

Microsoft Excel

Module 26 - Use of Round, Round UP and Round DOWN Function in MS Excel

ROUND, ROUND UP and ROUND DOWN FUNCTION:

In Microsoft Excel, the **ROUND**, **ROUNDUP**, and **ROUNDDOWN** functions are used to modify the number of decimal places in a given number by rounding it to the nearest specified value. These functions are useful when you want to control how precise the numbers are displayed or used in calculations.

Here's a breakdown of each function:

1. **ROUND** Function

The **ROUND** function rounds a number to a specified number of digits. It rounds the number to the nearest value, with rounding up or down depending on the decimal part.

Formula:

=ROUND(number, num_digits)

- **number:** The number you want to round.
- **num_digits:** The number of digits you want to round the number to. This can be positive (for decimal places), zero (for whole numbers), or negative (to round to tens, hundreds, etc.).

Example:

- Rounding to Two Decimal Places

You can round a number to two decimal places using the **ROUND** function.

Example:

- Formula: =ROUND(5.678, 2)
- Result: **5.68**

Explanation: The number **5.678** is rounded to **5.68**, keeping two decimal places. Since the third decimal is **8**, the second decimal is rounded up.

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• Rounding to One Decimal Place

If you want to round a number to one decimal place:

Example:

- Formula: =ROUND(5.678, 1)
- Result: 5.7

Explanation: The number 5.678 is rounded to 5.7, as the second decimal is 7, and it rounds down the 8 to 7.

• Rounding to Nearest Whole Number

To round a number to the nearest whole number, use 0 for the number of decimal places.

Example:

- Formula: =ROUND(5.678, 0)
- Result: 6

Explanation: The number 5.678 is rounded to the nearest whole number, which is 6.

• Rounding to Tens or Hundreds (Negative Digits)

You can also round to the nearest ten, hundred, or larger number by using negative digits in the ROUND function.

Example 1: Round to the nearest ten

- Formula: =ROUND(1234, -1)
- Result: 1230

Explanation: The number 1234 is rounded to the nearest ten, which results in 1230.

Example 2: Round to the nearest hundred

- Formula: =ROUND(5678, -2)
- Result: 5700

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Explanation: The number 5678 is rounded to the nearest hundred, resulting in 5700.

- Rounding Negative Numbers

You can also use the ROUND function to round negative numbers.

Example:

- Formula: =ROUND(-12.345, 1)
- Result: -12.3

Explanation: The number -12.345 is rounded to -12.3, as the second decimal place is 4, so it stays at -12.3.

- Rounding a Large Number

For larger numbers, you can specify how many decimal places you want.

Example:

- Formula: =ROUND(123456.789, 3)
- Result: 123456.789

Explanation: The number 123456.789 is rounded to 123456.789, as it is already rounded to three decimal places. If you used a smaller number of decimal places (e.g., 2), it would round to 123456.79.

2. ROUNDUP Function

The ROUNDUP function rounds a number up away from zero, regardless of the decimal value. This ensures the number is always rounded up.

Syntax:

typescript

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=ROUNDUP(number, num_digits)

- **number**: The number you want to round.
- **num_digits**: The number of digits you want to round the number to (same as ROUND).

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Example:

- =ROUNDUP(5.123, 2) results in **5.13** (always rounds up).
- =ROUNDUP(5.123, 0) results in **6** (rounds up to the nearest whole number).
- =ROUNDUP(123.4, -1) results in **130** (rounds up to the nearest ten).

	A	B	C	D	E
1	Random Numbers	Round	Roundup	RoundDown	
2	92.45477919	92.5	92.5	92.4	
3	29.20190575	29.2	29.3	29.2	
4	3.489752499	3.5	3.5	3.4	
5	4.246246035	4.2	4.3	4.2	
6					

3. ROUNDDOWN Function

The **ROUNDDOWN** function rounds a number **down** toward zero, no matter what the decimal value is.

Syntax:

typescript

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=ROUNDDOWN(number, num_digits)

- **number:** The number you want to round.
- **num_digits:** The number of digits to round the number to (same as ROUND).

Example:

- =ROUNDDOWN(5.987, 2) results in **5.98**.
- =ROUNDDOWN(5.987, 0) results in **5**.
- =ROUNDDOWN(123.9, -1) results in **120** (rounds down to the nearest ten).

When to Use Them:

- **ROUND** is used when you want to round to the nearest value based on standard rounding rules (0.5 rounds up, less than 0.5 rounds down).

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- **ROUNDUP** is useful when you need to always round up, for example in financial calculations where you need to ensure you don't undercharge or underpay.
- **ROUNDDOWN** is helpful when you need to always round down, for example when calculating something like estimated costs or quantities where you want to avoid overestimating.

ASSIGNMENT

Number	Rounded Number
48.9833	48.98
47.377	47.38
34.87284	34.87
24.377645	24.38
34.982	34.98
45.87	45.87
37.78245	37.78
98.835	98.84
13.48735443	13.49
36.982432	36.98

TASKS:

From the above table find out the Round, Round UP and Round DOWN numbers of each numbers.