

# Displaying Two Decimal Places in Excel Without Rounding: A Tutorial Using the TRUNC Function

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The process of handling numerical data in spreadsheet applications often necessitates meticulous control over numerical precision, particularly in fields like finance, engineering, or scientific analysis. A frequent and critical requirement when working in [Microsoft Excel](#) is the ability to display values with a specific number of [decimal places](#), typically two, without inadvertently modifying the underlying numerical value through standard mathematical [rounding](#) conventions. While simple visual formatting changes can adjust the appearance of a number, these methods almost always result in automatic rounding, which can introduce small but cumulative errors if the displayed result is subsequently used in further complex calculations. To achieve a truly non-rounded representation--a process technically known as [truncation](#)--we must employ a dedicated, functional solution.

The most reliable and straightforward method available to display numbers with an exact number of decimal places, ensuring that no rounding adjustment takes place, is by utilizing the powerful, built-in **TRUNC** function. This function is specifically engineered to manage the removal of fractional parts of a number beyond a specified precision point. It achieves this by effectively discarding the trailing digits, rather than adjusting the last retained digit based on the conventional rules of mathematical rounding.

The fundamental syntax for applying this technique within [Microsoft Excel](#) is both concise and highly effective. If, for example, your objective is to truncate the numerical value currently held in cell **A2** so that it strictly shows only two decimal places, the appropriate and precise formula is demonstrated in the code block below. This functional approach ensures that the resulting number is mathematically accurate according to the strict rule of truncation.

```
=TRUNC(A2, 2)
```

This formula provides explicit instructions to [Microsoft Excel](#): evaluate the number located in the first argument (**A2**) and reduce its precision by discarding all digits that exceed the number specified in the second argument (**2**). Crucially, the **TRUNC** function does not analyze the magnitude of the third decimal place to determine whether the second decimal place should be rounded up or down; it simply performs a clean cut, removing all digits from the third place onward. For a practical illustration, if cell **A2** contains the value **12.48832**, executing this formula will yield the result **12.48**, unambiguously demonstrating the non-rounding behavior required for high-precision applications.

## The Challenge of Automatic Rounding in Excel

Prior to implementing the [truncation](#) method, it is essential to establish a clear understanding of why standard visual formatting tools frequently fail to satisfy the requirement of displaying non-rounded values. Many users initially attempt to control decimal precision using the visual formatting

options that are readily accessible on the application ribbon. While this action is intuitive for improving data readability, the visual adjustment of [decimal places](#) in [Microsoft Excel](#) affects only the presentation layer of the data; it does not alter the actual underlying numerical value stored and used for calculations within the cell.

When a user selects a range of cells and repeatedly clicks the **Decrease Decimal** icon, which is situated within the **Number** group on the **Home** tab of the top ribbon, the spreadsheet application applies standard mathematical [rounding](#) rules to the displayed number. This means that if the digit in the third decimal place is five or greater, the digit in the second decimal place is automatically rounded up. This standard behavior is generally acceptable and often desirable for routine display purposes, but it becomes fundamentally problematic when precise truncation is mandated, particularly in scenarios where the summation of the displayed values must match the sum of the underlying, strictly truncated values exactly.

Consider a large financial or engineering dataset where tiny fractional differences, accumulated consistently through mathematical rounding, could escalate into significant discrepancies in a final audit report or summary calculation. If an organization or methodology is legally obligated to display values based on an accounting rule that strictly mandates truncation rather than standard rounding, relying solely on the visual formatting controls will produce results that are mathematically incorrect relative to the required standard. It is precisely for these situations--where the displayed value must be the exact calculated value--that the **TRUNC** function must be employed, as it modifies the actual numerical content of the cell to the desired level of precision, rather than merely adjusting its visual appearance.

## Implementing the TRUNC Function for Precise Control

The [TRUNC function](#), short for truncate, serves as the definitive functional solution for displaying numerical figures with a fixed number of decimal places while explicitly avoiding any form of mathematical adjustment or rounding. Its primary operational goal is to remove the fractional component of a number, retaining only the integer portion or a user-specified quantity of decimal digits. This operation is fundamentally distinct from standard rounding, where the decision to increase the last retained digit is conditional upon the value of the next digit in the sequence.

The structure of the [TRUNC function](#) requires two arguments: `TRUNC(number, num_digits)`. The **number** argument is the specific value or cell reference you wish to truncate (e.g., **A2**). The **num\_digits** argument must be a positive integer, which specifies the exact precision required--that is, the count of decimal places you intend to retain. Setting **num\_digits** to **2** ensures that the resultant value is shown precisely up to the hundredths place, with all subsequent digits being immediately discarded without evaluation.

Understanding the mathematical mechanics is critical: [truncation](#) always works by moving the

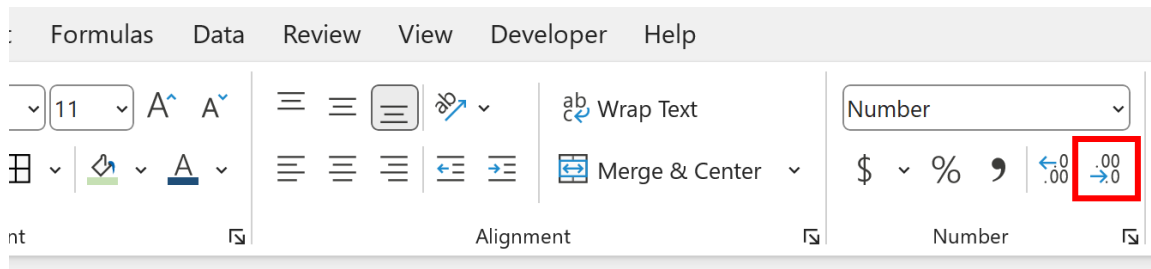
number closer to zero on the number line. For positive numbers, this effect is functionally equivalent to rounding down. However, for negative numbers, **TRUNC** behaves distinctly from a simple rounding down operation, as it consistently removes the fractional part, pushing the value toward zero (e.g., **-12.488** truncates to **-12.48**). Since rounding down would yield **-12.49**, **TRUNC** provides the non-rounding solution for both positive and negative values, ensuring precise control over decimal presentation.

## Practical Application: Step-by-Step Example

To clearly illustrate the critical necessity and verifiable efficacy of the **TRUNC** function, we will walk through a practical example using a list of values that inherently possess varying degrees of decimal precision. Our starting point involves raw data housed within Column A of our spreadsheet, as visualized below:

	A	B	C	D	E
1	<b>Values</b>				
2	12.48832				
3	15.30092				
4	16.73482				
5	20.23932				
6	21.02854				
7	15.19332				
8	12.13384				
9	10.15567				
10					
11					
12					
13					
14					
15					
16					

Our primary objective is to present every value in this list using exactly two [decimal places](#), while strictly prohibiting any automatic [rounding](#) that might otherwise occur. We first need to examine the typical pitfalls associated with standard visual formatting tools. A common, though erroneous, initial attempt to achieve this goal involves highlighting the data range **A2:A9** and then utilizing the visual control designed to decrease the displayed decimal places. This action is performed by repeatedly clicking the **Decrease Decimal** icon, which is located conveniently within the **Number** group on the **Home** tab of the top ribbon, as captured in the interface snapshot below:



If we continue to click this icon until only two decimals are visually presented for each number, the resulting display will appear as follows:

	A	B	C	D	E
1	<b>Values</b>				
2	12.49				
3	15.30				
4	16.73				
5	20.24				
6	21.03				
7	15.19				
8	12.13				
9	10.16				
10					
11					
12					
13					
14					

The critical issue revealed here is that the decimal values have been automatically **rounded** to the nearest hundredth. For instance, the original value of **12.48832** has been mathematically rounded up to **12.49** because the third decimal digit (8) is greater than 5. If your reporting standards demand that the result must strictly be **12.48**, this visual formatting method is unsuitable because it provides an inaccurate and rounded result relative to the precise requirement of [truncation](#).

### Implementing the TRUNC Function for Precise Results

To ensure that we display only two decimal places without the influence of any rounding effect, we must introduce the **TRUNC** function into a new, dedicated column. This allows us to perform the

calculation and display the truly truncated value, which is essential for mathematical integrity. We begin this decisive process by typing the following formula into cell **B2**, ensuring it references the original value housed in **A2**:

**=TRUNC(A2, 2)**

Immediately after entering the formula correctly in the first row, you can efficiently apply this calculation to the entire dataset below it. Simply click on cell **B2** and then drag the formula down using the fill handle (the small square at the bottom right corner) to copy it to every remaining cell in column B, corresponding to the values in column A. This action automatically and correctly adjusts the cell reference (A2 becomes A3, A4, and so on) for each row, ensuring that the precise truncation calculation is performed across the whole range of data.

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D
1	<b>Values</b>	<b>Values with 2 Decimals</b>		
2	12.48832	12.48		
3	15.30092	15.30		
4	16.73482	16.73		
5	20.23932	20.23		
6	21.02854	21.02		
7	15.19332	15.19		
8	12.13384	12.13		
9	10.15567	10.15		
10				
11				
12				
13				
14				
15				

Upon reviewing the resulting values generated in column B, you will immediately notice that each number is now displayed with precisely two decimal places, and critically, no rounding has been applied. This column provides the accurate, truncated representation of the data that is specifically required for applications where precision mandates the strict exclusion of standard rounding rules.

### Why TRUNC Differs from Standard Rounding

It is crucial for advanced spreadsheet users to grasp the deep mathematical distinction between

[truncation](#) and standard rounding. Standard mathematical [rounding](#), which is inherently employed by functions like `ROUND` and by the default visual formatting, aims mathematically to find the nearest number at the specified level of precision. This is the reason why **12.48832** is rounded up to **12.49**-because 12.49 is numerically closer to the original value than 12.48 is.

In sharp contrast, truncation, as executed by the [TRUNC function](#), simply discards the excess digits immediately. It does not perform any evaluation of the magnitude of the discarded digits to influence or adjust the remaining ones. This means that **12.48832** is definitively reduced to **12.48**, regardless of whether the discarded digit (8) is large or small. The mathematical consequence of this operation is to move the value toward zero, a behavior that is absolutely essential when the calculation methodology requires the strict removal of precision rather than an adjustment to the nearest approximation.

This fundamental distinction becomes especially important when calculating the sum of large datasets. If hundreds of individual values are uniformly rounded slightly upward, the aggregate sum will become inflated when compared to the sum of the truly truncated values. By consistently using **TRUNC**, you ensure that the calculated value residing in the cell is exactly identical to the value displayed, which effectively prevents calculation errors downstream. For professionals needing to maintain the highest levels of accounting fidelity or engineering accuracy, the deliberate and functional use of **TRUNC** over standard formatting or the `ROUND` function is non-negotiable.

## Additional Resources and Further Considerations

The application of the **TRUNC** function provides a powerful, reliable means of controlling numerical precision in any non-rounding environment within [Microsoft Excel](#). Reviewing the results from our detailed example clearly illustrates this crucial benefit:

**12.48832** is shown as **12.48** (instead of the rounded result 12.49)

**15.30092** is shown as **15.30** (which, in this instance, matches the rounded result 15.30)

**16.73482** is shown as **16.73** (which, in this instance, matches the rounded result 16.73)

**14.56701** is shown as **14.56** (instead of the rounded result 14.57)

It is important to notice that while some values (such as 15.30092 and 16.73482) produce the same result whether they are rounded or truncated to two [decimal places](#), the **TRUNC** function guarantees the desired non-rounding behavior for all inputs, thereby ensuring mathematical consistency and integrity across the entirety of the dataset.

For users exploring related numerical manipulation techniques, the [TRUNC function](#) is often compared to the `INT` function. While both functions perform an operation akin to truncation, `INT` is specifically designed to round numbers down to the nearest whole integer and does not allow for specification of the decimal precision. In contrast, **TRUNC** offers explicit control over the number of

decimal places to be retained, making it the most flexible and preferred choice when precision must be managed beyond the integer level.

The following resources explain how to perform other common operations in Excel: