

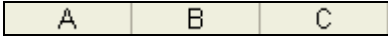
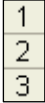
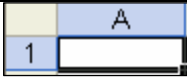
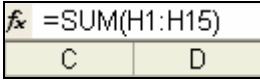
EXCEL 2003

DISCLAIMER:









This reference guide is meant for experienced Microsoft Excel users. It provides a list of quick tips and shortcuts for familiar features. This guide does **NOT** replace training or a comprehensive instruction manual.

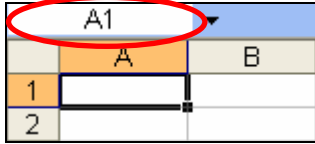
OVERVIEW

Excel is a tool for manipulating numbers, calculations, charts, and lists.

Workbook	A file containing one or more worksheets
Worksheet	One page in a workbook file
Column	<p>A vertical section of a worksheet, labeled with letters of the alphabet (A through IV) A column spans all rows from the top of a worksheet to the bottom</p> 
Row	 <p>A horizontal worksheet section labeled with numbers (1 through 65,536) A row spans all columns from left to right across a worksheet</p>
Cell	 <p>The intersection of a column and row labeled with the column letter and row number. Example: A1</p>
Range	<p>A group of adjacent cells that form a rectangle Range names include the first and last cells, separated by a colon Example: A1: C10</p>
Named range	<p>A range of cells with a descriptive name that can be used in formulas Example: a range named sales might includes cells A10:E10 The formula =sum(sales) adds the numbers in the named range</p>
Formula bar	<p>An area above the column letters that displays formulas and functions</p> 
Formula	<p>An equation that calculates numbers on a worksheet Formulas begin with = Important: Use cell addresses in formulas instead of actual numbers so results automatically recalculate when a cell value changes</p>
Function	<p>A built-in formula, included with Excel software, that performs a complex but often-used calculation Example: average a series of numbers or calculate a monthly loan payment</p>
Chart	A graph depicting numbers on a worksheet
List	<p>Data organized into columns and rows Each column is labeled with a descriptive name Each row contains one record Use lists to sort, filter, and graph</p>

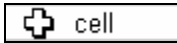

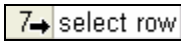

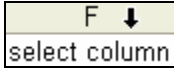



THE BASICS:
NEW, OPEN, SAVE, PRINT PREVIEW, PRINT, SPELL CHECK

To accomplish this ↓	Use this menu ↓	(Or) button ↓	(Or) key combo ↓
Start a new worksheet	File > New		Ctrl N
Open an existing worksheet	File > Open		Ctrl O
Save a worksheet	File > Save		Ctrl S
Save as a web page	File > Save as Web Page	None	None
	Check Add interactivity to enable web viewers work with the data on your Web page in a browser		
	Uncheck Add interactivity to prevent web viewers from changing data in a browser		
Close all open documents	 Shift File > Close All	None	None
Print preview	File > Print Preview		None
Print a document	File > Print		Ctrl P
Spell check	Tools > Spelling		F7




<p style="text-align: center;">NAVIGATION MOVE EFFICIENTLY THROUGH A WORKBOOK</p>			
To accomplish this ↓	Use this menu ↓	(Or) button ↓	(Or) key combo ↓
Move one cell to the right	None	None	→
Move one cell to the left	None	None	←
Move one cell up	None	None	↑
Move one cell down	None	None	↓
Move one screen down	None	None	PgDn
Move one screen up	None	None	PgUp
Move one screen right	None	None	Alt PgDn
Move one screen left	None	None	Alt PgUp
Move one worksheet forward	None	None	Ctrl PgDn
Move one worksheet back	None	None	Ctrl PgUp
Move to a specific cell	Edit > Go To	<p>Type cell address in the Name box:</p> 	F5 or Ctrl G
Move to the last cell containing data	Edit > Go To > Last Cell		Ctrl End
Keep column and row headings visible while scrolling	Click the cell below and to the right of where you want the split to appear Windows > Freeze Panes		

SELECTION

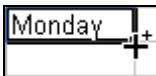
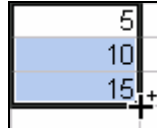
HIGHLIGHTING BLOCKS OF TEXT AND NUMBERS

To accomplish this ↓	Use this mouse procedure ↓	
Select one cell	Click in the cell	
Select several cells	Click inside the first cell Make sure the mouse pointer is a white plus sign Drag down or across multiple cells	
Select one row	Click the row number	
Select multiple rows	Drag down multiple row numbers Make sure the mouse pointer is a black arrow pointing right	
Select one column	Click the column letter	
Select multiple columns	Drag across multiple column letters Make sure the mouse pointer is a black arrow pointing down	
Select a large range of cells	Click in first cell then release the button. Scroll until last cell is visible.  click in last cell	
Select an entire worksheet.		


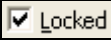


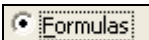
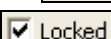
COLUMNS AND ROWS

To accomplish this ↓	Use this menu ↓	(Or) button ↓	(Or) key combo ↓
Change column width	Format > Column > Width	Position the mouse pointer on the line dividing two columns  Drag the mouse left or right	
Auto-fit column width	Format > Column > AutoFit Selection		Double-click the dividing line between two column headings
Change row height	Format > Row > Height	Position the mouse pointer on the line dividing two rows.  Drag the mouse up or down	
Auto-fit row height	Format > Row > AutoFit		Double-click the dividing line between two row headings
Insert a column	Insert > Column	None	None
Insert a row	Insert > Row	None	None
Hide a column or row	Select the column or row you want to hide. Format > Column > Hide		
Display a hidden column or row	Select the columns or rows beside those that are hidden Format > Column > Unhide		










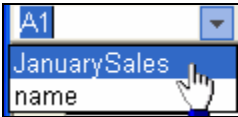
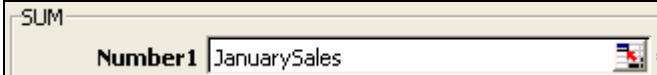
DATA ENTRY

To accomplish this ↓	Do This ↓
Enter data	Click in a cell and type Press Enter ↵ or click ✔ on the formula bar to complete the entry Press Esc or click ✖ on the formula bar to cancel an entry
Enter data in a group of cells	Select a range of cells before typing Press Enter ↵ to advance from cell to cell
Delete cell contents	Del Note: Do not delete by pressing Spacebar ! If you space instead of delete, some formulas will return inaccurate results
Copy contents of cell above	Ctrl ' (apostrophe) or Ctrl D
Enter current date	Ctrl ; (semi-colon)
Enter identical data in multiple cells	Select multiple cells Type text or numbers Press Ctrl Enter ↵
Fill (Repeat a series)	Type a month, day of the week, year or a data pattern Point to the lower right corner of the cell or cells containing the pattern When you drag the black plus sign down or across, Excel will complete the pattern Examples: <div style="display: flex; align-items: center; justify-content: center; gap: 20px;"> <div style="text-align: center;">  </div> <div style="font-size: 2em;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> Monday Tuesday Wednesday Thursday Friday </div> <div style="font-size: 2em;">or</div> <div style="text-align: center;">  </div> </div>
Pick from a list	Data > Validation > Allow: List Type acceptable entries separated by commas Example: <div style="border: 1px solid gray; padding: 5px; width: fit-content;"> Source: Books, Newsletters, Web sites </div> Copy the cell down as needed To use the list, click in the cell Then click the drop-down arrow to select from the list <div style="border: 1px solid gray; padding: 5px; width: fit-content;"> ▼ Books Newsletters Web sites </div>

DATA ENTRY (continued)

To accomplish this ↓	Do This ↓
Protect a worksheet from change	Select all cells  Format > Cells > Protection tab  Tools > Protection > Protect Sheet
Protect formulas from change, allowing edits to other data	Select all cells  Format > Cells > Protection tab  Edit > Go To > Special > Formulas  Format > Cells > Protection tab  Tools > Protection > Protect Sheet Note: Remember your password or your spreadsheet can not be unprotected!
Remove protection	Tools > Protection > Unprotect Sheet Type your password

EDITING, WORKSHEETS AND RANGE NAMES

To accomplish this ↓	Use this menu ↓	(Or) button ↓
Replace text in a cell	Retype the text to replace the entire cell contents	
Add text to a cell	Double-click and position cursor where you want to add text	
Delete cell contents	Edit > Clear > Contents Do NOT erase by pressing 	
Edit a formula	Double-click the formula to enter edit mode The formula is color-coded for easy editing Use the mouse to correct the cell references	
Insert a worksheet	Insert > Worksheet	Right-click on a sheet tab > Insert 
Rename a worksheet	Format > Sheet > Rename	Right-click on a sheet tab > Rename 
Remove a worksheet	Edit > Delete Sheet	Right-click on a sheet tab > Delete 
Create a named range	Select cells in the range Insert > Name > Define > Type a descriptive name (no spaces) Example: JanuarySales	Type a name in the name box Press Enter 
Go to a range name	Edit > Go To > Select range name	Select the name from the name box 
Use a range name in a formula or function	Insert > Function > Select Function Click in the Function Arguments box Insert > Name > Paste > Choose named range Example: 	None
Delete a range name	Insert > Name > Define > Select the name > Delete	None

CREATING FORMULAS

Important: Always use cell addresses in formulas instead of specific numbers. Otherwise, results will not automatically recalculate when a cell value changes.

You may combine mathematical operations within a formula.
They will be evaluated according to the order of operations.

Order of operations:

If you combine several operators in a single formula, Excel performs the operations in the following order: parentheses, exponentiation, multiplication, division, addition, subtraction

To change the order of evaluation, enclose in parentheses the part of the formula to be calculated first.

To accomplish this ↓	Do this ↓
<p>Addition</p> <p>Example:</p> <p>= A1+A2+A3</p>	<p>Type =</p> <p>Click the first cell you want to add</p> <p>Type +</p> <p>Continue to click cells and type + until you reference all numbers you want to add (<i>Do NOT end the formula with +</i>)</p> <p>Press <input type="button" value="Enter ↵"/></p>
<p>Subtraction</p> <p>Example:</p> <p>= A1 - A2</p>	<p>Type =</p> <p>Click the starting cell</p> <p>Type -</p> <p>Continue to click cells and type - until you reference all numbers you want to subtract (<i>Do NOT end the formula with -</i>)</p> <p>Press <input type="button" value="Enter ↵"/></p>
<p>Multiplication</p> <p>Example:</p> <p>=A1 * A2</p>	<p>Type =</p> <p>Click the starting cell</p> <p>Type *</p> <p>Continue to click cells and type * until you reference all numbers you want to multiply (<i>Do NOT end the formula with *</i>)</p> <p>Press <input type="button" value="Enter ↵"/></p>
<p>Division</p> <p>Example:</p> <p>=A1 / A2</p>	<p>Type =</p> <p>Click the starting cell</p> <p>Type /</p> <p>Continue to click cells and type / until you reference all numbers you want to divide (<i>Do NOT end the formula with /</i>)</p> <p>Press <input type="button" value="Enter ↵"/></p>

RELATIVE VS. ABSOLUTE REFERENCES

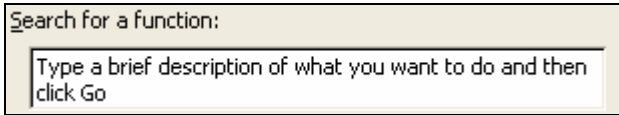

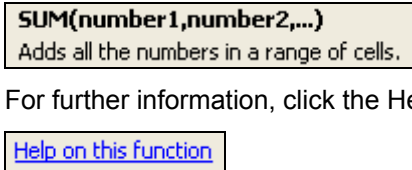

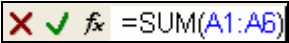
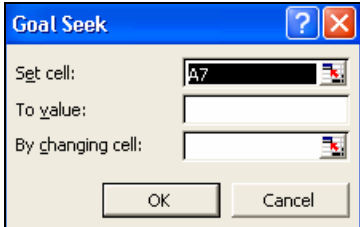
Relative reference	<p>When you copy a formula, the cell references adjust to their new location. Example: If you copy the formula =A1+A2 to column B, it will adjust to =B1+B2</p> <p>This is known as a relative reference, since the formula's location is relative to the cells it references; i.e. the formula adjusts itself when it is copied.</p>
Absolute reference	<p>On occasion, relative references are not desirable. For example, if a commission or tax rate is stored in one cell, the reference to that cell should not change.</p> <p>To prevent cell references from changing, create an absolute reference.</p>
To accomplish this ↓	Do this ↓
Create an absolute reference	<p>Write a formula using the procedure described above. However, when you click on the cell you want to make absolute, press F4.</p> <p>\$ appears around the cell reference.</p> <p>Example: \$C\$10 The \$ prevents the cell reference from adjusting when copied.</p>

USING FUNCTIONS

A function is a pre-defined formula that comes with Excel.
When you use a function, you must follow its required syntax, or structure.

The structure of a function begins with an equal sign (=), followed by the function name, an opening parenthesis, the arguments for the function separated by commas, and a closing parenthesis.

Example: =SUM(A1:A10)





To accomplish this ↓	Use this menu ↓	(Or) button ↓
List available functions	Insert > Function > Type 	
Understand a function	Observe the syntax (rules) for the function Read the description at the bottom of the dialog box  For further information, click the Help link Help on this function	None
Write a function	Insert > Function Select a function from the list Click OK Point to the cells or range to be referenced Hint: Drag the dialog box if it obscures the cell(s) Click OK Hint: Verify the answer is accurate	
Edit a function	Double-click the function Drag across the range address in the function to highlight it Drag across the correct range on the worksheet	
Most formulas and functions calculate an answer based on a cell or range you specify. To the contrary, if you specify the answer you want, then Goal Seek and Solver can identify the acceptable input values.		
Goal Seek	Tools > Goal Seek 	
Solver	Tools > Solver Note: Solver is an Add-In. You may have to install it before it is available in the Tools menu	

ERROR CHECKING











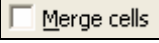
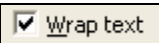
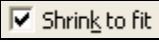
View > Toolbars > Formula Auditing



Note: Excel will print the arrows that display when using the auditing toolbar.



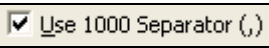

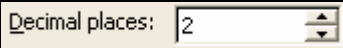

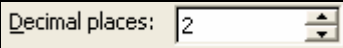



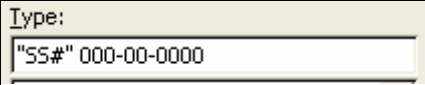
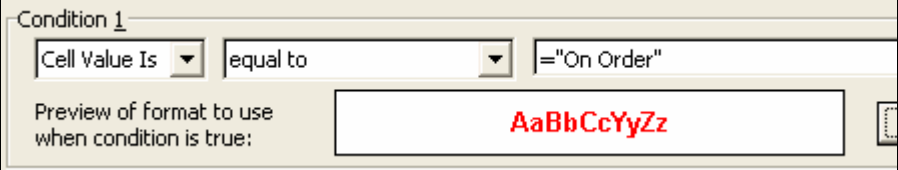
To accomplish this ↓	Use this menu ↓	(Or) button ↓
Locate errors including: <ul style="list-style-type: none"> • formulas omitting cells in range • formulas referring to empty cells • number stored as text 	Tools > Formula Auditing > Trace Errors	
Display cells that are referenced in a formula	Tools > Formula Auditing > Trace Precedents	
Display formulas in which the active cell is used	Tools > Formula Auditing > Trace Dependents	
Hide the auditing arrows	Tools > Formula Auditing > Remove All Arrows	

FORMATTING TEXT

To accomplish this ↓	Use this menu ↓	(Or) button ↓	(Or) key combo ↓
Change font (type style)	Format > Cells > Choose Font		None
Increase or decrease font size	Format > Cells > Choose Size		None
Add / remove bold	Format > Cells > Font Style		Ctrl B
Add / remove <i>italics</i>	Format > Cells > > Font tab > Font Style		Ctrl I
Add / remove <u>underline</u>	Format > Cells > Underline style		Ctrl U
<i>Note: Underlined text may indicate a hyperlink. Try bold or italics to emphasize text.</i>			
Left-align text	Format > Cells > Alignment		None
Right align text	Format > Cells > Alignment		None
Center text within a cell	Format > Cells > Alignment		None
Merge cells into one	Format > Cells > Alignment > Merge Cells	None	None
Center text across multiple cells	Format > Cells > Alignment > 		None
Split merged cells	Format > Cells > Alignment > 	None	None
Align text vertically	Format > Cells > Alignment > Vertical	None	None
Wrap text within a cell	Format > Cells > Alignment > 	None	None
Force contents to fit cell	Format > Cells > Alignment > 	None	None






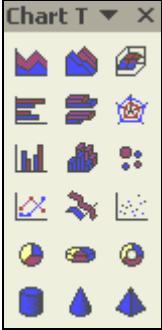

FORMATTING NUMBERS

Formatting changes the *appearance* of numbers, not their values.



To accomplish this ↓	Use this menu ↓	(Or) button ↓
Display \$	Format > Cells > Number > Currency	
Display \$ that align vertically	Format > Cells > Number > Accounting	
Display %	Format > Cells > Number > Percentage	
Display comma for thousands	Format > Cells > Number 	
Increase decimals	Format > Cells > Number > 	
Decrease decimals	Format > Cells > Number > 	
Add borders to cell or range	Format > Cells > Border	
Use pre-set formats	Format > Autoformat	None
Shade a cell or range	Format > Cells > Patterns	
Custom formats	Format > Cells > Number > Custom	None
Use to automatically enter formatting characters; i.e. social security numbers, phone numbers, part numbers	Click in the Type box Use an existing code as a starting point 0 indicates a required digit # indicates an optional digit Type "" around text Example: 	
Conditional formatting	Format > Conditional Formatting	
Use to automatically format numbers that meet one or more conditions	<ul style="list-style-type: none"> Specify the situation(s) in which special formatting should be applied Specify the format to apply when the situation exists 	

CHARTS

Definitions

X Axis	Horizontal axis at bottom of chart (except pie charts) Can be text, numbers or dates		
Y Axis	Vertical axis (except pie charts) Always numeric		
Legend	A box that identifies the patterns and colors of chart elements		
Title	Descriptive text, usually at the top of a chart		
Data Series	Related data points plotted on a chart Can be a set of bars, lines, points or other symbols that relate to data on a worksheet Points in a series have a common color or pattern		
To accomplish this ↓	Use this menu ↓	(Or) button ↓	(Or) key combo ↓
Create a chart on a separate sheet	Insert > Chart 		F11
Create a chart on the same sheet as the data	Insert > Chart 		
Add data to the chart	Copy the new data in the spreadsheet Paste it onto the chart		Ctrl C Ctrl V
Remove data from the chart	Click any point in the series to select the series Edit > Clear > Series	None	Del
Change the chart type	Chart > Chart Type		
Add or remove a legend	Chart > Chart Options > Legend		
Format a chart element	Select the item you want to format Format > (Selected Item)	None	Double-click the element
Add or remove a chart title	Chart > Chart Options > Titles tab	None	None




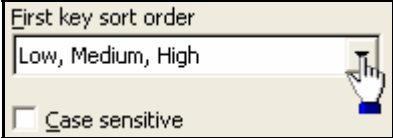

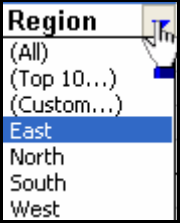
CHARTS (continued)

To accomplish this ↓	Use this menu ↓	(Or) button ↓	(Or) key combo ↓
Annotate a chart	View > Toolbars > Drawing Select a drawing tool Drag to draw shape on chart		
Delete a chart	Select the chart Edit > Clear All		Del
Delete a chart sheet	Edit > Delete Sheet		




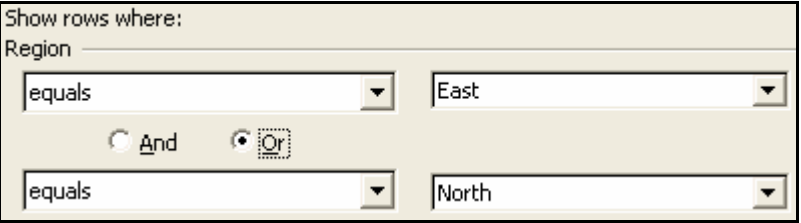
LISTS SORTING AND FILTERING

Preliminaries:



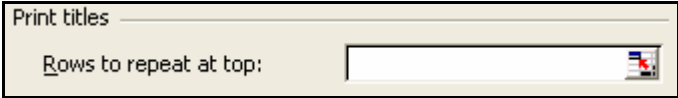
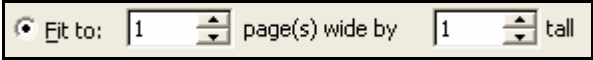

1. The row of column headings should be formatted differently from the data in the list
2. The list must be single-spaced

To accomplish this ↓	Use this menu ↓	(Or) button ↓
Sort in ascending (alphanumeric) order	Data > Sort	
Sort in descending (reverse) alphanumeric order	Data > Sort	
Customize a sort order	Tools > Options > Custom Lists Type the entries in preferred sort order, separated by commas  Click Add	
Apply the customized sort order	Data > Sort > Options Choose the custom list 	
Apply a filter	Data > Filter > AutoFilter Drop-down arrows appear beside each column header  Note: You may select multiple criteria	Click an arrow and choose the criterion 

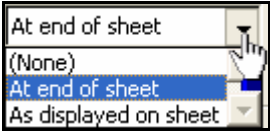


LISTS (continued)


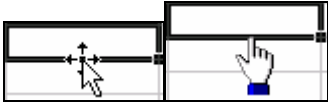
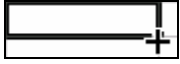
To accomplish this ↓	Use this menu ↓	(Or) button ↓
A filter displays rows that meet one or more conditions (criteria) you specify Filtering hides rows you don't want to view Example: Region = East; Sales > \$50,000; Both conditions; Either condition		
Apply a filter	Data > Filter > AutoFilter	Click an arrow to choose the criterion 
	Arrows for filtered columns are blue	
Remove a filter	Data > Filter > Show All	
Two or more criteria	Select criteria from more than one column	
More complex criteria	Choose Custom from the drop-down list of filters  	
Subtotal	1 – Sort the list 2 – Data > Subtotals 3 – (At each change in ...) Select the sorted column 4 – Select the function 5 – Choose the column to be subtotaled	
Remove subtotals	Data > Subtotals > Remove All	





PRINTING ISSUES

To accomplish this ↓	Use this menu ↓	(Or) mouse movement ↓
Set print area	Select the range you want to print File > Print Area > Set Print Area	None
(Dashed lines indicate page breaks)	Or select the range you want to print File > Page Setup 	None
Change print area	Same as setting a print area	None
Remove the print area	File > Print Area > Clear Print Area	None
Preview page breaks	View > Page Break Preview	None
Exit Page Break Preview	View > Normal	None
Change page break	View > Page Break Preview Drag blue page break borders	
Insert a page break	Click in the cell to be the beginning cell on the next page Insert > Page Break	None
Delete a page break	Click in the cell below the page break Insert > Remove Page Break	None
Print column headings at the top of every page (This is not the same as a page header)	File > Page Setup > Sheet tab > Rows to repeat at top 	None
Fit the data on one page	File > Page Setup > Page tab 	None
Print a filtered list	Apply the filter File > Print	

PRINTING ISSUES (CONTINUED)

To accomplish this ↓	Use this menu ↓	(Or) button ↓
Print notes (comments)	File > Page Setup > 	None
Print a chart on a sheet	Deselect the chart File > Print	
Print a full-page chart	Select the chart File > Print	

TIPS		
WHAT TO DO	WHY TO DO IT	
<p>Watch the shape of the mouse pointer.</p> <p>The shape indicates the function to be performed.</p>	Mouse Pointer Shape ↓ 	Function ↓ Selects one or more cells
		Moves a cell
		Fill (Repeats a cell, range or pattern)
Select a range of cells before typing.	When you press Enter (↵) the cell pointer will advance through the “path” you have highlighted	
Type text and numbers before formatting	<ul style="list-style-type: none"> ♦ You will concentrate on the content first without the distractions of formatting tasks ♦ You save formatting time. Just apply formatting once instead of turning a format on before typing, then off when finished typing 	
Use shortcut menus to view context-sensitive options (click the right mouse button). Newer keyboards have a button to display shortcut menus.	<ul style="list-style-type: none"> ♦ Only appropriate options are displayed ♦ You save energy because you don't have to move the mouse up to the menu bar 	
Right-click any toolbar button to view a list of available toolbars.	Fewer steps than using the View > Toolbars menu option	
Use range names (see Range Names and Editing)	Range names are more descriptive than cell addresses and easier to reference	
If you have no range names, use cell addresses in formulas and functions	Formulas will recalculate when data changes	
Use the mouse to highlight cells when writing formulas and functions.	Clicking a cell is faster, more accurate and more efficient than typing its address	

COMMON PROBLEMS	SOLUTION
My menu options are grayed and unavailable	<p>You haven't completed entering data in a cell. Press <input type="button" value="Enter ↵"/></p> <p>  These symbols above column B are symptoms that the data has not been entered into the cell</p> <p> signifies Cancel</p> <p> signifies Enter</p>
##### appear in a cell	Widen the column
The screen scrolls too fast when I try to select cells	<p>Click the beginning cell then release the mouse button</p> <p>Scroll until the ending cell is visible</p> <p><input type="button" value="⇧ Shift"/> click the ending cell</p>
My formulas don't update when I change values	<p>You wrote a formula using numbers instead of cell addresses.</p> <p>Correct formula: <input type="text" value="=A1+A2"/></p> <p>Incorrect formula: <input type="text" value="=100 + 50"/></p>
My formula doesn't work when it's copied	Use an absolute reference
One column prints alone on page 2	Use Fit To Page under Page Setup
I want one or more rows of data from my worksheet to repeat at the top of every page	Use Print Titles (See printing topics above)
I often print several different ranges of data	Use named ranges
My formulas don't work when I copy them	Try using an absolute reference to prevent one or more references from adjusting
Excel displays a number instead of a date	Format > Cells > Number > Date > Choose date style
Excel sorts my dates alphabetically instead of chronologically	Convert your dates from text to numbers (See previous tip)
My sort doesn't work right when I double-space a list	Instead of inserting blank rows to double-space, increase row height to give the impression of double-spacing