:** =MIN(D1:D5) finds the lowest temperature recorded in cells D1 to D5.

5. COUNT: =COUNT(range)

**Purpose:** Count the number of cells in a range.

**How to use:** =COUNT(E1:E5) counts the number of non-empty cells in cells E1 to E5.

## Text and Data Manipulation:

1. CONCATENATE: =CONCATENATE(text1, text2, ...)

**Purpose:** Combine text from multiple cells into one.

**How to use:** =CONCATENATE(F1, " ", G1) combines the text in cells F1 and G1 with a space in between.

2. LEN: =LEN(text)

**Purpose:** Count the number of characters in a cell.

**How to use:** =LEN(H1) checks the length of a text message in cell H1.

3. LEFT: =LEFT(text, num\_chars)

**Purpose:** Extract a specified number of characters from the left of a cell.

**How to use:** =LEFT(I1, 3) extracts the first three characters from cell I1.

4. RIGHT: =RIGHT(text, num\_chars)

**Purpose:** Extract a specified number of characters from the right of a cell.

**How to use:** =RIGHT(J1, 2) extracts the last two characters from cell J1.

5. TRIM: =TRIM(text)

**Purpose:** Remove extra spaces from text.

**How to use:** =TRIM(K1) cleans up leading and trailing spaces in cell K1.

6. UPPER: =UPPER(text)

**Purpose:** Convert text to uppercase.

**How to use:** =UPPER(L1) converts the text in cell L1 to uppercase.

7. LOWER: =LOWER(text)

**Purpose:** Convert text to lowercase.

**How to use:** =LOWER(M1) converts the text in cell M1 to lowercase.

## Conditional Formulas:

1. IF: =IF(logical\_test, value\_if\_true, value\_if\_false)

**Purpose:** Perform conditional calculations.

**How to use:** =IF(N1>70, "Pass", "Fail") checks if the value in cell N1 is greater than 70.

2. AND: =AND(logical1, logical2, ...)

**Purpose:** Check if all specified conditions are true.

**How to use:** =AND(O1>60, O1<90) checks if both conditions are met for the value in cell O1.

3. OR: =OR(logical1, logical2, ...)

**Purpose:** Check if any specified condition is true.

**How to use:** =OR(P1="A", P1="B") checks if either "A" or "B" is selected in cell P1.

## Lookup and Reference:

1. VLOOKUP: =VLOOKUP(lookup\_value, table\_array, col\_index\_num, [range\_lookup])

**Purpose:** Look up values in a vertical table.

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**How to use:** =VLOOKUP(Q1, A1:B5, 2, FALSE) looks up the value in Q1 in a table and returns the corresponding value from the second column.

2. HLOOKUP: =HLOOKUP(lookup\_value, table\_array, row\_index\_num, [range\_lookup])

**Purpose:** Look up values in a horizontal table.

**How to use:** =HLOOKUP(R1, A1:E5, 3, FALSE) looks up the value in R1 and returns the value from the third row of the table.

## Date and Time:

1. TODAY: =TODAY()

**Purpose:** Display the current date.

**How to use:** =TODAY() displays today's date.

2. NOW: =NOW()

**Purpose:** Display the current date and time.

**How to use:** =NOW() displays the current date and time.

3. DATEDIF: =DATEDIF(start\_date, end\_date, "unit")

**Purpose:** Calculate the difference between the two dates.

**How to use:** =DATEDIF(S1, T1, "d") calculates the number of days between the dates in cells S1 and T1.

## Financial Formulas:

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

**Purpose:** Calculate loan or investment payments.

**How to use:** =PMT(5%, 5, -1000) calculates the monthly payment for a \$1,000 loan at a 5% annual interest rate.

2. FV: =FV(rate, nper, pmt, [pv], [type])

**Purpose:** Calculate the future value of an investment.

**How to use:** =FV(3%, 10, -200, -5000) calculates the future value of an investment with regular \$200 payments, at a 3% annual interest rate.

## Statistical Formulas:

1. COUNTIF: =COUNTIF(range, criteria)

**Purpose:** Count cells that meet a specific condition.

**How to use:** =COUNTIF(U1:U5, ">80") counts the number of students who scored above 80 in cells U1 to U5.

2. SUMIF: =SUMIF(range, criteria, [sum\_range])

**Purpose:** Sum cells that meet a specific condition.

**How to use:** =SUMIF(V1:V5, "Product A", W1:W5) adds up the values in cells W1 to W5 where the corresponding cells in V1 to V5 contain "Product A."

3. AVERAGEIF: =AVERAGEIF(range, criteria, [average\_range])

**Purpose:** Calculate the average of cells that meet a specific condition.

**How to use:** =AVERAGEIF(X1:X5, "Category A", Y1:Y5) finds the average rating for items categorized as "Category A" in cells X1 to X5.

## Rounding and Formatting:

1. ROUND: =ROUND(number, num\_digits)

**Purpose:** Round numbers to a specific number of decimal places.

**How to use:** =ROUND(Z1, 2) rounds the value in cell Z1 to two decimal places.

2. TEXT: =TEXT(value, format\_text)

**Purpose:** Format numbers or dates.

**How to use:** =TEXT(AA1, "dd-mmm-yyyy") formats the date in cell AA1 as "01-Jan-2023."

## Percentage Calculation:

PERCENTAGE: =A1/B1

**Purpose:** Calculate a percentage based on two numbers.

**How to use:** =A1/B1 calculates the percentage based on the values in cells A1 and B1.

## Array Formulas:

1. SUMPRODUCT: =SUMPRODUCT(array1, array2, ...)

**Purpose:** Multiply arrays and then sum the products.

**How to use:** =SUMPRODUCT(A1:A5, B1:B5) multiplies corresponding cells in A1:A5 and B1:B5, then sums the products.

2. TRANSPOSE: =TRANSPOSE(array)

**Purpose:** Transpose rows into columns or vice versa. (Entered as an array formula)

**How to use:** Select a range of cells and enter the formula as an array formula (press Ctrl+Shift+Enter) to transpose rows into columns or vice versa.