Date & Time Functions

1. **DATE() :** Date function converts a supplied year, month and day into an Excel date.

The syntax of the function is:

**DATE( year, month, day )**

where the year, month and day arguments are integers representing the year, month and day of the required date.

## Date Function Examples

Column D of the following spreadsheet shows the Date function applied to different sets of values.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Formulas:   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **A** | **B** | **C** | **D** | | **1** | Day | Month | Year | Date | | **2** |  |  |  | =DATE( 2001, 1, 2 ) | | **3** | 31 | 5 | 1998 | =DATE( C3, B3, A3 ) | | **4** | 21 | 5 | 1984 | =DATE( C4, B4, A4 ) | | **5** | 9 | 1 | 2012 | =DATE( C5, B5, A5 ) | | Results:   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **A** | **B** | **C** | **D** | | **1** | Day | Month | Year | Date | | **2** |  |  |  | 02-Jan-2001 | | **3** | 31 | 5 | 1998 | 31-May-1998 | | **4** | 21 | 5 | 1984 | 21-May-1984 | | **5** | 9 | 1 | 2012 | 09-Jan-2012 | |

**2. Time() :** The Excel Time function accepts three integer arguments representing hours, minutes and seconds, and returns an Excel time.

I.e. the function returns the decimal value that represents the time in Excel.

The syntax of the Time function is:

**TIME( hour, minute, second )**

where the hour, minute and second arguments are integer values representing the hour, minute and second parts of the required time.

If the resulting time is negative (e.g. if the supplied hour is < 0), the Time function returns the #NUM! error.

## Time Function Examples

Column E of the following spreadsheet shows three examples of the Excel Time function:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Formulas:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | **A** | **B** | **C** | **D** | **E** | | **1** | Hrs | Mins | Secs |  | Time | | **2** |  |  |  |  | =TIME( 5, 44, 32 ) | | **3** | 5 | 21 | 55 |  | =TIME( A4, B4, C4 ) | | **4** | 0 | 0 | 73 |  | =TIME( A5, B5, C5 ) | | Results:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | **A** | **B** | **C** | **D** | **E** | | **1** | Hrs | Mins | Secs |  | Time | | **2** |  |  |  |  | 05:44:32 | | **3** | 5 | 21 | 55 |  | 05:21:55 | | **4** | 0 | 0 | 73 |  | 00:01:13 | |
|  |  |

**3. DateValue()** : The Excel Datevalue function converts a text representation of a date into an Excel date.

The syntax of the Datevalue function is:

**DATEVALUE( date\_text )**

where the date\_text argument is a text string representing a date.

## Datevalue Function Examples

In the following spreadsheet, the Excel Datevalue function is used to return a date serial number for five different text representations of dates:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Formulas:   |  |  | | --- | --- | |  | **A** | | **1** | =DATEVALUE( "01/01/2016" ) | | **2** | =DATEVALUE( "01/01/16" ) | | **3** | =DATEVALUE( "01/01" ) | | **4** | =DATEVALUE( "01/01/29" ) | | **5** | =DATEVALUE( "01/01/30" ) | | Results:   |  |  |  | | --- | --- | --- | |  | **A** | **B** | | **1** | 42005 | - represents the date 01/01/2016 | | **2** | 42005 | - represents the date 01/01/2016 | | **3** | 42005 | - represents the date 01/01/2016 | | **4** | 47119 | - represents the date 01/01/2029 | | **5** | 10959 | - represents the date 01/01/1930 | |

**4. Timevalue() :** Timevalue function converts a text representation of a time, into an Excel time.

The syntax of the Timevalue function is:

**TIMEVALUE( time\_text )**

where the time\_text argument is a text string representing a time. Within this text string, the hours, minutes and seconds should be separated by colons.

## Timevalue Function Examples

The following spreadsheet shows the Excel Timevalue function used to convert text representations of times into decimal values that can be understood as times in Excel.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Formulas:   |  |  | | --- | --- | |  | **A** | | **1** | =TIMEVALUE( "2:23 am" ) | | **2** | =TIMEVALUE( "2:23 pm" ) | | **3** | =TIMEVALUE( "14:23:00" ) | | **4** | =TIMEVALUE( "2:23" ) | | **5** | =TIMEVALUE( "00:02:23" ) | | **6** | =TIMEVALUE( "01/01/2011 02:23" ) | | Results:   |  |  |  | | --- | --- | --- | |  | **A** | **B** | | **1** | 0.099305556 | - represents the time 02:23:00 | | **2** | 0.599305556 | - represents the time 14:23:00 | | **3** | 0.599305556 | - represents the time 14:23:00 | | **4** | 0.099305556 | - represents the time 02:23:00 | | **5** | 0.001655093 | - represents the time 00:02:23 | | **6** | 0.099305556 | - represents the time 02:23:00 | |

**5. Now() :**  NOW function returns the current date and time. The function receives no arguments and therefore, the function syntax is:

**NOW()**

The NOW function updates every time your Excel worksheet is refreshed, and so any cells containing the function will be continually changing.

The following example shows a simple use of the NOW function, run at 0840 hrs on 8th August 2015

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Formula:   |  |  | | --- | --- | |  | **A** | | **1** | =NOW() | | Result:   |  |  | | --- | --- | |  | **A** | | **1** | 08/08/2015 08:40 | |

**6. Today() :** The Excel Today function returns the current date. The function has no arguments and therefore, the syntax of the function is simply:

**TODAY()**

### Example 1

The following spreadsheet shows a call to the Excel Today function, which was made on 1st September 2015.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Formula:   |  |  | | --- | --- | |  | **A** | | **1** | =TODAY() | | Result:   |  |  | | --- | --- | |  | **A** | | **1** | 01-Sep-2015 | |

**7. Hour() :** HOUR function returns an integer representing the hour component of a supplied Excel time.

The syntax of the function is:

**HOUR( serial\_number )**

where the serial\_number argument is the time from which you want to extract the hour component. This may be entered to the function as either:

In column B of the following spreadsheet, the Excel Hour function is used to extract the hour from several different supplied times.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Formulas:   |  |  |  | | --- | --- | --- | |  | **A** | **B** | | **1** |  | =HOUR("13:00:55") | | **2** |  | =HOUR("1:00 PM") | | **3** | 13:00:55 | =HOUR( A3 ) | | **4** | 08:32:55 | =HOUR( A4 ) | | **5** | 29:11:22 | =HOUR( A5 ) | | **6** | 12/09/2015 08:55 | =HOUR( A6 ) | | Results:   |  |  |  | | --- | --- | --- | |  | **A** | **B** | | **1** |  | 13 | | **2** |  | 13 | | **3** | 13:00:55 | 13 | | **4** | 08:32:55 | 8 | | **5** | 29:11:22 | 5 | | **6** | 12/09/2015 08:55 | 8 | |

**8. Minute() :** Minute function returns an integer representing the minute component of a supplied Excel time.

The syntax of the function is:

**MINUTE( serial\_number )**

where the serial\_number argument is the time from which you want to extract the minute component. This may be supplied to the function as either:

* A decimal (serial number) representation of an Excel time;
* A text representation of a time;
* A reference to a cell containing a time;
* A time value returned from another Excel function or formula.

Note that, if the serial\_number argument contains a date *and* time, the Minute function ignores the date part of the argument.

**9. Second() :** Second function returns an integer representing the second component of a supplied Excel time.

The syntax of the function is:

**SECOND( serial\_number )**

where the serial\_number argument is the time from which you want to extract the second component. This may be supplied to the function as either:

* A decimal (serial number) representation of an Excel time;
* A text representation of a time;
* A reference to a cell containing a time;
* A time value returned from another Excel function or formula.

Note that, if the serial\_number argument is composed of a date *and* time, the date part of the argument is ignored by the Second function.

## Second Function Examples

Four examples of the Excel Second function are shown in column B of the following spreadsheet.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Formulas:   |  |  |  | | --- | --- | --- | |  | **A** | **B** | | **1** |  | =SECOND( "13:35:55" ) | | **2** | 13:35:55 | =SECOND( A2 ) | | **3** | 08:17:00 | =SECOND( A3 ) | | **4** | 12/09/2011 08:17:23 | =SECOND( A4 ) | | Results:   |  |  |  | | --- | --- | --- | |  | **A** | **B** | | **1** |  | 55 | | **2** | 13:35:55 | 55 | | **3** | 08:17:00 | 0 | | **4** | 12/09/2011 08:17:23 | 23 | |

**10. Year** =YEAR(serial\_number, return\_type)

Returns a value of the year for a specific date. The serial\_number argument is a date value (or reference to one).  
**Example: YEAR("3/15/2019") equals 2019.**

**11. Month** =MONTH(serial\_number, return\_type)

Returns a value of the month for a specific date. The serial\_number argument is a date value (or reference to one).  
**Example: MONTH("3/15/2019") equals 3.**

**12. Day** =DAY(serial\_number, return\_type) Returns a value of the day for a specific date. The serial\_number argument is a date value (or reference to one). **Example: DAY("3/15/2019") equals 15.**

**13. Days() :** Days function returns the number of days between two supplied dates.

Note: the Days function was only introduced in Excel 2013, so is not available in earlier versions of Excel.

The syntax of the function is:

**DAYS( end\_date, start\_date )**

where the end\_date and start\_date arguments are valid Excel dates.

## Excel Days Function Example

Cell B1 of the following spreadsheet shows a simple example of the Excel Days function.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Formula:   |  |  |  | | --- | --- | --- | |  | **A** | **B** | | **1** | 01/01/2015 | =DAYS( A2, A1 ) | | **2** | 02/02/2015 |  | | Result:   |  |  |  | | --- | --- | --- | |  | **A** | **B** | | **1** | 01/01/2015 | 32 | | **2** | 02/02/2015 |  | |

The Days function in cell B1 of the above example spreadsheet returns the value **32**.

I.e. there are **32** days between the two dates 01/01/2015 and 02/02/2015.

**14. Days360() :** Days360 function returns the number of days between 2 dates, based on a 360-day year (12 x 30 months).

The syntax of the function is:

**DAYS360( start\_date, end\_date, [method] )**

## Excel Days360 Function Examples

The spreadsheet below shows four simple examples of the Excel Days360 function.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Formulas:   |  |  |  | | --- | --- | --- | |  | **A** | **B** | | **1** | 01-Jan-2015 | =DAYS360( A1, A2 ) | | **2** | 31-Jan-2015 | =DAYS360( A1, A2, TRUE ) | | **3** | 01-Feb-2015 | =DAYS360( A1, A3, FALSE ) | | **4** |  | =DAYS360( A3, DATE( 2015, 2, 2 ) ) | | Results:   |  |  |  | | --- | --- | --- | |  | **A** | **B** | | **1** | 01-Jan-2015 | 30 | | **2** | 31-Jan-2015 | 29 | | **3** | 01-Feb-2015 | 30 | | **4** |  | 1 | |