

Simple Calculations

- Entering a simple calculation using equal sign
- Be aware of order of operations and use of parentheses
- Be aware that $5(3+2)$ will result in an error. Excel requires you use multiplication here: $5*(3+2)$
- The keyboard key for an exponent is ^

Cell References

- Extremely important to understand references
- Letters refer to columns
- Numbers refer to rows
- Upper left hand corner tells us name of current cell
- Ex. D8 is the 4th column and 8th row.
- Relative references: default when referencing cells. Remembers the location of a cell relative to the formula cell. Ex. =A1 is a relative reference and if our formula is in B2 the reference is one cell up and one cell to the left.
- Absolute reference: When copied, cell reference remains the same regardless of new position of formula cell. \$ used to make absolute reference. Ex. =\$A\$1 reference will always refer to cell A1
- Mixed references: When the column reference is absolute and the row is relative, or vice-versa. Ex. \$A1 is a mixed reference where the reference to column A is absolute and the reference to row is relative. Therefore when copied to another cell we will always reference column A but the row we reference is relative to the position of the new cell.
- Shortcut: The “F4” key can be used to turn a relative reference into an absolute or mixed reference. Continue to hit F4 to cycle through reference options.
- Double click on lower right side of cell to copy a formula down for entire table. (or you can drag it down)
- To check if you are using references correctly click into a cell and Excel will highlight the cells you told it to use. Make sure your references in the first cell allow you to fill in the entire table correctly.

Excel Functions

- The exponential function in Excel is “=EXP()”
- To find the average use “=AVERAGE()”
- To add multiple cells use “=SUM()”
- Can use AutoSum in ribbon to shortcut to a select set of functions
- ‘ALT’+ ‘=’ is shortcut key for ‘SUM’ function
- To find the maximum value from a group of cells use “=MAX()”

- To find the minimum value from a group of cells use “=MIN()”
- Can subtract dates to get number of days between two dates. OR can use “=DAYS(end_date,start_date)”. Order is important here.
- Excel will often try to guess cell references. Make sure you check it is guessing correctly.
- The input for all the functions above is the list of cells you wish to perform the function on.
- f_x (locate on the formula bar) brings up the insert function box and allows user to search all Excel functions
- If you forget the name of a function: Begin typing the name of the function and choose from the Excel drop-down list. Hovering over a function in the list will briefly explain the function.
- Remember the importance of references
- Beware of common Error messages and what errors cause certain messages
- Beware of error that causes a cell to be formatted as date. If you forgot the = sign when entering a division formula that cell is now a formatted as a date and will remain a date until you change the formatting.
- Beware that when in a cell entering a formula you cannot do anything else in Excel until you exit that cell. Ex. if menu bar is gray press “ESC” key.

Common Error Messages

- ##### The column is too narrow to display the entire number. There is a number there but cell width is too narrow to display.
- #DIV/0 You are trying to divide by 0
- #NAME? You are using text in a formula that Excel does not recognize. Possible reason: Spelled name of a function incorrectly or placed text inside a function Excel doesn't recognize.
- #NUM! You are using the wrong type of numeric data for an operation.
- #REF! Your reference is invalid. Example “=C1(C2-C3)” will give this error. Need the * symbol.
- #VALUE! You are using the wrong type of input into a function. Example: If multiplying a cell by a cell with text.
- #N/A! A formula can't find the referenced data.

S&P 500

- Excel has multiple worksheets. Tab on bottom allows you to navigate between worksheets
- Format data as Excel Table using “Format as Table” under Styles on the ribbon
- Using keyboard to select an entire table. CTRL+SHIFT+ARROW KEY OR CTRL+A (Using just SHIFT + ARROW KEYS allows you to move one row or column at a time in selection)
- Sorting and filtering: Home tab → Editing: Sort and Filter
- Freeze panes: View tab → Freeze Panes → Select from dropdown menu

Yield Curve

- In general to graph any data highlight data and then navigate to Insert tab of ribbon and click on desired chart
- In general be aware of what type of data you have and what you are trying to display about the data with the graph
- Line graph vs Scatter plot: Be aware a line graph is inappropriate if the x-axis has uneven spacing. A scatter plot treats the first set of data as the vector for the x-axis and the next column as data for the y axis.
- Histogram: a diagram consisting of rectangles whose area is proportional to the frequency of a variable. Graphs frequency based on bins.
- Make sure data used for graph is correctly formatted as numbers and not text and in proper units (months, years, etc)
- Using Chart Elements such as titles, axis titles, legends, etc.
- Additional formatting of graph: axis min-max, gridlines, etc.

Formatting

- Formatting numbers to desired decimal places
- Add comma separator to numbers
- Format column widths (double click on column line between A and B to auto-fit column A to text-width).
- Removing gridlines, formula bar, headings
- Center across selection
- Borders, Background colors, centering, bold text.
- Using CTRL key to do piece-wise selection of cells

What to Know for Exam

- Entering simple calculations correctly
- Be able to use all types of cell references correctly
- Use all functions discussed in video (EXP, SUM, MAX, MIN, AVERAGE, DAYS)
- Be able to recover from common errors
- Using Excel Table: Single and double sorting; filtering
- Be able to Freeze Panes: part to the left and above of selection will freeze
- Use the proper graph to display data. Specifically be able to graph a yield curve with provided data.
- Graph titles, Axis Titles, axis formatting, graph formatting
- Any formatting discussed in videos (decimals, gridlines, comma separator, auto-fit)