# 44 Mathematical Functions in Excel

Microsoft Excel has plenty of mathematical functions that help perform various mathematical operations. In this article, you will get to know 44 mathematical functions in Excel.

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# Most Common Excel Mathematical Functions

## 1. The AVERAGE Function

- **Function Objective:**
  The **AVERAGE function** calculates the average of numbers in a range of cells.
- **Syntax:**
  *AVERAGE(number1, [number2], ...)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|:---:|:---:|:---|
| number1 | Required | The first number for which you want to calculate the average. |
| number2 | Optional | The second number for which you want to calculate the average. |

- **Return Parameter:**
  The average of all the numbers in a range of cells.
- **AVERAGE Function in Action:**

The spreadsheet shows "Usage of AVERAGE Function" with columns Number1, Number2, Average:

| Number1 | Number2 | Average |
|---------|---------|---------|
| 34 | 27 | =AVERAGE(B5:C5) |
| 33 | 88 | 60.5 |
| 57 | 78 | 67.5 |
| 61 | 33 | 47 |
| 87 | 43 | 65 |
| 53 | 93 | 73 |
| 49 | 39 | 44 |
| 45 | 100 | 72.5 |

## 2. The AVERAGEA Function

- **Function Objective:**
  The **AVERAGEA function** calculates the arithmetic mean of numbers in a range of cells.
- **Syntax:**
  *AVERAGEA(value1, [value2], ...)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|-----------|-------------------|-------------|
| value1 | Required | The first number for which you want to calculate the arithmetic mean. |
| value2 | Optional | The second number for which you want to calculate the arithmetic mean. |

- **Return Parameter:**
  The arithmetic mean of all the numbers in a range of cells.
- **AVERAGEA Function in Action:**

Usage of AVERAGEA Function

| Number1 | Number2 | Arithmetic Mean |
|---|---|---|
| 34 | 27 | =AVERAGEA(B5:C5) |
| 33 | 88 | 60.5 |
| 57 | 78 | 67.5 |
| 61 | 33 | 47 |
| 87 | 43 | 65 |
| 53 | 93 | 73 |
| 49 | 39 | 44 |
| 45 | 100 | 72.5 |

## 3. The CEILING Function

- **Function Objective:**
  The **CEILING function** rounds a number away from zero, to the nearest multiple of the significance.
- **Syntax:**
  *CEILING(number, significance)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The fraction number that you want to round off. |
| *significance* | Required | The number to which you want to round off values. |

- **Return Parameter:**
  Rounded off version of an input number.
- **CEILING Function in Action:**

Usage of CEILING Function

| Number1 | Rounded off |
|---|---|
| 34.3 | =CEILING(B5,3) |
| 3.3 | 6 |
| 5.7 | 6 |
| 6.1 | 9 |
| 8.7 | 9 |
| 5.3 | 6 |
| 4.9 | 6 |
| 4.5 | 6 |

## 4. The COUNT Function

- **Function Objective:**
  The **COUNT function** counts the number of cells that contain numbers.
- **Syntax:**
  *COUNT(value1, [value2], ...)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| value1 | Required | The first cell to count. |
| value2 | Optional | The second cell to count. |

- **Return Parameter:**
  The count value of a number of cells that contain numbers.
- **COUNT Function in Action:**

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | Usage of COUNT Function | | |
| 3 | | | | |
| 4 | | **Number1** | **Number2** | **Count** |
| 5 | | 34 | 27 | =COUNT(B5:C5) |
| 6 | | 33 | 88 | 2 |
| 7 | | 57 | 78 | 2 |
| 8 | | 61 | 33 | 2 |
| 9 | | 87 | 43 | 2 |
| 10 | | 53 | 93 | 2 |
| 11 | | 49 | 39 | 2 |
| 12 | | 45 | 100 | 2 |

## 5. The COUNTA Function

- **Function Objective:**
  The **COUNTA function** counts the number of cells that are not blank.
- **Syntax:**
  *COUNTA(value1, [value2], ...)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| value1 | Required | The first cell to count. |
| value2 | Optional | The second cell to count. |

- **Return Parameter:**
  The count value of a number of cells that are not empty.
- **COUNTA Function in Action:**

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | Usage of COUNTA Function | | |
| 3 | | | | |
| 4 | | Number1 | Number2 | Count |
| 5 | | 34 | 27 | =COUNTA(B5:C5) |
| 6 | | 33 | | 1 |
| 7 | | 57 | 78 | 2 |
| 8 | | 61 | | 1 |
| 9 | | 87 | | 1 |
| 10 | | 53 | | 1 |
| 11 | | 49 | 39 | 2 |
| 12 | | 45 | 100 | 2 |

## 6. The COUNTBLANK Function

- **Function Objective:**
  The **COUNTBLANK function** counts the number of blank cells in a range of cells.
- **Syntax:**
  *COUNTBLANK(range)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| range | Required | The range within which you want to count the number of blank cells. |

- **Return Parameter:**
  The count number of the blank cells.
- **COUNTBLANK Function in Action:**

Usage of COUNTBLANK Function

| Number1 | Number2 | Count Blanks |
|---|---|---|
| 34 | 27 | =COUNTBLANK(B5:C5) |
| 33 | | 1 |
| 57 | 78 | 0 |
| 61 | | 1 |
| 87 | | 1 |
| 53 | | 1 |
| 49 | 39 | 0 |
| 45 | 100 | 0 |

## 7. The EVEN Function

- **Function Objective:**
  The **EVEN function** rounds up numbers to the nearest even integer.
- **Syntax:**
  *EVEN(number)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The number to be rounded up to the nearest even integer. |

- **Return Parameter:**
  The rounded up number to the nearest even integer.
- **EVEN Function in Action:**

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | Usage of EVEN Function | |
| 3 | | | |
| 4 | | **Number1** | **Nearest Even Integer** |
| 5 | | 34 | =EVEN(B5) |
| 6 | | 33 | 34 |
| 7 | | 57 | 58 |
| 8 | | 61 | 62 |
| 9 | | 87 | 88 |
| 10 | | 53 | 54 |
| 11 | | 49 | 50 |
| 12 | | 45 | 46 |

## 8. The FLOOR Function

- **Function Objective:**
  The **FLOOR function** rounds a number towards zero, to the nearest multiple of the significance.
- **Syntax:**
  *FLOOR(number, significance)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The fraction number that you want to round off. |
| significance | Required | The number to which you want to round off values. |

- **Return Parameter:**
  Rounded off version of an input number.
- **FLOOR Function in Action:**

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | Usage of FLOOR Function | |
| 3 | | | |
| 4 | | Number1 | Rounded off |
| 5 | | 34.3 | =FLOOR(B5,3) |
| 6 | | 3.3 | 3 |
| 7 | | 5.7 | 3 |
| 8 | | 6.1 | 6 |
| 9 | | 8.7 | 6 |
| 10 | | 5.3 | 3 |
| 11 | | 4.9 | 3 |
| 12 | | 4.5 | 3 |

## 9. The GCD Function

- **Function Objective:**
  The **GCD function** calculates the greatest common divisor of two or more integer numbers.
- **Syntax:**
  *GCD(number1, [number2], ...)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number1 | Required | The first number to calculate the GCD. |
| number2 | Required | The second number to calculate the GCD. |

- **Return Parameter:**
  GCD of two or more integers.
- **GCD Function in Action:**

Usage of GCD Function

| Number1 | Number2 | GCD |
|---|---|---|
| 34 | 27 | =GCD(B5:C5) |
| 33 | 88 | 11 |
| 57 | 78 | 3 |
| 61 | 33 | 1 |
| 87 | 43 | 1 |
| 53 | 93 | 1 |
| 49 | 39 | 1 |
| 45 | 100 | 5 |

## 10. The INT Function

- **Function Objective:**
  The **INT function** rounds up numbers to the nearest integer.
- **Syntax:**
  *INT(number)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The number to be rounded up to the nearest integer. |

- **Return Parameter:**
  The rounded up number to the nearest integer.
- **INT Function in Action:**

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | **Usage of INT Function** | |
| 3 | | | |
| 4 | | **Number1** | **Nearest Integer** |
| 5 | | 34.3 | =INT(B5) |
| 6 | | 3.3 | 5 |
| 7 | | 5.7 | 7 |
| 8 | | 6.1 | 7 |
| 9 | | 8.7 | 9 |
| 10 | | 5.3 | 7 |
| 11 | | 4.9 | 5 |
| 12 | | 4.5 | 5 |

## 11. The LARGE Function

- **Function Objective:**
  The **LARGE function** returns the k-th largest value in a range of numbers or arrays.
- **Syntax:**
  *LARGE(array, k)*
  **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| array | Required | The range of numbers where to find the largest number. |
| k | Required | The position in a range of numbers of arrays that is to return. |

- **Return Parameter:**
  The k-th largest number in an array..
- **LARGE Function in Action:**
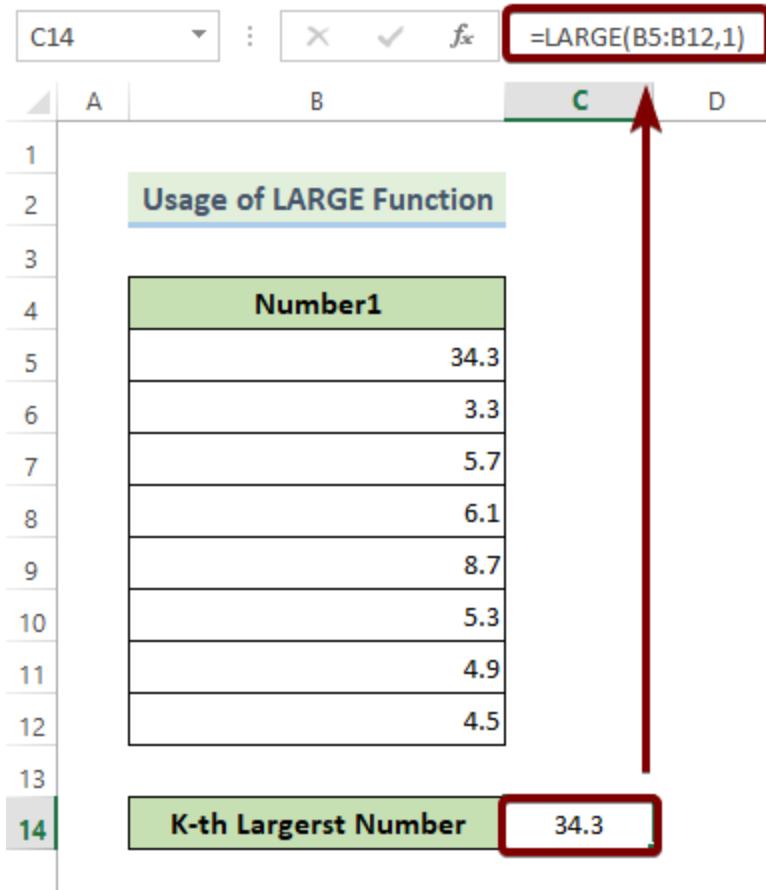
## 12. The LCM Function

- **Function Objective:**
  The **LCM function** calculates the least common multiple of two or more integer numbers.
- **Syntax:**
  *LCM(number1, [number2], ...)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number1 | Required | The first number to calculate the LCM. |
| number2 | Required | The second number to calculate the LCM. |

- **Return Parameter:**
  LCM of two or more integers.
- **LCM Function in Action:**

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | Usage of LCM Function | | |
| 3 | | | | |
| 4 | | **Number1** | **Number2** | **LCM** |
| 5 | | 34 | 27 | =LCM(B5:C5) |
| 6 | | 33 | 88 | 264 |
| 7 | | 57 | 78 | 1482 |
| 8 | | 61 | 33 | 2013 |
| 9 | | 87 | 43 | 3741 |
| 10 | | 53 | 93 | 4929 |
| 11 | | 49 | 39 | 1911 |
| 12 | | 45 | 100 | 900 |

13. The MAX Function
   - **Function Objective:**
   The **MAX function** returns the largest number in a set of numbers.
   - **Syntax:**
   *MAX(number1, [number2], ...)*
   - **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number1 | Required | The first number in the list to return the largest among them. |
| number2 | Optional | The second number in the list to return the largest among them. |

   - **Return Parameter:**
   The largest number in a set of numbers.
   - **MAX Function in Action:**

| | Number1 | Number2 | Largest Number |
|---|---|---|---|
| | 34 | 27 | =MAX(B5:C5) |
| | 33 | 88 | 88 |
| | 57 | 78 | 78 |
| | 61 | 33 | 61 |
| | 87 | 43 | 87 |
| | 53 | 93 | 93 |
| | 49 | 39 | 49 |
| | 45 | 100 | 100 |

**Usage of MAX Function**

## 14. The MIN Function

- **Function Objective:**
  The MIN function returns the smallest number in a set of numbers.
- **Syntax:**
  *MIN(number1, [number2], ...)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number1 | Required | The first number in the list to return the smallest among them. |
| number2 | Optional | The second number in the list to return the smallest among them. |

- **Return Parameter:**
  The smallest number in a set of numbers.
- **MIN Function in Action:**

Usage of MIN Function

| Number1 | Number2 | Smallest Number |
|---|---|---|
| 34 | 27 | =MIN(B5:C5) |
| 33 | 88 | 33 |
| 57 | 78 | 57 |
| 61 | 33 | 33 |
| 87 | 43 | 43 |
| 53 | 93 | 53 |
| 49 | 39 | 39 |
| 45 | 100 | 45 |

15. The MMULT Function
   ● **Function Objective:**
   The **MMULT function** returns the matrix product of two arrays.
   ● **Syntax:**
   *MMULT(array1, array2)*
   ● **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| array1 | Required | The first array to calculate the matrix product. |
| array2 | Optional | The second array to calculate the matrix product. |

   ● **Return Parameter:**
   Matrix product of two arrays.
   ● **MMULT Function in Action:**

| Number1 | Number2 | Matrix Product |
|---|---|---|
| 34 | 27 | =MMULT(B5,C5) |
| 33 | 88 | 2904 |
| 57 | 78 | 4446 |
| 61 | 33 | 2013 |
| 87 | 43 | 3741 |
| 53 | 93 | 4929 |
| 49 | 39 | 1911 |
| 45 | 100 | 4500 |

16. The MOD Function

- **Function Objective:**
  The **MOD function** returns the remainder when a number is divided by a divisor.
- **Syntax:**
  *MOD(number, divisor)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The number which you want to divide. |
| divisor | Required | The number with which you want to divide another number. |

- **Return Parameter:**
  The remainder when a number is divided by a divisor.

- **MOD Function in Action:**

| | A | B | C |
|---|---|---|---|
| 2 | | Usage of MOD Function | |
| 4 | | Number1 | Remainder |
| 5 | | 34 | =MOD(B5,3) |
| 6 | | 34 | 1 |
| 7 | | 58 | 1 |
| 8 | | 62 | 2 |
| 9 | | 88 | 1 |
| 10 | | 54 | 0 |
| 11 | | 50 | 2 |
| 12 | | 46 | 1 |

## 17. The ODD Function

- **Function Objective:**
  The **ODD function** rounds up numbers to the nearest odd integer.
- **Syntax:**
  *ODD(number)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The number to be rounded up to the nearest odd integer. |

- **Return Parameter:**
  The rounded up number to the nearest odd integer.
- **ODD Function in Action:**

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| | Number1 | Nearest Odd Integer |
|---|---|---|
| 5 | 34 | =ODD(B5) |
| 6 | 33 | 33 |
| 7 | 57 | 57 |
| 8 | 61 | 61 |
| 9 | 87 | 87 |
| 10 | 53 | 53 |
| 11 | 49 | 49 |
| 12 | 45 | 45 |

## 18. The PRODUCT Function

- **Function Objective:**
  The **PRODUCT function** multiplies all the numbers given as arguments.
- **Syntax:**
  *PRODUCT(number1, [number2], ...)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number1 | Required | The first number to multiply. |
| number2 | Optional | The second number to multiply. |

- **Return Parameter:**
  The product of input numbers.
- **PRODUCT Function in Action:**

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | Usage of PRODUCT Function | | |
| 3 | | | | |
| 4 | | Number1 | Number2 | Product |
| 5 | | 34 | 27 | =PRODUCT(B5:C5) |
| 6 | | 33 | 88 | 2904 |
| 7 | | 57 | 78 | 4446 |
| 8 | | 61 | 33 | 2013 |
| 9 | | 87 | 43 | 3741 |
| 10 | | 53 | 93 | 4929 |
| 11 | | 49 | 39 | 1911 |
| 12 | | 45 | 100 | 4500 |

19.  The RAND Function
   ● **Function Objective:**
     The **RAND function** returns a random value in between 0 and 1.
   ● **Syntax:**
     *RAND()*
   ● **Arguments Explanation:**
     It has no argument.
   ● **Return Parameter:**
     A random value in between 0 and 1.
   ● **RAND Function in Action:**

## 20. The RANDBETWEEN Function

- **Function Objective:**
  The **RANDBETWEEN function** returns a random number between a top and a bottom number.
- **Syntax:**
  *RANDBETWEEN(bottom, top)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|-----------|-------------------|-------------|
| bottom | Required | The lowest number of the range. |
| top | Required | The highest number of the range. |

- **Return Parameter:**
  A random number between a top and a bottom number.

- **RANDBETWEEN Function in Action:**

## 21. The ROUND Function

- **Function Objective:**
  The **ROUND function** rounds a number to a certain decimal place.
- **Syntax:**
  *ROUND(number, num_digits)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The fraction number that you want to round off. |
| *num_digits* | Required | The number of digits that you want to allow after the decimal point. |

- **Return Parameter:**
  Rounded off version of an input number.
- **ROUND Function in Action:**

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | Usage of ROUND Function | |
| 3 | | | |
| 4 | | **Number1** | **Rounded off** |
| 5 | | 34.33 | =ROUND(B5,1) |
| 6 | | 3.53 | 3.5 |
| 7 | | 5.77 | 5.8 |
| 8 | | 6.561 | 6.6 |
| 9 | | 8.567 | 8.6 |
| 10 | | 5.733 | 5.7 |
| 11 | | 4.656359 | 4.7 |
| 12 | | 4.556 | 4.6 |

## 22. The ROUNDUP Function

- **Function Objective:**
  The **ROUNDUP function** rounds a number off, away from zero.
- **Syntax:**
  *ROUNDUP(number, num_digits)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The fraction number that you want to round off. |
| *num_digits* | Required | The number of digits that you want to allow after the decimal point. |

- **Return Parameter:**
  Rounded off version of an input number.
- **ROUNDUP Function in Action:**

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | Usage of ROUNDUP Function | |
| 3 | | | |
| 4 | | Number1 | Rounded off |
| 5 | | 34.33 | =ROUNDUP(B5,1) |
| 6 | | 3.53 | 3.6 |
| 7 | | 5.77 | 5.8 |
| 8 | | 6.561 | 6.6 |
| 9 | | 8.567 | 8.6 |
| 10 | | 5.733 | 5.8 |
| 11 | | 4.656359 | 4.7 |
| 12 | | 4.556 | 4.6 |

## 23. The ROUNDDOWN Function

- **Function Objective:**
  The **ROUNDDOWN function** rounds a number towards zero.
- **Syntax:**
  *ROUNDDOWN(number, num_digits)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The fraction number that you want to round off. |
| *num_digits* | Required | The number of digits that you want to allow after the decimal point. |

- **Return Parameter:**
  Rounded off version of an input number.
- **ROUNDDOWN Function in Action:**

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | **Usage of ROUNDDOWN Function** | |
| 3 | | | |
| 4 | | **Number1** | **Rounded off** |
| 5 | | 34.33 | =ROUNDDOWN(B5,1) |
| 6 | | 3.53 | 3.5 |
| 7 | | 5.77 | 5.7 |
| 8 | | 6.561 | 6.5 |
| 9 | | 8.567 | 8.5 |
| 10 | | 5.733 | 5.7 |
| 11 | | 4.656359 | 4.6 |
| 12 | | 4.556 | 4.5 |

## 24. The SQRT Function

- **Function Objective:**
  The **SQRT function** returns the square root of a given number.
- **Syntax:**
  *SQRT(number)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The number to calculate the square root. |

- **Return Parameter:**
  The square root value of a given number.
- **SQRT Function in Action:**

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | Usage of SQRT Function | |
| 3 | | | |
| 4 | | Number1 | Square Root |
| 5 | | 34.3 | =SQRT(B5) |
| 6 | | 3.3 | 1.816590212 |
| 7 | | 5.7 | 2.387467277 |
| 8 | | 6.1 | 2.469817807 |
| 9 | | 8.7 | 2.949576241 |
| 10 | | 5.3 | 2.302172887 |
| 11 | | 4.9 | 2.213594362 |
| 12 | | 4.5 | 2.121320344 |

## 25. The SMALL Function

- **Function Objective:**
  The **SMALL function** returns the k-th smallest value in a range of numbers or arrays.
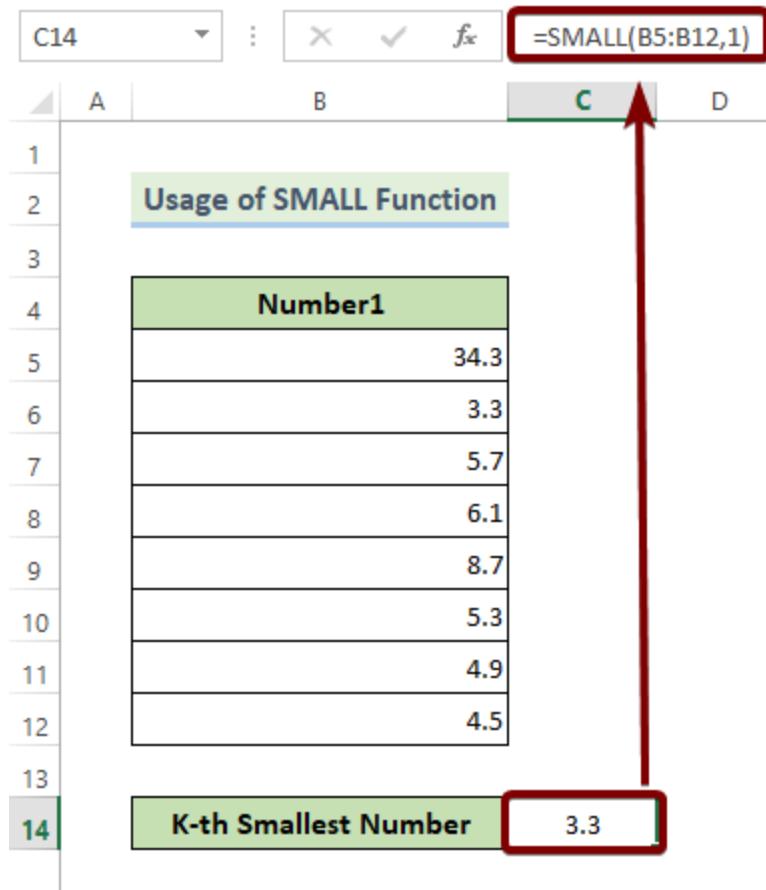- **Syntax:**
  *SMALL(array, k)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| array | Required | The range of numbers where to find the smallest number. |
| k | Required | The position in a range of numbers of arrays that is to return. |

- **Return Parameter:**
  The k-th smallest number in an array..
- **SMALL Function in Action:**

## 26. The SUM Function

- **Function Objective:**
  The **SUM function** adds values in a range of cells.
- **Syntax:**
  *SUM(number1,[number2],...)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number1 | Required | The first number that you want to add. |
| number2 | Optional | The second number that you want to add. |

- **Return Parameter:**
  The summation of all the numbers in a range of cells.
- **SUM Function in Action:**

|   | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | Usage of SUM Function | | |
| 3 | | | | |
| 4 | | Number1 | Number2 | SUM |
| 5 | | 34 | 27 | =SUM(B5:C5) |
| 6 | | 33 | 88 | 121 |
| 7 | | 57 | 78 | 135 |
| 8 | | 61 | 33 | 94 |
| 9 | | 87 | 43 | 130 |
| 10 | | 53 | 93 | 146 |
| 11 | | 49 | 39 | 88 |
| 12 | | 45 | 100 | 145 |

## 27. The SUMPRODUCT Function

- **Function Objective:**
- The SUMPRODUCT function calculates the sum of the product of a range of numbers or arrays..
- **Syntax:**
  *=SUMPRODUCT(array1, [array2]...)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| array1 | Required | The first array to calculate the sum of the product. |
| array2 | Optional | The second array to calculate the sum of the product. |

- **Return Parameter:**
  The sum of the product of the arrays.
- **SUMPRODUCT Function in Action:**

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | Usage of SUMPRODUCT Function | | |
| 3 | | | | |
| 4 | | Number1 | Number2 | Sum of Product |
| 5 | | 34 | 27 | =SUMPRODUCT(B5:B12,C5:C12) |
| 6 | | 33 | 88 | 24444 |
| 7 | | 57 | 78 | 21540 |
| 8 | | 61 | 33 | 17094 |
| 9 | | 87 | 43 | 15081 |
| 10 | | 53 | 93 | 11340 |
| 11 | | 49 | 39 | 6411 |
| 12 | | 45 | 100 | 4500 |

28.  The TRUNC Function
   ● **Function Objective:**
   The **TRUNC function** removes the fractional part from a decimal fraction number.
   ● **Syntax:**
   *TRUNC(number, [num_digits])*
   ● **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The fraction number that you want to truncate. |
| *num_digits* | Required | The number of digits that you want to allow after the decimal point. |

   ● **Return Parameter:**
   Rounded off version of an input number.
   ● **TRUNC Function in Action:**

| A | B | C |
|---|---|---|
| | **Usage of TRUNC Function** | |
| | **Number1** | **Rounded off** |
| | 34.3 | =TRUNC(B5,0) |
| | 3.3 | 3 |
| | 5.7 | 5 |
| | 6.1 | 6 |
| | 8.7 | 8 |
| | 5.3 | 5 |
| | 4.9 | 4 |
| | 4.5 | 4 |

# More Mathematical Functions in Excel

1. The ABS Function
   - **Function Objective:**
     The **ABS function** calculates the absolute value of a number.
   - **Syntax:**
     *ABS(number)*
   - **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The number to calculate the absolute value. |

   - **Return Parameter:**
     The absolute value of a given number.
   - **ABS Function in Action:**

## 2. The AGGREGATE Function

- **Function Objective:**
  The **AGGREGATE function** returns an aggregate from a list or database.
- **Syntax:**
  *AGGREGATE(function_num, options, ref1, [ref2], …)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| function_num | Required | A number from 1 to 19 representing a function. |
| options | Required | A number that decides which value to ignore while evaluating the range for a function. |
| ref1 | Required | The first number for functions that take multiple numeric arguments for which you want the aggregate value. |

| | | |
|---|---|---|
| ref2 | Optional | Numeric arguments 2 to 253 for which the aggregate value is determined |

- **Return Parameter:**
  The aggregate value of function.
- **AGGREGATE Function in Action:**



## 3. The ARABIC Function

- **Function Objective:**
  The **ARABIC function** converts roman numerical values to the arabic numerical values.
- **Syntax:**
  *ARABIC( text )*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| text | Required | A string of text enclosed in quotation marks, an empty string (""), or a |

| | | cell reference that contains text. |
|---|---|---|

- **Return Parameter:**
  Arabic numerical values.
- **ARABIC Function in Action:**



| | Number1 | Arabic Numericals |
|---|---|---|
| 5 | I | =ARABIC(B5) |
| 6 | II | 2 |
| 7 | III | 3 |
| 8 | M | 1000 |
| 9 | C | 100 |
| 10 | L | 50 |
| 11 | X | 10 |
| 12 | XI | 11 |

## 4. The BASE Function

- **Function Objective:**
  The **BASE function** converts a number into a certain radix of text representation.
- **Syntax:**
  *BASE(Number, Radix [Min_length])*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| Number | Required | The number that you want to convert. |
| Radix | Required | The base radix that you want your number to be converted into. |

| Min_length | Optional | Minimum length of the returned string. |
|---|---|---|

- **Return Parameter:**
  A text of certain radix.
- **BASE Function in Action:**



5. The COMBIN Function
- **Function Objective:**
  The **COMBIN function** returns the number of possible combinations of a given number.
- **Syntax:**
  *COMBIN(number, number_chosen)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The number of items to calculate the combination number. |
| number_chosen | Required | The number in each combination. |

- **Return Parameter:**
  The number of combinations.
- **COMBIN Function in Action:**

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | Usage of COMBIN Function | | |
| 3 | | | | |
| 4 | | **Number1** | **Number2** | **No. of Combination** |
| 5 | | 34 | 2 | =COMBIN(B5,C5) |
| 6 | | 33 | 3 | 5456 |
| 7 | | 57 | 4 | 395010 |
| 8 | | 61 | 5 | 5949147 |
| 9 | | 87 | 6 | 504981379 |
| 10 | | 53 | 7 | 154143080 |
| 11 | | 49 | 8 | 450978066 |
| 12 | | 45 | 9 | 886163135 |

## 6. The DECIMAL Function

- **Function Objective:**
  The **DECIMAL function** converts a given base into a decimal number.
- **Syntax:**
  *DECIMAL(text, radix)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| text | Required | The item to convert into decimal. |
| radix | Required | An integer value that defines the radix. |

- **Return Parameter:**
  The decimal representation of texts.
- **DECIMAL Function in Action:**

## 7. The EXP Function

- **Function Objective:**
  The **EXP function** returns the value of exponent applied to the base e.
- **Syntax:**
  *EXP(number)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The number that you want to apply to the base e. |

- **Return Parameter:**
  The value of exponent applied to the base e.
- **EXP Function in Action:**

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | Usage of EXP Function | |
| 3 | | | |
| 4 | | Number1 | Exponent |
| 5 | | 1 | =EXP(B5) |
| 6 | | 2 | 7.389056099 |
| 7 | | 3 | 20.08553692 |
| 8 | | 100 | 2.68812E+43 |
| 9 | | 100 | 2.68812E+43 |
| 10 | | 50 | 5.18471E+21 |
| 11 | | 10 | 22026.46579 |
| 12 | | 11 | 59874.14172 |

## 8. The FACT Function

- **Function Objective:**
  The **FACT function** returns the factorial of a number.
- **Syntax:**
  *FACT(number)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The number to calculate the factorial. |

- **Return Parameter:**
  The factorial of a given number.
- **FACT Function in Action:**

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | Usage of FACT Function | |
| 3 | | | |
| 4 | | **Number1** | **Factorial** |
| 5 | | 1 | =FACT(B5) |
| 6 | | 2 | 2 |
| 7 | | 3 | 6 |
| 8 | | 4 | 24 |
| 9 | | 5 | 120 |
| 10 | | 6 | 720 |
| 11 | | 7 | 5040 |
| 12 | | 8 | 40320 |

## 9. The FACTDOUBLE Function

- **Function Objective:**
  The **FACTDOUBLE function** returns the double factorial of a number.
- **Syntax:**
  *FACTDOUBLE(number)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The number to calculate the double factorial. |

- **Return Parameter:**
  The double factorial value of a given number.
- **FACTDOUBLE Function in Action:**

|  | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | Usage of FACTDOUBLE Function | |
| 3 | | | |
| 4 | | Number1 | Double Factorial |
| 5 | | 1 | =FACTDOUBLE(B5) |
| 6 | | 2 | 2 |
| 7 | | 3 | 3 |
| 8 | | 4 | 8 |
| 9 | | 5 | 15 |
| 10 | | 6 | 48 |
| 11 | | 7 | 105 |
| 12 | | 8 | 384 |

## 10. The LN Function

- **Function Objective:**
  The **LN function** returns the natural logarithm of a number.
- **Syntax:**
  *LN(number)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The number to calculate the natural logarithm. |

- **Return Parameter:**
  The natural logarithm of a given number.
- **LN Function in Action:**

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | Usage of LN Function | |
| 3 | | | |
| 4 | | **Number1** | **Natural Logarithm** |
| 5 | | 1 | =LN(B5) |
| 6 | | 2 | 0.693147181 |
| 7 | | 3 | 1.098612289 |
| 8 | | 4 | 1.386294361 |
| 9 | | 5 | 1.609437912 |
| 10 | | 6 | 1.791759469 |
| 11 | | 7 | 1.945910149 |
| 12 | | 8 | 2.079441542 |

## 11.  The LOG Function

- **Function Objective:**
  The **LOG function** returns the logarithm of a specific base.
- **Syntax:**
  *LOG(number, [base])*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The positive real number to calculate the logarithm. |
| base | Optional | The base of the logarithm. |

- **Return Parameter:**
  The logarithm of a specific base.
- **LOG Function in Action:**

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | Usage of LOG Function | |
| 3 | | | |
| 4 | | Number1 | Logarithm |
| 5 | | 1 | =LOG(B5,10) |
| 6 | | 2 | 0.301029996 |
| 7 | | 3 | 0.477121255 |
| 8 | | 4 | 0.602059991 |
| 9 | | 5 | 0.698970004 |
| 10 | | 6 | 0.77815125 |
| 11 | | 7 | 0.84509804 |
| 12 | | 8 | 0.903089987 |

## 12.  The MEDIAN Function

- **Function Objective:**
- The **MEDIAN function** calculates the median of a range of cells of numbers.
- **Syntax:**
  *MEDIAN(number1, [number2], ...)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number1 | Required | The first number to calculate the median. |
| number2 | Optional | The second number to calculate the median. |

- **Return Parameter:**
  The median of all the numbers in a range of cells.
- **MEDIAN Function in Action:**

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | Usage of MEDIAN Function | |
| 3 | | | | |
| 4 | | Number1 | Number2 | Median |
| 5 | | 34 | 27 | =MEDIAN(B5:C5) |
| 6 | | 33 | 88 | 60.5 |
| 7 | | 57 | 78 | 67.5 |
| 8 | | 61 | 33 | 47 |
| 9 | | 87 | 43 | 65 |
| 10 | | 53 | 93 | 73 |
| 11 | | 49 | 39 | 44 |
| 12 | | 45 | 100 | 72.5 |

## 13. The MROUND Function

- **Function Objective:**
  The **MROUND function** rounds off a number to the desired multiple.
- **Syntax:**
  *MROUND(number, multiple)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The fraction number that you want to round off. |
| *multiple* | Required | The number to which you want to round off your number to. |

- **Return Parameter:**
  Rounded off version of an input number.
- **MROUND Function in Action:**

Usage of MROUND Function

| Number1 | Rounded off |
|---|---|
| 34.33 | =MROUND(B5,2) |
| 3.53 | 4 |
| 5.77 | 6 |
| 6.561 | 6 |
| 8.567 | 8 |
| 5.733 | 6 |
| 4.656359 | 4 |
| 4.556 | 4 |

14. The POWER Function

- **Function Objective:**
  The **POWER function** calculates the number raised to a power.
- **Syntax:**
  *POWER(number, power)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number | Required | The base number to insert. |
| power | Required | The exponent to which the base number is raised. |

- **Return Parameter:**
  The result of a number raised to an exponent.
- **POWER Function in Action:**

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | Usage of POWER Function | | |
| 3 | | | | |
| 4 | | Number1 | Number2 | Result |
| 5 | | 2 | 1 | =POWER(B5,C5) |
| 6 | | 4 | 2 | 16 |
| 7 | | 6 | 3 | 216 |
| 8 | | 8 | 4 | 4096 |
| 9 | | 10 | 5 | 100000 |
| 10 | | 12 | 6 | 2985984 |
| 11 | | 14 | 7 | 105413504 |
| 12 | | 16 | 8 | 4294967296 |

## 15.   The QUOTIENT Function

- **Function Objective:**
  The **QUOTIENT function** returns the integer part of a division.
- **Syntax:**
  *QUOTIENT(numerator, denominator)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| numerator | Required | The dividend. |
| denominator | Required | The divisor. |

- **Return Parameter:**
  The integer part of a division.
- **QUOTIENT Function in Action:**

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | Usage of QUOTIENT Function | | |
| 3 | | | | |
| 4 | | Number1 | Number2 | Quotient |
| 5 | | 21 | 1 | =QUOTIENT(B5,C5) |
| 6 | | 43 | 2 | 21 |
| 7 | | 65 | 3 | 21 |
| 8 | | 81 | 4 | 20 |
| 9 | | 130 | 5 | 26 |
| 10 | | 123 | 6 | 20 |
| 11 | | 141 | 7 | 20 |
| 12 | | 163 | 8 | 20 |

16.   The SUMSQ Function

- **Function Objective:**
  The **SUMSQ function** returns the sum of the squares of the numbers.
- **Syntax:**
  *SUMSQ(number1, [number2], ...)*
- **Arguments Explanation:**

| ARGUMENTS | REQUIRED/OPTIONAL | EXPLANATION |
|---|---|---|
| number1 | Required | The first number to calculate the sum of the squares. |
| number2 | Optional | The second number to calculate the sum of the squares. |

- **Return Parameter:**
  The sum of the squares of the numbers.
- **SUMSQ Function in Action:**

| | Number1 | Number2 | Sum of Square |
|---|---|---|---|
| | 34 | 27 | =SUMSQ(B5:C5) |
| | 33 | 88 | 8833 |
| | 57 | 78 | 9333 |
| | 61 | 33 | 4810 |
| | 87 | 43 | 9418 |
| | 53 | 93 | 11458 |
| | 49 | 39 | 3922 |
| | 45 | 100 | 12025 |

Usage of SUMSQ Function

# Conclusion

To sum up, we have discussed 44 mathematical functions used in Excel. Please visit our website **Exceldemy** to explore more.