

# Office 2016– Excel Basics 10

## Video/Class Project #22

### Excel Basics 10: Date & Time Number Formatting, Formulas, Functions & Calculations

**Goal in video # 10:** Learn about Date & Time Number Formatting and see how to create various Date and Time Formulas for business situations like Invoicing and Payroll.

#### 1) Date Number Format:

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- i. Enter dates with forward slashes (there are other methods also) such as: 3/9/2018.
- ii. When a cell has General Number Formatting, and then you type a proper date, like 3/9/2018, you are performing “Number Format As You Type”. This means that when you type a proper date you are also applying a Date Number Formatting as you type.
- iii. Under the Date Number Format is a Serial Number that represents the number of days since December 31, 1899.
  1. Examples:
    - Jan 1, 1900 = 1
    - Jan 2, 1900 = 2
    - Oct 30, 2013 = 41577
    - March 9, 2018 = 43168
- iv. Some Date Math Formulas:
  1. **=End Date – Start Date** = Number of Days Between Two Dates (Number of days an invoice is late).
  2. **=End Date – Start Date + 1** = Number of Days Between Two Dates Including the Start Date (Number of days for a project that includes the start date).
  3. **=Loan Issue Date + Number of Days Loan Outstanding** = Maturity Date.
- v. Some examples of Excel Date Functions:
  1. **EDATE** function allows you to take a date and get the same day in a future or past month.
    - i. =EDATE(Date,2) jumps two months ahead
    - ii. =EDATE(Date,-2) jumps two months backwards.
  2. **EOMONTH** allows you to take a date get the end of the month date for the current month, a future month, or a past month.
    - i. =EOMONTH(Date,0) gives you the end of the month
    - ii. =EOMONTH(Date,1) gives you the end of next month
    - iii. =EOMONTH(Date,-1) gives you the end of last month.
- vi. Date Keyboards:
  1. **Ctrl + ;** = Keyboard for hardcoding today's date.

## 2) Time Number Format:

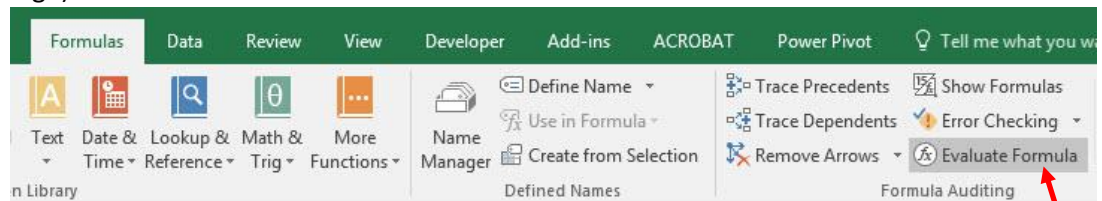
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- i. Enter time as hour, colon, minutes, colon, seconds, then a space, and AM or PM (there are other methods also) such as: 8:00 AM.
- ii. Under the Time Number Format is a serial number that represents the proportion of one 24-hour day.
  1. Examples:  
 $8:00 \text{ AM} = 8/24 = 1/3 = 0.333333333333333$   
 $12:00 \text{ PM} = 12/24 = 1/2 = 0.5$   
 $3:00 \text{ PM} = (12 + 3)/24 = 15/24 = 5/8 = 0.625$
- 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.
- iv. **Time Keyboards:**
  1. **Ctrl + Shift + ;** = Keyboard for hardcoding current time.

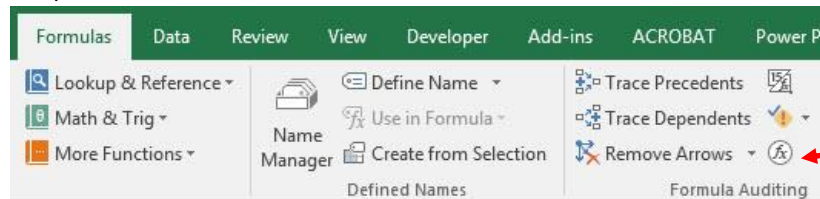
## 3) Formula Evaluator (Evaluate Formula feature) to see how formula is calculated by Excel

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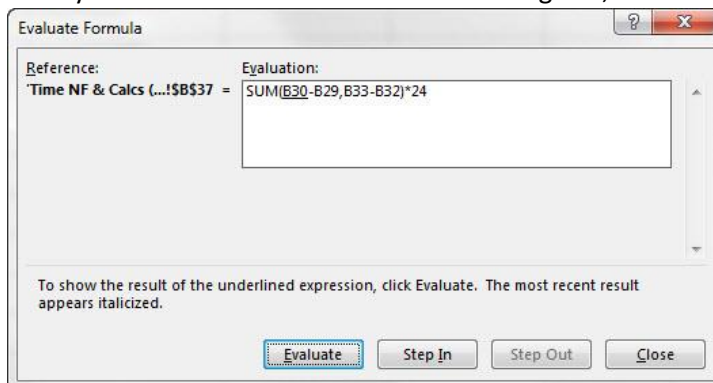
- i. Click in cell with formula.
- ii. In Formula Ribbon Tab, in the Formula Auditing Group, click the Evaluate Formula button.
  1. The button may look like this large button (Your screen is wide, or your screen resolution is high):



2. The button may look like this small button (Your screen is narrow, or your screen resolution is low):



- iii. Then you will see the Evaluate Formula dialog box, like this:



- iv. Click Evaluate button or use Enter to watch each step that Excel uses to evaluate or calculate your formula!

## 4) Keyboards seen in this video:

1. **Ctrl + ;** = Keyboard for hardcoding today's date.
2. **Ctrl + Shift + ;** = Keyboard for hardcoding current time.
3. **Ctrl + F1** = Toggle Ribbon Tabs from Hidden to not Hidden
4. **Ctrl + Shift + ~** or **Ctrl + Shift + `** = Apply General Number Formatting (Eraser)