

Date, Time, and Financial Formula Techniques in Excel

Handling dates and performing financial calculations are everyday tasks for accounting and tax professionals. This chapter covers how Excel stores and calculates date and time values, along with the common pitfalls to watch out for. It then moves into financial formulas, introducing the built-in functions Excel provides for calculating loan payments, interest, depreciation, and more. Whether you're building amortization schedules or projecting cash flows, these tools can significantly streamline your analytical work.

CREDIT HOURS 2 | FIELD OF STUDY BUSINESS | EXAM QUESTIONS 10

[Start Course ↓](#)[Final Exam Copy ↓](#)

LEARNING ASSIGNMENTS AND OBJECTIVES

Assignment

- Study the full course materials included here.
- Complete the review questions after each chapter.
- Answer 10 final exam questions.
- Final exam is scored immediately, 70% or better passes.
- Certificate of completion is available in your account.
- Failed exams can be retaken free of charge.

Course Objectives

- Recognize how to best use the Date and Time functions.
 - Identify how to best work with investment and depreciation functions.
-

Copyright Notice

© 2026 Pacific CPE, LP. All rights reserved.

The materials in this course — including the text, illustrations, exhibits, examples, exam questions, and review questions — are the copyrighted property of Pacific CPE, LP. No portion of this course may be reproduced, stored in a retrieval system, distributed, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise) without the prior written permission of Pacific CPE, LP, except for the personal, non-commercial use of the registered learner.

Pacific CPE, LP grants the registered learner a single-seat, non-transferable license to access this course for the purpose of completing the associated continuing professional education credit. Account credentials may not be shared. Group access requires a separate enterprise license.

This course is provided "as is" for educational purposes. While Pacific CPE, LP makes a reasonable effort to ensure the content is current and accurate, the materials should not be relied upon as a substitute for professional advice. Pacific CPE, LP disclaims all liability for any error, omission, or loss arising from the use of, or reliance on, the course content.

Questions about reproduction, licensing, or use of these materials should be directed to support@pacificcpe.com.

Publication Date: June 2026

TABLE OF CONTENTS

CHAPTER

01

Date And Time Formulas 4

1.01 Understanding Dates And Times 4

1.02 Using Date Functions 6

1.03 Today 6

1.04 Days360 10

1.05 Using Time Functions 15

Test Your Knowledge 18

CHAPTER

02

Finagling Financial Formulas 20

2.01 Some Financial Function Basics Before You Begin 20

2.02 The Pv, Npv, And Fv Functions 21

2.03 The Pmt Function 24

2.04 Depreciation Functions 27

2.05 Excel'S Advanced Financial Functions 30

Test Your Knowledge 36

Final Exam Copy 48

Glossary 46

Index

Chapter 1: DATE AND TIME FORMULAS

Chapter Objective

After completing this chapter, you should be able to:

- Recognize how to best use the Date and Time functions.

Creating formulas that use dates and times can be a little confusing if you don't have a good understanding of how Excel treats these types of values. After you're equipped with this understanding, you can begin to make good use of the many Date and Time functions that the program offers.

This chapter begins with a quick overview of date and time numbers in Excel and how you can use them to build simple formulas that calculate differences between elapsed dates and times. The chapter goes on to survey Excel's built-in Date and Time functions, which enable you to return and calculate with dates and times.

UNDERSTANDING DATES AND TIMES

Excel doesn't treat the dates and times that you enter in the cells of your worksheet as simple text entries. (For more information on inputting numbers in a worksheet. Any entry with a format that resembles one of the date and time number formats recognized by Excel is automatically converted, behind the scenes, into a serial number. In the case of dates, this serial number represents the number of days that have elapsed since the beginning of the 20th century so that January 1, 1900, is serial number 1; January 2, 1900, is serial number 2; and so forth. In the case of times, this serial number is a fraction that represents the number of hours, minutes, and seconds that have elapsed since midnight, which is serial number 0.0, so that 12:00:00 p.m. (noon) is serial number 0.5; 11:00:00 p.m. is 0.95833333; and so forth.

As long as you format an entry so that it conforms to a recognized date or time format, Excel enters it as a date or time serial number. Only when you enter a formatted date or time as a text entry (by prefacing it with an apostrophe) or import dates and times as text entries into a worksheet do you have to worry about converting them into date and time serial numbers, which enables you to build worksheet formulas that perform calculations on them.

Changing the date locale

Excel isn't set up to automatically recognize European date formats in which the number of the day precedes the number of the month and year. For example, you may want 6/11/2022 to represent

November 6, 2022, rather than June 11, 2022. If you're dealing with a worksheet that uses this type of European date system, you have to customize the locale that Excel uses for its Date number formats.

To make this change, you follow these steps:

1. Select the cells to which you want to apply the new date locale.
2. On the Home tab, click the dialog box launcher in the Number group (or press Ctrl+1).
Excel opens the Format Cells dialog box with the Number tab displayed.
3. In the Category list, click Date.
4. Use the Locale drop-down list to select the location that uses the date format you want to apply, such as English (United Kingdom).
5. Click OK.

After changing the Date format locale, Excel formats the selected dates according to the new location. If you chose English (United Kingdom), for example, 3/5/22 is interpreted as May 3, 2022, rather than March 5, 2022.

Building formulas that calculate elapsed dates

Most of the date formulas that you build are designed to calculate the number of days or years that have elapsed between two dates. To do this, you build a formula that subtracts the earlier date from the later date.

For example, if you input the date 4/25/95 in cell B4 and 6/3/22 in cell C4 and you want to calculate the number of days that have elapsed between April 25, 1995, and June 3, 2022, in cell D4, you'd enter the following subtraction formula in that cell:

=C4-B4

Excel then inputs 9901 as the number of days between these dates in cell D4 using the General number format.

Tip

If you want the result between two dates expressed in the number of years rather than the number of days, divide the result of your subtraction by the number of days in a year. In this example, you can enter the formula =D4/365 in cell E4 to return the result 27.12603, which you can then round off to 27 by clicking the Home tab's Decrease Decimal button (it's in the Number group) or by pressing Alt+H9 until only 27 remains displayed in the cell.

Building formulas that calculate elapsed times

Some worksheets require formulas that calculate the amount of elapsed time between a starting and an ending time. For example, suppose that you keep a worksheet that records the starting and stopping times for your hourly employees, and you need to calculate the number of hours and minutes that elapse between these two times to figure their daily and monthly wages.

To build a formula that calculates how much time has elapsed between two different times of the day, subtract the starting time of day from the ending time of day. For example, suppose that you enter a person's starting time in cell B6 and ending time in C6. In cell D6, you'd enter the following subtraction formula:

```
=C6-B6
```

Excel then returns the difference in cell D6 as a decimal value representing what fraction that difference represents of an entire day (that is, a 24-hour period). If, for example, cell B6 contains a starting time of 9:15 a.m. and cell C6 contains an ending time of 3:45 p.m., Excel returns the following decimal value to cell D6:

```
6:30 AM
```

To convert this time of day into its equivalent decimal number, you convert the time format automatically given to it to the General format (Ctrl+Shift+`), which displays the following result in cell D6:

```
0.270833
```

To convert this decimal number representing the fraction of an entire day into the number of hours that have elapsed, you multiply this result by 24 as in `=D6*24`, which gives you a result of 6.5 hours.

USING DATE FUNCTIONS

Excel contains a number of built-in Date functions that you can use in your worksheets. You can access the Date functions either via the Insert Function icon on the Formula bar, or via the Ribbon's Formulas tab by clicking the Date & Time drop-down menu. The next few sections take you through a few of the most common Date functions.

TODAY

The most basic Date function has to be TODAY. This function takes no arguments and is always entered as follows:

```
=TODAY()
```

When you enter the TODAY function in a cell or formula, Excel returns the current date using the following Date format:

9/15/2022

Remember

The date inserted into a cell with the TODAY function is not static. Whenever you open a worksheet that contains this function, Excel recalculates the function and updates its contents to the current date. This means that you don't usually use TODAY to input the current date when you're doing it for historical purposes (an invoice, for example) and never want it to change.

Tip

If you do use TODAY and then want to make the current date static in the worksheet, you need to convert the function into its serial number. You can do this for individual cells: First, select the cell, press F2 to activate Edit mode, press F9 to replace =TODAY() with today's serial number on the Formula bar, and click the Enter button to insert this serial number into the cell. You can do this conversion on a range of cells by selecting the range, copying it to the Clipboard by clicking the Copy button on the Home tab of the Ribbon (or pressing Ctrl+C), and then immediately pasting the calculated values into the same range by choosing the Paste Values option from the Paste command button's drop-down menu (or pressing Alt+HV).

DATE and DATEVALUE

The DATE function returns a date serial number given a year, month, and day as arguments. The DATE function uses the following syntax:

`DATE(year,month,day)`

This function comes in handy when you have a worksheet that contains the different parts of the date in separate columns, similar to the one shown in Figure 10-1. You can use it to combine the three columns of date information into a single date cell that you can use in sorting and filtering.

FIGURE 10-1: USING THE DATE FUNCTION TO COMBINE SEPARATE DATE INFORMATION INTO A SINGLE ENTRY.

D3				=DATE(C3,A3,B3)
	A	B	C	D
1				
2	Month	Day	Year	Date
3	2	15	1967	2/15/1967
4	7	23	1938	7/23/1938
5	11	6	1969	11/6/1969
6	1	6	1954	1/6/1954
7	3	3	1998	3/3/1998
8	7	30	2000	7/30/2000
9	5	14	2004	5/14/2004
10	12	12	2012	12/12/2012
11	4	5	2022	4/5/2022

The DATEVALUE function returns the date serial number for a date that's been entered into the worksheet as text so that you can use it in date calculations. This function takes a single argument:

DATEVALUE(*date_text*)

Suppose, for example, that you've made the following text entry in cell B12:

'5/21/2022

(Remember that when you preface an entry with an apostrophe, Excel inserts that entry as text even if the program would otherwise treat it as a value.)

You can convert this text entry into a date serial number by entering the following formula in cell C12 next door:

=DATEVALUE(B12)

Excel returns the date serial number, 44702, to cell C12, which you can convert into a more intelligible date by formatting it with one of Excel's Date formats (Ctrl+1).

Remember

You must convert the DATE and DATEVALUE functions into their calculated date serial numbers to sort and filter them. To convert these functions individually, select a cell, press F2 to activate Edit mode, and then press F9 to replace the function with the calculated date serial number; finally, click the Enter button on the Formula bar to insert this serial number into the cell. To do this conversion on a range of cells, select the range, copy it to the Clipboard by pressing Ctrl+C, and then immediately paste the calculated serial numbers into the same range by choosing the Paste Values option from the Paste command button's drop-down menu (or press Alt+HV).

DAY, WEEKDAY, MONTH, and YEAR

The DAY, WEEKDAY, MONTH, and YEAR Date functions all return just parts of the date serial number that you specify as their argument:

- **DAY(serial_number)**: Returns the day of the month in the date (as a number between 1 and 31).
- **WEEKDAY(serial_number,[return_type])**: Returns the day of the week (as a number between 1 and 7 or 0 and 6). The optional return_type argument is a number between 1 and 3; 1 (or no return_type argument) specifies the first type where 1 equals Sunday and 7 equals Saturday; 2 specifies the second type where 1 equals Monday and 7 equals Sunday; and 3 specifies the third type where 0 equals Monday and 6 equals Sunday.
- **MONTH(serial_number)**: Returns the number of the month in the date serial number (from 1 to 12).
- **YEAR(serial_number)**: Returns the number of the year (as an integer between 1900 and 9999) in the date serial number.

For example, if you enter the following DAY function in a cell as follows:

```
DAY(DATE(2022, 4, 15))
```

Excel returns the value 15 to that cell. If, instead, you use the WEEKDAY function as follows:

```
WEEKDAY(DATE(2022, 4, 15))
```

Excel returns the value 6, which represents Friday (using the first return_type where Sunday is 1 and Saturday is 7) because the optional return_type argument isn't specified.

If you use the MONTH function on this date as in the following:

`MONTH(DATE(2022, 4, 15))`

Excel returns 4 to the cell.

Warning

To avoid errors in your date formulas, always enter all four digits of the year. For example, consider the following:

`DATE(22, 4, 15)`

This returns the date April 15, 1922, which is probably not what you want.

Note that you can use the YEAR function to calculate the difference in years between two dates. For example, if cell B6 contains 7/23/1978 and cell C6 contains 7/23/2022, you can enter the following formula using the YEAR function to determine the difference in years:

`=YEAR(C6) - YEAR(B6)`

Excel then returns 44 to the cell containing this formula.

Warning

Don't use these functions on dates entered as text entries. Always use the DATEVALUE function to convert these text dates and then use the DAY, WEEKDAY, MONTH, or YEAR functions on the serial numbers returned by the DATEVALUE function to ensure accurate results.

DAYS360

The DAYS360 function returns the number of days between two dates based on a 360-day year (that is, one in which there are 12 equal months of 30 days each), which is an accounting convention. The DAYS360 function takes the following arguments:

`DAYS360(start_date, end_date, [method])`

The start_date and end_date arguments are date serial numbers or references to cells that contain such serial numbers. The optional method argument is either TRUE or FALSE, where FALSE specifies the use of the U.S. calculation method and TRUE specifies the use of the European calculation method:

- **U.S. (NASD) method (FALSE or method argument omitted):** In this method, if the starting date is equal to the 31st of the month, it becomes equal to the 30th of the same month; if the ending date is the 31st of a month and the starting date is earlier than the 30th of the