



Introduction

This page describes a number of worksheet formulas that work with strings of text.

Counting The Number Of Specific Characters Or Strings Of Characters In A Cell

The following formula can be used to count the number of times that the character or string of characters in cell **B1** occurs in the string in cell **A1**. For example, if **A1** contains the string **abcXdxexf**, and cell **B1** contains the character **x**, the formula will return 3, since there are 3 'x' characters in **A1**. This formula does not distinguish between upper and lower case. Cell **B1** may contain multiple characters. In this case, the formula counts the number of times that string occurs in cell **A1**, not the number of times each individual characters in cell **B1** occur. For example, if **B1** contains **abc**, the formula counts the number of times the string **abc** occurs in cell **A1**, not the number of times the individual characters **a**, **b**, and **c** occur in cell **A1**.

```
=IF(LEN(B1)=0,0,(LEN(A1)-LEN(SUBSTITUTE(A1,B1,"")))/LEN(B1))
```

If **B1** is empty, the formula returns 0. If you want to distinguish between upper and lower case, remove the **UPPER** functions from the formula. That is,

```
=IF(LEN(B1)=0,0,(LEN(A1)-LEN(SUBSTITUTE(A1,B1,"")))/LEN(B1))
```

Counting The Number Of Letters In A Cell

The following formula counts the number of letters (A to Z, in either upper or lower case) in cell **A1**.

```
=IF(LEN(A1)=0,0,SUM((CODE("A")<=CODE(UPPER(MID(A1,ROW(INDIRECT("A1:A"&LEN(A1))),1))))*(CODE("A")<=CODE(UPPER(MID(A1,ROW(INDIRECT("A1:A"&LEN(A1))),1))))))
```

This formula is an *array formulas* so you must press **CTRL SHIFT ENTER** rather than just **ENTER** when you first enter the formula and whenever you edit it later. If you do this properly, Excel will display the formula in the formula bar enclosed in curly braces { }. See the [Array Formulas](#) page for more information about array formulas. If **A1** is empty, the result is 0.

Counting The Number Of Digits In A Cell

The following formula counts the number of digits (0 to 9) in cell **A1**.

```
=IF(LEN(A1)=0,0,SUM((CODE("0")<=CODE(MID(A1,ROW(INDIRECT("A1:A"&LEN(A1))),1)))*(CODE("9")>=CODE(MID(A1,ROW(INDIRECT("A1:A"&LEN(A1))),1))))))
```

This is an array formula so you must enter it with **CTRL SHIFT ENTER** rather than just **ENTER**. If cell **A1** is empty, the formula returns 0.

Position Of First Digit In A String

This formula will return the position of the first digit (0 - 9) in the string in **A1**.

```
=IF(LEN(A1)=0,0,MIN(IF(1*ISNUMBER(1*MID(A1,ROW(INDIRECT("A1:A"&LEN(A1))),1)),ROW(INDIRECT("A1:A"&LEN(A1))),LEN(A1)+1))*OR(ISNUMBER(1*LEFT(A1,1)),ISNUMBER(1*RIGHT(A1,1))))
```

This is an array formula so you must enter it with **CTRL SHIFT ENTER** rather than just **ENTER**.

Position Of First Non-Digit In A String

This formula will return the position of the first non-numeric character in the string in cell **A1**.

```
=IF(LEN(A1)=0,0,MIN(IF(1*ISNUMBER(1*MID(A1,ROW(INDIRECT("A1:A"&LEN(A1))),1))=0,ROW(INDIRECT("A1:A"&LEN(A1))),LEN(A1)+1))*(ISNUMBER(A1)=FALSE))
```

This is an array formula so you must enter it with **CTRL SHIFT ENTER** rather than just **ENTER**.

Position Of The Last Occurrence Of A Character In A String

The following formula will return the position of the last occurrence of the character in cell **B1** in the string in cell **A1**.

```
=MAX ( ( MID ( A1 , ROW ( INDIRECT ( "A1:A"&LEN ( A1 ) ) ) , 1 ) = B1 ) * ROW ( INDIRECT ( "A1:A"&LEN ( A1 ) ) ) )
```

This formula does not distinguish between upper and lower case. If you want to make this distinction, use the formula

```
=MAX ( ( EXACT ( MID ( A1 , ROW ( INDIRECT ( "A1:A"&LEN ( A1 ) ) ) , 1 ) , B1 ) ) * ROW ( INDIRECT ( "A1:A"&LEN ( A1 ) ) ) )
```

This is an array formula, so you must press **CTRL SHIFT ENTER** rather than just **ENTER**. If cell **B1** is empty, the result is 0.

Counting The Number Of Words In A Cell

The following formula will return the number of words in a cell. A word is considered by be a string of characters delimited by spaces. Other punctuation characters are not considered.

```
=IF ( LEN ( TRIM ( A1 ) ) = 0 , 0 , LEN ( TRIM ( A1 ) ) - LEN ( SUBSTITUTE ( TRIM ( A1 ) , " " , "" ) ) + 1 )
```

String Concatenation

You can combine two string into a single string by using either the **CONCATENATE** function or the **&** operator. Unfortunately, neither of these can be used in an array formula to selectively build up a result string based on other criteria. See [String Concatenation For Array Formulas](#) for a VBA function that can be used in an array formula to build a string based on selection criteria.

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Created by Chip Pearson at Pearson Software Consulting, LLC
 Email: chip@cpearson.com Before emailing me, please read [this page](#).
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