

Learn How to Use TRUNC and INT Functions to Remove Decimal Digits in Excel

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Introduction to Precise Numeric Truncation in Excel

In the realm of [data analysis](#), the precise manipulation of numerical values is often paramount. We frequently encounter [floating-point numbers](#) that carry excessive or unnecessary precision, complicating reporting or integration into systems requiring specific data types. When working within [Microsoft Excel](#), a common requirement is the removal of digits that follow the [decimal place](#). This process is essential when preparing datasets for legacy systems that only accept [integer](#) inputs, or simply when seeking to enhance the visual clarity of large financial or scientific datasets. It is vital to recognize that simply altering the cell's format to display zero decimal places does not change the number's true underlying value; specific mathematical functions must be employed to achieve true truncation.

The concept of **truncation** fundamentally involves cutting off the fractional component of a number, retaining only the integer part. This mechanical removal differs significantly from traditional rounding methods. Standard mathematical rounding involves adjusting the integer up or down based on the magnitude of the discarded fractional portion. For example, if we round 4.9, the result is 5, as the fractional part is greater than or equal to 0.5. Conversely, if we apply truncation to 4.9, the result is strictly 4, regardless of the value following the decimal point. [Microsoft Excel](#) offers robust, built-in capabilities to handle this exact requirement with efficiency and precision.

To effectively achieve decimal removal, [Microsoft Excel](#) provides two primary, yet mathematically distinct, functions: the [TRUNC function](#) and the [INT function](#). While these functions produce identical outcomes when applied to positive numbers, their behavior diverges when processing [negative numbers](#). This difference is rooted in their underlying mathematical definitions--one moves toward zero, and the other rounds down toward negative infinity. Therefore, selecting the appropriate function depends entirely on the specific mathematical outcome required by your analysis or business logic. We will delve into both techniques, providing clear instructions and practical examples for implementation.

Method 1: Achieving Exact Truncation with the TRUNC Function

The [TRUNC function](#), an abbreviation of Truncate, is generally regarded as the most direct path to removing decimal places because its operation strictly involves discarding the fractional component without any influence from rounding rules. The function accepts two arguments: the number you wish to truncate, and an optional argument specifying how many decimal digits you wish to retain. When the optional argument is omitted, [TRUNC](#) defaults to zero decimal places, thereby isolating and returning only the integer component of the original value.

Mathematically, the [TRUNC function](#) is defined as moving the number closer to zero. This predictable behavior is consistent regardless of the number's sign. For instance, if we process a positive number like 5.99, TRUNC moves toward zero, yielding 5. Similarly, when applied to a

[negative number](#) such as -5.99, it also moves toward zero, returning -5. This property makes [TRUNC](#) the preferred function when the sole objective is the exact removal of the fractional part, maintaining the magnitude of the integer component without any mathematical rounding or flooring.

To implement the TRUNC function for removing all digits after the [decimal place](#) for a numerical value residing in cell **B2**, you would employ the following concise syntax. Note the omission of the optional second argument, which implicitly instructs [Microsoft Excel](#) to retain zero decimal places:

=TRUNC(B2)

Demonstrating TRUNC with a Mixed Dataset (Example 1)

To effectively illustrate the practical application of the TRUNC function, let us examine a sample dataset. Column B contains a list of varied numerical values that require truncation. Our objective is to calculate and display the resulting integer values in the adjacent Column C, providing a side-by-side comparison of the raw and processed data.

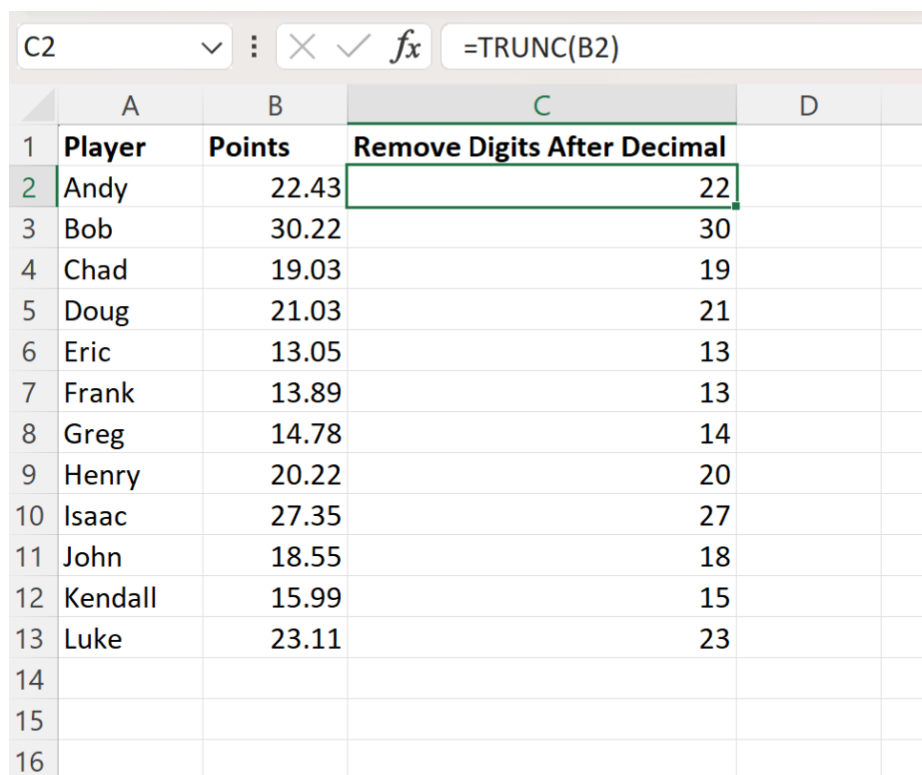
The initial setup presents the raw data in Column B, which includes both positive and [negative numbers](#), each featuring different levels of precision following the [decimal place](#). This mixed dataset is ideal for demonstrating the function's consistent behavior toward zero.

	A	B	C	D	E
1	Player	Points			
2	Andy	22.43			
3	Bob	30.22			
4	Chad	19.03			
5	Doug	21.03			
6	Eric	13.05			
7	Frank	13.89			
8	Greg	14.78			
9	Henry	20.22			
10	Isaac	27.35			
11	John	18.55			
12	Kendall	15.99			
13	Luke	23.11			
14					
15					
16					

We initiate the process by entering the required formula into cell **C2**, targeting the specific value located in **B2**. This operation explicitly commands Excel to isolate and extract only the integer portion of the specified number:

=TRUNC(B2)

Once the formula is accurately placed in **C2**, we can efficiently apply this calculation across the entire dataset using the fill handle. By clicking and dragging the small square at the bottom-right corner of the cell, the formula automatically adjusts its cell reference for each subsequent row (e.g., **C3** references **B3**, **C4** references **B4**, and so forth). The resulting output, shown below, clearly verifies the intended effect of the TRUNC function on every data point:



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D
1	Player	Points	Remove Digits After Decimal	
2	Andy	22.43	22	
3	Bob	30.22	30	
4	Chad	19.03	19	
5	Doug	21.03	21	
6	Eric	13.05	13	
7	Frank	13.89	13	
8	Greg	14.78	14	
9	Henry	20.22	20	
10	Isaac	27.35	27	
11	John	18.55	18	
12	Kendall	15.99	15	
13	Luke	23.11	23	
14				
15				
16				

As is evident in the calculated results of Column C, every number has been precisely truncated. This means that all fractional digits following the decimal point have been successfully discarded, resulting in the pure integer part of the original number. This methodology provides a mathematically sound approach for data cleaning and preparation tasks where strict truncation is necessary.

Method 2: Utilizing the INT Function for Integer Conversion

The second potent function available in [Microsoft Excel](#) for the purpose of removing the fractional

component of a number is the [INT function](#), which stands for Integer. While its ultimate goal--to yield an integer--is similar to TRUNC, the [INT function](#) operates based on a distinct mathematical principle: it rounds a number down to the nearest integer. This subtle yet significant difference becomes crucial exclusively when analyzing [negative numbers](#).

For any given positive number, the operation of rounding down to the nearest integer is functionally identical to simply truncating the [decimal place](#). For example, if we test 4.7, both INT(4.7) and TRUNC(4.7) will accurately return the value 4. Consequently, when your data exclusively consists of positive data points, you have the flexibility to use either the [TRUNC function](#) or the [INT function](#) interchangeably, as they will produce the same output.

However, the mathematical definition of rounding down mandates movement toward negative infinity. This is the exact point where the results of the two functions diverge. When the [INT function](#) is applied to a negative number, say -4.7, it rounds down to the nearest integer, resulting in -5. In sharp contrast, TRUNC(-4.7) yields -4, because its directive is to move toward zero. Grasping this directional disparity is fundamental for selecting the correct function based on the required mathematical context for your spreadsheet calculations.

The necessary syntax for employing the [INT function](#) to process the number located in cell **B2** is straightforward. It requires only the single argument, which is the reference to the cell containing the numerical value:

```
=INT(B2)
```

Practical Application of INT on Positive Data (Example 2)

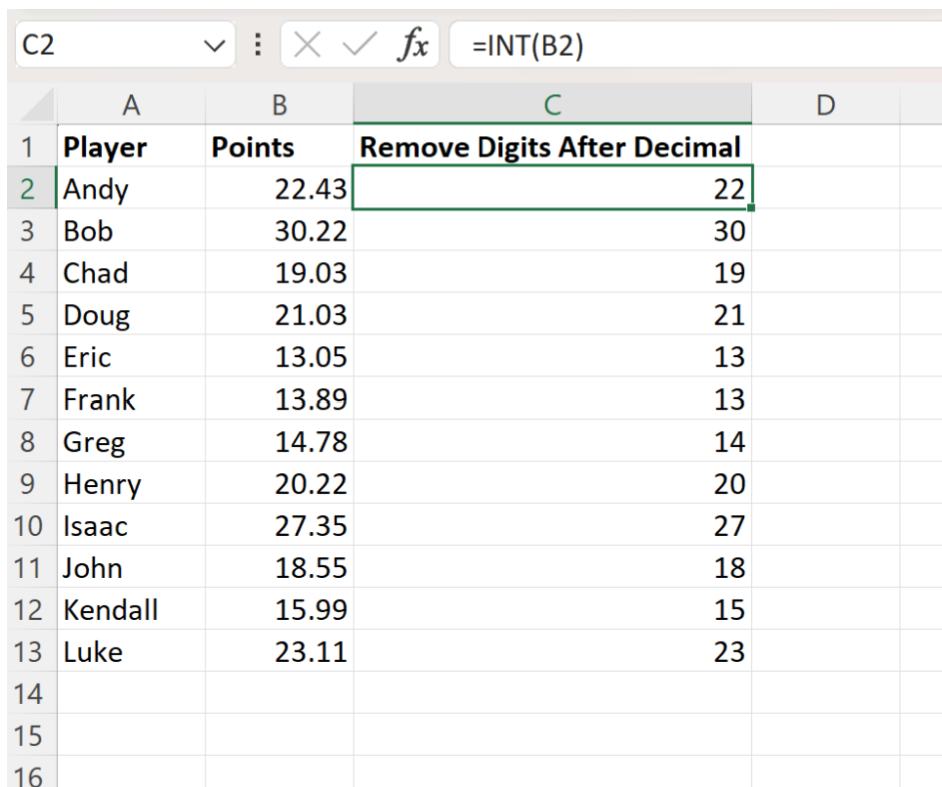
We now utilize the exact same sample dataset previously analyzed in the TRUNC example, but this time we apply the [INT function](#), starting the calculation in cell **C2**. This direct application allows for an immediate comparison of the outputs generated by the two functions on a dataset that primarily features positive values.

We input the following formula into cell **C2**. This command instructs [Microsoft Excel](#) to determine the largest integer less than or equal to the value stored in cell **B2**, effectively removing all digits that follow the [decimal place](#):

```
=INT(B2)
```

Following the established procedure, we utilize the fill handle to propagate this formula down Column C, applying the INT calculation to every data point in Column B. The resulting visual output, displayed below, reveals results that are mathematically identical to the outcome achieved

earlier using the [TRUNC function](#), highlighting the functional equivalence for positive numbers:



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D
1	Player	Points	Remove Digits After Decimal	
2	Andy	22.43	22	
3	Bob	30.22	30	
4	Chad	19.03	19	
5	Doug	21.03	21	
6	Eric	13.05	13	
7	Frank	13.89	13	
8	Greg	14.78	14	
9	Henry	20.22	20	
10	Isaac	27.35	27	
11	John	18.55	18	
12	Kendall	15.99	15	
13	Luke	23.11	23	
14				
15				
16				

The formula bar at the top shows the formula `=INT(B2)` in cell C2.

As demonstrated, every cell in Column C accurately returns the integer portion of the corresponding number in Column B. Since this specific dataset contains only positive numbers, the results generated by the [INT function](#) perfectly match those obtained using the [TRUNC function](#). This confirms that for positive data points, both methods are equally valid for achieving decimal precision removal.

Comparing TRUNC vs. INT: Key Mathematical Distinctions

Although the [TRUNC function](#) and the [INT function](#) are functionally identical when dealing with all positive numbers, comprehending their subtle mathematical differences is essential for developing robust and reliable spreadsheet models, particularly those involving financial or physical data that may contain [negative numbers](#). The fundamental divergence lies in the mathematical direction they take: movement toward zero versus movement toward negative infinity.

The TRUNC function executes **true truncation**; it performs a mechanical removal of the fractional part, invariably resulting in the output moving closer to zero. Conversely, the INT function implements a mathematical **'floor' operation**, which dictates that the number is always rounded down to the nearest integer, thus pushing the result toward negative infinity. This critical distinction is best visualized through a simple comparison of how each function handles positive and negative

inputs:

Positive Example (Identical Results):

$\text{TRUNC}(4.1) = 4$

$\text{INT}(4.1) = 4$

Negative Example (Divergent Results):

$\text{TRUNC}(-4.1) = -4$ (Result moves toward zero)

$\text{INT}(-4.1) = -5$ (Result rounds down, moves toward negative infinity)

If your analysis requires the strict discarding of the [decimal place](#) without any rounding influence whatsoever, TRUNC is the mathematically precise and correct choice. However, if your requirement involves implementing a systematic 'floor' calculation--where results must consistently be rounded down (a necessity in specific mathematical modeling or inventory management calculations)--then the INT function is the preferred tool. For typical data cleansing scenarios involving only positive values, either function offers a sufficient solution.

Further Resources for Data Manipulation in Excel

Mastering data manipulation techniques in [Microsoft Excel](#) extends beyond simple truncation. Related functions exist to address explicit rounding needs, including rounding up, rounding down, and controlling decimal precision in a more controlled fashion. For instance, if standard mathematical rounding is required--where 4.5 rounds to 5--you would utilize the **ROUND** function. Alternatively, the **ROUNDUP** and **ROUNDDOWN** functions provide explicit control over the direction of the rounding operation, forcing results away from or toward zero, respectively.

To significantly deepen your understanding of these critical Excel capabilities, it is highly recommended to consult the official documentation provided directly by Microsoft. These authoritative resources offer comprehensive syntax details, outline functional limitations, and provide examples of advanced usage scenarios for every function, ensuring you use them correctly in complex spreadsheet environments.

For detailed and reliable information on the specific functions discussed in this guide, please refer to the following resources:

Complete documentation for the **TRUNC** function in Excel.

Complete documentation for the **INT** function in Excel.

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