



M 365 Excel Class Video 05: Date & Time formulas by excelisfun

Table of Contents

Serial Number Date Values.....	2
Date Number Formatting.....	3
Serial Number Time Values	4
Time Number Formatting.....	5
12 Important Date & Time Formulas	6
Worksheet Formulas to Create Date Attribute Fields for a Sales Table.	8
Power Query Formulas to Create Date Attribute Fields for a Sales Table.	9

Serial Number Date Values

Today:	8/30/22
Today's Date Keyboard:	Ctrl + ;
General NF Keyboard:	Ctrl + Shift + ~ / `

When you type a Date:

Date Number Format is applied on top of a serial number date, which is the number of days since Dec 31, 1899.

Date with Date Number Format	Serial Number Under the Date	Issue
1/1/1900	1	
1/3/1900	3	
Jan 1, 1900	1	
Jan 3, 1900	3	
10/24/1929	10890	
12/6/1969	25543	
2/29/2020	43890	
3/12/4369	901856	
7/28/20	44040	
7-28-20	44040	
Tuesday, July 28, 2020	44040	
Tue, 7/28/2020	44040	
July 28, 2020	44040	
8/2/2020	44045	
Sunday, August 2, 2020	44045	Column Not Widen Enough
8.2.2020	8.2.2020	Separator is Not Allowed
28/7/2020	28/7/2020	Day First is Not Allowed
11/1/1789	11/1/1789	Before Jan 1, 1900
12/31/1899	12/31/1899	

Date Number Formatting

Date Custom Number Format :

d = day

m = month

y = year

Separators allowed: /, -

Date

3/16/20

Date Custom Number Format	Date = 3/16/2020	What Number Format Shows
d	16	Day number
dd	16	Day number with lead zero
ddd	Mon	3 letter day
dddd	Monday	Full day name
m	3	Month number
mm	03	Month number with lead zero
mmm	Mar	3 letter month
mmmm	March	Full month name
y	20	Last 2 digits of year
yy	20	Last 2 digits of year
yyy	2020	4 digit year
yyyy	2020	4 digit year
m/d/yyyy	3/16/2020	Forward slash ok
m-d-yyy	3-16-2020	Dash ok
ddd, m/d/yy	Mon, 3/16/20	Comma ok

Serial Number Time Values

Entering AM/PM Time Values:	hh:mm:ss AM or PM
Entering Military Time Values:	hh:mm:ss
8 in Morning:	8:00 AM
Proportion of one 24 hour day:	0.333333333
Current Time:	2:17 PM
Current Time Keyboard:	Ctrl + Shift + ;
General NF Keyboard:	Ctrl + Shift + ~ / `

When you type a Time:

Time Number Format is applied on top of a serial number time, which is the proportion of one 24 hour day.

Time with Time Number Format	Proportion of 24 hour day = Hours/24 hours	Fraction	Serial Number Under the Time
12:00 AM	0		0.00
8:00 AM	8/24	1/3	0.3333333333333333
12:00 PM	12/24	1/2	0.50
3:00 PM	(12+3)/24	15/24	0.6250
3:15:00 PM	(12+3+15/60)/24	15.25/24	0.6354166666666670
3:17:00 PM	(12+3+17/60)/24	15.28 $\bar{3}$ /24	0.63680555555555560
3:17:15 PM	(12+3+17/60+15/(60*60))/24	15.2875/24	0.6369791666666670
00:15:00	15/60/24	0.25/24	0.0104166666666667
00:00:15	15/(60*60)/24	0.0041 $\bar{6}$ /24	0.0001736111111111
1:00 PM	(12+1)/24	13/25	0.541666667
13:00	13/24	13/25	0.541666667
8:00AM	Not valid time value.		8:00AM

Time Number Formatting

Time Custom Number Format :

h = hour

m = minute

s = seconds

: (colon) separates parts of time value

Type Space and then AM or PM

Leave out AM or PM, Military time is displayed

[hh] shows hours past 24 hours

Time with Time Number Format	Time Custom Number Format	Serial Number Under the Time
1:30 PM	h:mm AM/PM	0.5625
01:30 PM	hh:mm AM/PM	0.5625
1:30:00 PM	h:mm:ss AM/PM	0.5625
13:30	h:mm	0.5625
00:15:00	hh:mm:ss	0.010416667
00:00:15	hh:mm:ss	0.000173611
8 AM	h AM/PM	0.333333333
8/31/22 8:03	m/d/yy h:mm	44804.33542
8/31/22 8:03 AM	m/d/yy h:mm AM/PM	44804.33542
30:00:00	[hh]:mm:ss	1.25
30:00	[hh]:mm	1.25
78:30	[hh]:mm	3.270833333

12 Important Date & Time Formulas

	A	B	C	D	E	F	G
1							
2		Question:	Start	End	Answer:		
3		How many days until school starts?	2/27/2020	3/16/2020	18		1
4		How many days is the invoice past due?	2/28/2020	3/1/2020	2		2
5		How many days was the loan outstanding?	9/5/2021	1/3/2022	120		3
6		How many days did the project take?	12/27/2019	3/2/2020	67		4
7		How many workdays are there? (Fri. & Sat. weekend)	1/20/2020	3/15/2020	40		5
8		How many hours did the employee work?	8:30 AM	1:00 PM	4.5		6
9		How many hours did you work on night shift?	8:20 PM	2:05 AM	5.75		7
10		Time worked, rounded to nearest 5 mins.?	8:22 AM	1:39 PM	5:15		8
11							
12		Question:	Start	Number Days	Answer:		
13		When is the loan due?	9/5/2021	120	1/3/2022		9
14		What is end date for project with Fri. & Sat. as weekend?	1/20/2020	40	Mon, 3/16/20		10
15							
16		Question:	Start	Number Months	Answer:		
17		When does my pension plan vest?	1/22/2022	60	1/22/2027		11
18		What is last day of this month?	2/20/2020	0	Sat, 2/29/20		12

Answer:
18
2
120
67
40
4.5
5.75
5:15

Formula:	Common Date and Time Formulas:
1 E3: =D3-C3	Difference between dates, not including first day = EndDate - StartDate
2 E4: =D4-C4	
3 E5: =D5-C5	
4 E6: =D6-C6+1	Difference between dates, including first day = EndDate - StartDate + 1
5 E7: =NETWORKDAYS.INTL(C7,D7,7)	How many Working Days = =NETWORKDAYS.INTL(StartDate,EndDate,WeekendNumber,HolidaysAsRange)
6 E8: =(D8-C8)*24	Number hours between two time values = (EndTime - StartTime)*24
7 E9: =MOD(D9-C9,1)*24	Number hours between two time values, including night shift:
8 E10: =MROUND(D10-C10,"00:05")	Rounding time =MROUND(EndTime-StartTime,"Time")

Answer:
1/3/2022
Mon, 3/16/20

9 E13: =C13+D13	Calculate future date by adding number of days = StartDate + NumberOfDays
10 E14: =WORKDAY.INTL(C14,D14,7)	End date while excluding weekends and holidays: =WORKDAY.INTL(StartDate,NumberOfWorkdays,WeekendNumber,HolidaysAsRange)

Answer:
1/22/2027
Sat, 2/29/20

11 E17: =EDATE(C17,D17)	Calculate future date by adding number of months: = EDATE(StartDate,NumberOfMonths)
12 E18: =EOMONTH(C18,D18)	Calculate end of month date = EOMONTH(StartDate,NumberOfMonths)

Worksheet Formulas to Create Date Attribute Fields for a Sales Table.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2	Date Worksheet Formulas to Create Data Attributes for a Table of Sales Data																		
3																			
4																			
5																			
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30																			
31																			
32																			
33																			

Get Year, Month, Day and Quarter Data from a Serial Number:												
Date	Sales Rep	Sales	YEAR	MONTH	DAY	Month Name	Day Name	Quarter	Q Label	Fiscal Quarter	Fiscal Year	F Q Label
4/19/23	Hassan M	163.22	2023	4	19	Apr	Wed	2	Q - 2	1	2023	2023 - Q 1
1/26/23	Tonya J	163.1	2023	1	26	Jan	Thu	1	Q - 1	4	2022	2022 - Q 4
2/28/23	Abdisamad A	468.54	2023	2	28	Feb	Tue	1	Q - 1	4	2022	2022 - Q 4
10/18/22	Sioux Cool	754.45	2022	10	18	Oct	Tue	4	Q - 4	3	2022	2022 - Q 3
2/27/22	Nikol M	379.11	2022	2	27	Feb	Sun	1	Q - 1	4	2021	2021 - Q 4
4/7/22	Tyrone Cox	237.76	2022	4	7	Apr	Thu	2	Q - 2	1	2022	2022 - Q 1
12/24/22	Tyrone Cox	286.05	2022	12	24	Dec	Sat	4	Q - 4	3	2022	2022 - Q 3
5/5/22	Hassan M	389.22	2022	5	5	May	Thu	2	Q - 2	1	2022	2022 - Q 1
2/21/22	Tyrone Cox	277.78	2022	2	21	Feb	Mon	1	Q - 1	4	2021	2021 - Q 4
7/1/23	Sioux Cool	463.46	2023	7	1	Jul	Sat	3	Q - 3	2	2023	2023 - Q 2
1/31/22	Hassan M	261.87	2022	1	31	Jan	Mon	1	Q - 1	4	2021	2021 - Q 4
3/15/23	Sioux Cool	128.55	2023	3	15	Mar	Wed	1	Q - 1	4	2022	2022 - Q 4
11/23/22	Anastasiya A	663.32	2022	11	23	Nov	Wed	4	Q - 4	3	2022	2022 - Q 3
12/27/22	Tyrone Cox	769.54	2022	12	27	Dec	Tue	4	Q - 4	3	2022	2022 - Q 3
11/15/22	Sioux Cool	462.72	2022	11	15	Nov	Tue	4	Q - 4	3	2022	2022 - Q 3
6/23/23	Hassan M	328.41	2023	6	23	Jun	Fri	2	Q - 2	1	2023	2023 - Q 1
9/10/23	Nikol M	163.07	2023	9	10	Sep	Sun	3	Q - 3	2	2023	2023 - Q 2
2/26/22	Nikol M	403.42	2022	2	26	Feb	Sat	1	Q - 1	4	2021	2021 - Q 4
3/17/23	Tyrone Cox	325.92	2023	3	17	Mar	Fri	1	Q - 1	4	2022	2022 - Q 4
12/16/22	Nikol M	791.64	2022	12	16	Dec	Fri	4	Q - 4	3	2022	2022 - Q 3
1/31/23	Nikol M	309.28	2023	1	31	Jan	Tue	1	Q - 1	4	2022	2022 - Q 4
3/10/23	Nikol M	141.09	2023	3	10	Mar	Fri	1	Q - 1	4	2022	2022 - Q 4
12/6/22	Tyrone Cox	703.13	2022	12	6	Dec	Tue	4	Q - 4	3	2022	2022 - Q 3
7/8/23	Anastasiya A	351.77	2023	7	8	Jul	Sat	3	Q - 3	2	2023	2023 - Q 2

F Q Label	Total Sales (\$)
2023 - Q 1	4,132.07
2022 - Q 4	6,794.65
2022 - Q 3	12,711.78
2021 - Q 4	4,266.23
2022 - Q 1	7,345.40
2023 - Q 2	7,159.69
2023 - Q 3	8,849.41
2022 - Q 2	2,591.93
Grand Total	53,851.16

Power Query Formulas to Create Date Attribute Fields for a Sales Table.

Create New Date Attribute Fields with this dropdown

Table.SelectColumns("#Changed Type",{"Date", "Sales Rep", "Sales", "Year", "Month Name", "Fiscal Period"})

	Date	Sales Rep	Sales	Year	Month Name	Fiscal Period
1	4/19/23	Hassan M	163.22	2023	Apr	2023 - Q1
2	1/26/23	Tonya J	163.1	2023	Jan	2022 - Q4
3	2/28/23	Abdisamad A	468.54	2023	Feb	2022 - Q4
4	10/18/22	Sioux Cool	754.45	2022	Oct	2022 - Q3
5	2/27/22	Nikol M	379.11	2022	Feb	2021 - Q4
6	4/7/22	Tyrone Cox	237.76	2022	Apr	2022 - Q1
7	12/24/22	Tyrone Cox	286.05	2022	Dec	2022 - Q3
8	5/5/22	Hassan M	389.22	2022	May	2022 - Q1
9	2/21/22	Tyrone Cox	277.78	2022	Feb	2021 - Q4
10	7/1/23	Sioux Cool	463.46	2023	Jul	2023 - Q2
11	1/31/22	Hassan M	261.87	2022	Jan	2021 - Q4
12	3/15/23	Sioux Cool	128.55	2023	Mar	2022 - Q4
13	11/23/22	Anastasiya A	663.32	2022	Nov	2022 - Q3
14	12/27/22	Tyrone Cox	769.54	2022	Dec	2022 - Q3
15	11/15/22	Sioux Cool	462.72	2022	Nov	2022 - Q3
16	6/23/23	Hassan M	328.41	2023	Jun	2023 - Q1
17	9/10/23	Nikol M	163.07	2023	Sep	2023 - Q2
18	2/26/22	Nikol M	403.42	2022	Feb	2021 - Q4

Query Settings

Name: fSalesPQAnswer

APPLIED STEPS

- Source
- Inserted Month
- Inserted Month Name
- Extracted First Characters
- Inserted Quarter
- Inserted Year
- Added Conditional Column
- Added Prefix
- Added Conditional Column1
- Merged Columns
- Changed Type
- Removed Other Columns