

**Excel & Business Math**  
**Video/Class Project #29**  
**Time Number Formatting & Time Calculations in Excel for Payroll Table**

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## 1) Time Number Format:

- i. Enter time as hour, colon, minutes, colon, seconds, then a space, and AM or PM (there are other methods also) such as: 8:00 AM.
- ii. Under the Time Number Format is a serial number that represents the proportion of one 24-hour day.
  1. Examples:
    - 8:00 AM =  $8/24 = 1/3 = 0.333333333333333$
    - 12:00 PM =  $12/24 = 1/2 = 0.5$
    - 3:00 PM =  $(12 + 3)/24 = 15/24 = 5/8 = 0.625$
- iii. Some Time Math Formulas:
  1. **=(End Time – Start Time)\*24** = Hours worked in a non-night-shift day.
  2. **=MOD(End Time – Start Time,1)\*24** = Hours worked in a day or night-shift day. This example was not seen in the video.

## 2) Video Example 01: Time Number Formatting Examples

	A	B	C	D	E	F	G
1	<b>Time Number Format:</b>						
2	Under the Time Number Format is a serial number that represents the proportion of one 24-hour day						
3	Time serial number = Proportion of the 24 hour day						
4							
5	Enter time as: <b>hours, colon, minutes, colon, seconds</b> , then a <b>space</b> , and <b>AM or PM</b> (there are other methods also)						
6							
7	Enter 8:00 AM Time ==>>	8:00:00 AM					
8	Enter 8:00 AM Again ==>>						
8	Then Apply General NF	0.333333333		Apply General Number Format = Ctrl + Shift + ~			
9	Type formula =8/24	0.333333333					
10	Type formula Again ==>>						
10	Then Time NF ==>>	8:00:00 AM					
11							
12	<b>Time</b>	<b>Proportion of 24 hour day</b>	<b>Reduced to:</b>	<b>Reduced to:</b>	<b>Actual Number in Cell</b>		
13	12:00 AM	0			0		
14	8:00 AM	8/24	1/3		0.333333333		
15	12:00 PM	12/24	1/2		0.5		
16	3:00 PM	(12+3)/24	15/24	5/8	0.625		
17	3:15 PM	(12+3.25)/24			0.635416667		
18							
19	Notice that we took a number and <b>divided by 24!!!!</b>						
20	This means that if we want to do Time Math and get hours as a result, we must <b>multiply the decimal time answer by 24!!!!</b>						

### 3) Video Example 02: Number of Hours Worked Formula

	A	B	C	D	E	F	G
21							
22	Wage per hour	\$21.25					
23	Time In	8:00 AM					
24	Time Out	12:00 PM					
25	Total Hours worked	4	= $(B24-B23)*24$	<b>Important Formula: Hours Worked = (Later Time - Earlier Time)*24</b>			
26	Gross Pay	85	= $B25*B22$				
27							

### 4) Video Example 03: Number of Hours with a Break Formula (Homework Tracker)

	A	B	C	D
27				
28	Homework tracker:			
29	Start Time	8:30 AM		
30	End Time	11:00 AM		
31	Hours worked	2.5	= $(B30-B29)*24$	
32	Start Time	10:00 PM		
33	End Time	11:15 PM		
34	Hours worked	1.25	= $(B33-B32)*24$	
35	Total	3.75	= $B34+B31$	
36		or		
37	Total	3.75	= $SUM(B30-B29,B33-B32)*24$	
38				

## 5) Video Example 04: Payroll Hours Worked, Gross Pay, Deductions and Net Pay Example

	A	B	C	D	E	F	G	H
40							Tax Rate	
41	Payroll Example:						0.0765	
42								
43	<b>Employee</b>	<b>Wage</b>	<b>Time In</b>	<b>Time Out</b>	<b>Hours Worked</b>	<b>Gross Pay</b>	<b>Deduction</b>	<b>Day's Pay</b>
44	Carroll Stanley	\$24.94	8:00 AM	3:30 PM	7.5	187.05	14.31	172.74
45	Anne Ramos	\$18.14	9:00 AM	2:25 PM	5.416666667	98.26	7.52	90.74
46	Blanche Sanchez	\$17.94	7:30 AM	3:15 PM	7.75	139.04	10.64	128.4
47	Karla Fletcher	\$26.70	8:00 AM	2:10 PM	6.166666667	164.65	12.6	152.05
48	Devin Smith	\$24.30	9:00 AM	2:30 PM	5.5	133.65	10.22	123.43
49	Edna Hansen	\$22.85	8:00 AM	4:45 PM	8.75	199.94	15.3	184.64
50	Moses Swanson	\$26.98	6:30 AM	11:35 AM	5.083333333	137.15	10.49	126.66
51	Sherman Moss	\$17.71	8:00 AM	1:00 PM	5	88.55	6.77	81.78
52	Amber Rios	\$20.12	7:00 AM	4:30 PM	9.5	191.14	14.62	176.52
53	Lindsey Powers	\$23.69	8:00 AM	3:00 PM	7	165.83	12.69	153.14
54								
55					Formula in cell E56:	Formula in cell F56:	Formula in cell G56:	Formula in cell H56:
56					=(D44-C44)*24	=ROUND(E44*B44,2)	=ROUND(F44*\$G\$41,2)	=F44-G44

### Keyboards seen in this video:

1. **Ctrl + Shift + ~** or **Ctrl + Shift + `** = Apply General Number Formatting (Eraser)