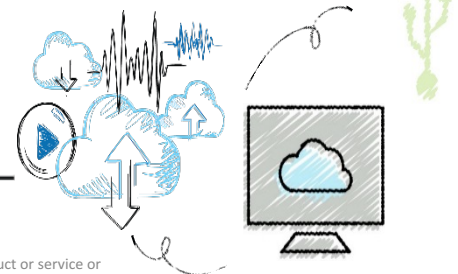


Shelly Cashman: Microsoft Excel 2016

Module 2: Formulas, Functions, and Formatting





Objectives (Slide 1 of 2)

- Use Flash Fill
- Enter formulas using the keyboard
- Enter formulas using Point mode
- Apply the MAX, MIN, and AVERAGE functions
- Verify a formula using Range Finder
- Apply a theme to a workbook
- Apply a date format to a cell or range



Objectives (Slide 2 of 2)

- Add conditional formatting to cells
- Change column width and row height
- Check the spelling on a worksheet
- Change margins and headers in Page Layout view
- Preview and print versions and sections of a worksheet



Project – Worksheet with Formulas and Functions (Slide 1 of 2)

Olivia's Art Supply Salary Report - Excel

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do... Sign in Share

Clipboard Font Alignment Number Styles Cells Editing

A18

Olivia's Art Supply Salary Report										
Employee	Email Address	Dependents	Hours Worked	Hourly Pay Rate	Gross Pay	Federal Tax	State Tax	Tax %	Net Pay	Hire Date
Bennett, Joanne	jbennett@email.com	2	64.25	\$ 19.75	\$ 1,268.94	\$ 268.47	\$ 50.76	25.16%	\$ 949.71	04/05/12
Fred, Michael	mfred@email.com	1	80.00	23.10	1,848.00	401.21	73.92	25.71%	1,372.87	05/07/13
Emmanuel, Celine	cemmanuel@email.com	0	72.50	18.65	1,352.13	297.47	54.09	26.00%	1,000.57	12/01/11
Khan, Theresa	tkhan@email.com	3	60.00	18.00	1,080.00	221.55	43.20	24.51%	815.25	01/03/14
Mart, Samuel	smart@email.com	2	46.00	15.90	731.40	150.21	29.26	24.54%	551.94	12/03/10
O'Herman, Faye	foherman@email.com	0	75.75	21.05	1,594.54	350.80	63.78	26.00%	1,179.96	03/07/11
Rice, James	jrice@email.com	0	80.00	22.50	1,800.00	396.00	72.00	26.00%	1,332.00	02/05/11
Villanova, Susan	svillanova@email.com	2	74.25	21.02	1,560.74	332.66	62.43	25.31%	1,165.64	05/06/04
Xiao, Jun	jxiao@email.com	1	68.00	18.43	1,253.24	270.36	50.13	25.57%	932.75	09/12/15
Totals			620.75		\$ 12,486.98	\$ 2,686.72	\$ 499.56	25.53%	\$ 9,300.70	
Highest		3	80.00	\$23.10	\$1,848.00	\$401.21	\$73.92	26.00%	\$1,372.87	
Lowest		0	46.00	\$15.90	\$731.40	\$150.21	\$29.26	24.51%	\$551.94	
Average		1.222222222	68.97	\$19.82	\$1,387.66	\$298.75	\$55.51		\$1,033.41	

Salary Report



Project – Worksheet with Formulas and Functions (Slide 2 of 2)

- Roadmap
 - Enter formulas in the worksheet
 - Enter functions in the worksheet
 - Verify formulas in the worksheet
 - Format the worksheet
 - Check spelling
 - Print the worksheet



Entering the Titles and Numbers into the Worksheet

- To Enter the Worksheet Title and Subtitle
 - Run Excel and create a blank workbook
 - Select cell A1 and type the desired text, then press the DOWN ARROW key to enter the worksheet title
 - Select cell A2 and type the desired then press the DOWN ARROW key to enter the worksheet subtitle
- To Enter the Column Titles
 - Select cell A3 and type the desired text, then press the RIGHT ARROW key to enter the column heading
 - Continue until all the columns you desire have headings



Flash Fill (Slide 1 of 2)

- To Use Flash Fill
 - Click a cell
 - Type desired text and then press the DOWN ARROW to select the next cell
 - Type desired text again following the same pattern (for example an email address)
 - Click Data on the ribbon to select the Data tab
 - Click Flash Fill to enter similarly formatted text



Flash Fill (Slide 2 of 2)

- To Enter the Row Titles
 - Select a cell in the A column
 - Type desired text and then press the DOWN ARROW key to enter a row header.
 - Continue until all Rows have a header
- To Change the Sheet Tab Name and Color
 - Double-click the Sheet1 tab and enter the desired text as the sheet tab name and then press the ENTER key
 - Right-click the sheet tab to display the shortcut menu
 - Point to Tab Color on the shortcut menu to display the Tab Color gallery. Click desired color
 - Save the workbook



Entering Formulas (Slide 1 of 3)

- To Enter a Formula Using the Keyboard
 - With the cell to contain the formula selected, type the formula in the cell to display the formula in the formula bar and in the current cell and to display colored borders around the cells referenced in the formula
 - Press the right arrow key to complete the arithmetic operation indicated by the formula, to display the result in the worksheet, and to select the cell to the right



Entering Formulas (Slide 2 of 3)

formula begins with equal sign

as formula is typed, it appears in formula bar and in active cell F4

colored cell borders indicate which cells are included in formula in active cell

	A	B	C	D	E	F	G	H	I	J
1	Olivia's Art Supply									
2	Salary Report									
3	Employee	Email	Add	Depender	Worked	Hours	Hourly	Pay Rate	Gross Pay	Federal Tax
4	Bennett, J	jbennette@ar			2	64.25		19.75	=d4*e4	
5	Fred, Mich	mfred@ar			1	80		27.1		
6	Emmanuel	cemmanu@ar			0	72.5		18.65		
7	Khan, The	tkhan@ar			3	60		18		
8	Mant, Sam	smant@ar			2	46		15.9		



Entering Formulas (Slide 3 of 3)

- To Enter Formulas Using Point Mode
 - With the cell that is to contain the formula selected, begin typing the formula and then click another cell to add a cell reference in the formula
 - Finish typing the rest of the formula
 - Click the Enter box in the formula bar when you have finished entering the formula

Olivia's Art Supply Salary Report - Excel

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...

From Access From Web From Other Sources Existing Connections New Query Get External Data Connections Properties Edit Links Sort Filter Clear Reapply Advanced

14 X ✓ Σ = (G4+H4)/F4

Enter button

	A	B	C	D	E	F	G	H	I	J	K	L
1	Olivia's Art Supply											
2	Salary Report											
3	Employee Email	Add Dependent	Hours Worked	Hourly Pay Rate	Gross Pay	Federal Tax	State Tax	Tax %	Net Pay	Hire Date		
4	Bennett, J	jbennett@oliviaart.com	2	64.25	19.75	1268.938	268.4655	50.7575	0.251567		4/5/2012	
5	Fred, Mich	mfred@oliviaart.com	1	80	23.1						5/7/2013	
6	Emmanue	cemmanu@oliviaart.com	0	72.5	18.65						12/1/2011	
7	Khan, The	tkhan@oliviaart.com	3	60	18						1/3/2014	
8	Mant, Sam	smant@oliviaart.com	2	46	15.9						12/3/2010	

result of calculation



Option Buttons

Table 2-4 Option Buttons in Excel

Name	Menu Function
Auto Fill Options	Provides options for how to fill cells following a fill operation, such as dragging the fill handle
AutoCorrect Options	Undoes an automatic correction, stops future automatic corrections of this type, or causes Excel to display the AutoCorrect Options dialog box
Insert Options	Lists formatting options following an insertion of cells, rows, or columns
Paste Options	Specifies how moved or pasted items should appear (for example, with original formatting, without formatting, or with different formatting)
Trace Error	Lists error-checking options following the assignment of an invalid formula to a cell



Using the AVERAGE, MAX, and MIN Functions (Slide 1 of 6)

- To Determine the Highest Number in a Range of Numbers Using the Insert Function Dialog box
 - Select the cell to contain the maximum number
 - Click the Insert Function box in the formula bar to display the Insert Function dialog box
 - If necessary, scroll to and then click MAX in the Select a function list
 - Click the OK button to display the Function Arguments dialog box and type the cell range in the Number1 box to enter the first argument of the function
 - Click the OK button to display the highest value in the chosen range in the selected cell





Using the AVERAGE, MAX, and MIN Functions (Slide 3 of 6)

- To Determine the Lowest Number in a Range of Numbers Using the Sum Menu
 - Select cell that is to contain the minimum value and then click the Sum arrow in the HOME tab
 - Click Min to display the MIN function in the formula bar and in the active cell
 - Drag through the range of values of which you want to determine the lowest number
 - Click the Enter box to determine the lowest value in the range and display the result in the formula bar and in the selected cell





Using the AVERAGE, MAX, and MIN Functions (Slide 5 of 6)

- To Determine the Average of a Range of Numbers Using the Keyboard
 - Select the cell that will contain the average
 - Type =av in the cell to display the Formula AutoComplete list Press the DOWN ARROW key to highlight the required formula
 - Double-click AVERAGE in the Formula AutoComplete list to select the function
 - Select the range to be averaged to insert the range as the argument to the function
 - Click the Enter box to compute the average of the numbers in the selected range and display the result in the selected cell



Using the AVERAGE, MAX, and MIN Functions (Slide 6 of 6)

Olivia's Art Supply Salary Report - Excel

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...

Cut Copy Paste Format Painter Clipboard

Font B I U A- A+ Merge & Center

Alignment

Number

MAX =av

Employee	Email	Add	Depender	Hours Worked	Hourly Pay Rate	Gross Pay	Federal Tax	State Tax	Tax %	Net Pay	Hire Date	
Bennett, J	Jbennett@			2	64.25	19.75	1268.938	268.4655	50.7575	0.251567	949.7146	4/5/2012
Fred, Mid	mfred@e			1	80	23.1	1848	401.2096	73.92	0.257105	1372.87	5/7/2013
Emmanue	cemmanu			0	72.5	18.65	1352.125	297.46			1000.573	12/1/2011
Khan, The	tkhan@e			3	60	18	1080	221.54			815.2512	1/3/2014
Mant, San	smant@e			2	46	15.9	731.4	150.2072	29.239	0.248399	551.9368	12/3/2010
Otterman	fotterman			0	75.75	21.05	1594.538	350.7983	63.7815	0.26	1179.958	3/7/2011
Rice, Jam	jrice@e			0	80	22.5	1800	396	72	0.26	1332	2/5/2011
Villanova	svillanova			2	74.25	21.02	1560.735	332.6609	62.4294	0.253144	1165.645	5/6/2004
Xiao, Jun	jxiao@e			1	68	18.43	1253.24	270.3624	50.1296	0.255731	932.748	9/12/2015
Totals					626.75		12488.98	2688.72	499.559	0.255287	9300.696	
Highest				3								
Lowest				0								
Average												

cell C16

AVERAGE function name

Formula AutoComplete list

Formula AutoComplete list: AVERAGE, AVERAGEA, AVERAGEIF, AVERAGEIFS



Verifying Formulas using Range Finder

- To Verify a Formula Using Range Finder
 - Double-click a cell to activate Range Finder
 - Press the ESC key to quit Range Finder and then click anywhere in the worksheet to deselect the current cell

Olivia's Art Supply Salary Report - Excel

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...

Clipboard Font Number Styles

MAX X ✓ fx =(G4+H4)/F4

cells referenced in formula in active cell are highlighted with corresponding colors

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Olivia's Art Supply													
2	Salary Report													
3	Employee Email	Add	Depender	Worked	Hours	Hourly	Pay Rate	Gross Pay	Federal Tax	State Tax	Tax %	Net Pay	Hire Date	
4	Bennett, J	j.bennett@oliviaart.com		2	64.25	19.75	1268.938	268.4655	50.7575	0.257105		1372.87	4/5/2012	
5	Fred, Mich	mfred@oliviaart.com		1	80	23.1	1848	401.2096	73.92	0.257105		1000.573	5/7/2013	
					72.5	18.65	1350	255.0	50.7575	0.257105		1000.573	12/1/2011	



Formatting the Worksheet (Slide 1 of 11)

Olivia's Art Supply Salary Report - Excel

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...

Clipboard Font Alignment Number Styles Cells Editing

Calibri 11 A Wrap Text General

B I U Merge & Center \$ % + Conditional Format as Table Cell Insert Delete Format AutoSum Fill Clear

1 Olivia's Art Supply
2 Salary Report

	Hours	Hourly																		
	Pay Rate	Gross Pay	Federal Tax	State Tax	Tax %	Net Pay	Hire Date													
3	Bennett, J. jbennett@	2	64.25	19.75	1268.938	268.4655	50.7575	0.251567	949.7146	4/5/2012										
4	Fred, M. mfred@	1	80	23.1	1848	401.2696	73.92	0.257105	1372.87	5/7/2013										
5	Emmanuel, C. cemmanu@	0	72.5	18.65	1352.125	297.4675	54.085	0.26	1000.573	12/1/2011										
6	Khan, T. tkhan@	3	60	18	1080	221.5488	43.2	0.245138	815.2512	1/3/2014										
7	Mant, S. smant@	2	46	15.9	731.4	150.2072	29.256	0.245109	551.9368	12/3/2010										
8	Otterman, F. fotterma@	0	75.75	21.05	1594.538	350.7983	63.7815	0.26	1179.958	3/7/2011										
9	Rice, J. jrice@	0	80	22.5	1800	396	72	0.26	1332	2/5/2011										
10	Villanova, S. svillanova@	2	74.25	21.02	1560.735	332.6609	62.4294	0.253144	1165.645	5/6/2004										
11	Xiao, J. jxiao@	1	68	18.43	1253.24	270.3624	50.1296	0.255731	932.748	9/12/2015										
12	Totals		620.75		12488.98	2688.72	499.559	0.255287	9300.696											
13	Highest	3	80	23.1	1848	401.2696	73.92	0.26	1372.87											
14	Lowest	0	46	15.9	731.4	150.2072	29.256	0.245138	551.9368											
15	Average		1.222222	68.97222	19.82222	1387.664	298.7467	55.50656	1033.411											

(a) Unformatted Worksheet

Olivia's Art Supply Salary Report - Excel

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do... Sign in Share

Clipboard Font Alignment Number Styles Cells Editing

Century Gothic 11 A Wrap Text General

B I U Merge & Center \$ % + Conditional Format as Table Cell Insert Delete Format AutoSum Fill Clear

1 Olivia's Art Supply
2 Salary Report

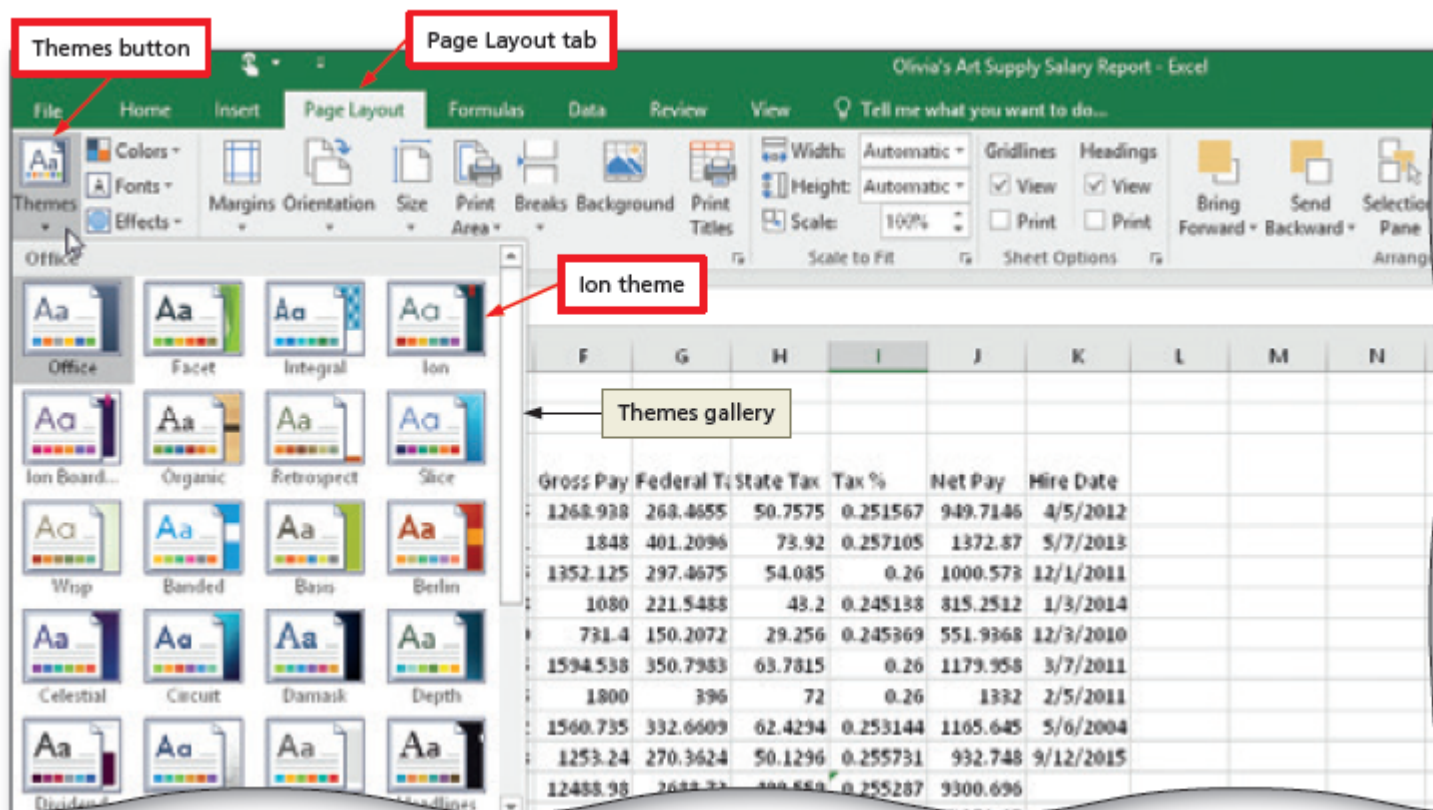
Employee	Email Address	Dependents	Hours Worked	Hourly Pay Rate	Gross Pay	Federal Tax	State Tax	Tax %	Net Pay	Hire Date
Bennett, Joanne	jbennett@email.com	2	64.25	\$ 19.75	\$ 1,268.94	\$ 268.47	\$ 60.76	25.16%	\$ 949.71	04/05/12
Fred, Michael	mfred@email.com	1	80.00	23.10	1,848.00	401.21	73.92	25.71%	1,372.87	05/07/13
Emmanuel, Celine	cemmanu@email.com	0	72.50	18.65	1,352.13	297.47	54.09	26.00%	1,000.57	12/01/11
Khan, Theresa	tkhan@email.com	3	60.00	18.00	1,080.00	221.55	43.20	24.51%	815.25	01/03/14
Mant, Samuel	smant@email.com	2	46.00	15.90	731.40	150.21	29.26	24.54%	551.94	12/03/10
Otterman, Faye	fotterma@email.com	0	75.75	21.05	1,594.54	350.80	63.78	26.00%	1,179.96	03/07/11
Rice, James	jrice@email.com	0	80.00	22.50	1,800.00	396.00	72.00	26.00%	1,332.00	02/05/11
Villanova, Susan	svillanova@email.com	2	74.25	21.02	1,560.74	332.66	62.43	25.31%	1,165.64	05/06/04
Xiao, Jun	jxiao@email.com	1	68.00	18.43	1,253.24	270.36	50.13	25.57%	932.75	09/12/15
Totals			620.75		\$ 12,488.98	\$ 2,688.72	\$ 499.54	25.53%	\$ 9,300.70	
Highest		3	80.00	\$23.10	\$1,848.00	\$401.21	\$73.92	26.00%	\$1,372.87	
Lowest		0	46.00	\$15.90	\$731.40	\$150.21	\$29.26	24.51%	\$551.94	
Average		1.222222222	68.97	\$19.82	\$1,387.66	\$298.75	\$55.51		\$1,033.41	

(b) Formatted Worksheet



Formatting the Worksheet (Slide 2 of 11)

- To Change the Workbook Theme
 - Click the Themes button on the PAGE LAYOUT tab to display the Themes gallery
 - Click the desired theme in the Themes gallery to change the workbook theme





Formatting the Worksheet (Slide 3 of 11)

- To Change the Background Color and Apply a Box Border to the Worksheet Title and Subtitle
 - Select the range to color and then click the Fill Color arrow on the HOME tab to display the Fill Color gallery
 - Click a color to select it and change the background color of the range of cells
 - Click the Borders arrow on the HOME tab to display the Borders gallery
 - Click a border in the Borders gallery to select it and display a border around the selected range



Formatting the Worksheet (Slide 4 of 11)

- To Format Dates and Center Data in Cells
 - Select the range to contain the new date format
 - Click the Format Cells: Number Format Dialog Box Launcher in the HOME tab to display the dialog box
 - If necessary, click the NUMBER tab and click Date in the Category list, and then click a date type to choose the format for the selected range
 - Click the NUMBER tab and then click Date in the Category list to choose the format for the selected range
 - Click the OK button to format the dates in the current column using the selected date format style
 - Select the range to be centered and then click the Center button on the HOME tab to center the data in the selected range



Formatting the Worksheet (Slide 5 of 11)

- To Apply an Accounting Number Format and Comma Style Format Using the Ribbon
 - Select the range to contain the accounting number format
 - While holding down the CTRL key, select the nonadjacent ranges and cells
 - Click the 'Accounting Number Format' button on the HOME tab to apply the accounting number format to the selected nonadjacent ranges
 - Click the Comma Style button on the HOME tab to assign the Comma style format to the selected range



Formatting the Worksheet (Slide 6 of 11)

- To Apply a Currency Style Format with a Floating Dollar Sign Using the Format Cells Dialog Box
 - Select the range to format and then click the Number Format Dialog Box Launcher in the HOME tab to display the Format Cells dialog box
 - If necessary, click the NUMBER tab to display the Number sheet
 - Click Currency in the Category list to select the necessary number format category and then tap or click a style in the Negative numbers list to select the desired currency format
 - Click the OK button to assign the currency style format to the selected ranges



Formatting the Worksheet (Slide 7 of 11)

- To Apply Percent Style Format and Using the Increase Decimal Button
 - Select the range to format
 - Click the Percent Style button in the HOME tab to display the numbers in the selected range as a rounded whole percent
 - Click the Increase Decimal button in the HOME tab two times to display the numbers in the selected range with two decimal places



Formatting the Worksheet (Slide 8 of 11)

- To Apply Conditional Formatting
 - Select the range to which you wish to apply conditional formatting
 - Click the Conditional Formatting button on the HOME tab to display the Conditional Formatting list
 - Click New Rule in the Conditional Formatting list to display the New Formatting Rule dialog box
 - Click the desired rule type in the Select a Rule Type area
 - Select and type the desired values in the Edit the Rule Description area



Table 2-5 Summary of Conditional Formatting Relational Operators

Relational Operator	Formatting will be applied if...
between	cell value is between two numbers
not between	cell value is not between two numbers
equal to	cell value is equal to a number
not equal to	cell value is not equal to a number
greater than	cell value is greater than a number
less than	cell value is less than a number
greater than or equal to	cell value is greater than or equal to a number
less than or equal to	cell value is less than or equal to a number



Formatting the Worksheet (Slide 10 of 11)

- To Change Column Width
 - Drag through column headings to select the columns
 - Point to the boundary on the rightmost column heading to cause the pointer to become a split double arrow
 - Double-click the right boundary of the column to change the width of the selected columns to best fit
 - To resize a column by dragging, point to the boundary of the right side of the column heading. When the mouse pointer changes to a split double arrow, drag to the desired width, and then Lift your finger or release the mouse button to change the column widths



Formatting the Worksheet (Slide 11 of 11)

- To Change the Row Height
 - Point to the boundary below the row heading to resize
 - Drag the boundary to the desired row height and then release the mouse button
 - Lift your finger or release the mouse button to change the row height



Checking Spelling

- To Check Spelling on the Worksheet
 - Click cell A1 so that the spell checker begins at the beginning of the worksheet
 - Click the Spelling button on the REVIEW tab to run the spell checker and display the misspelled words in the Spelling dialog box
 - Apply the desired action to each misspelled word
 - When the spell checker is finished, click the Close button



Printing the Worksheet (Slide 1 of 2)

- To Change the Worksheet's Margins, Header, and Orientation in Page Layout View
 - Click the Page Layout button on the status bar to view the worksheet in Page Layout view
 - Click the Adjust Margins button on the PAGE LAYOUT tab to display the Margins gallery
 - Click the desired margin style to change the worksheet margins to the selected style
 - Click above cell A1 in the center area of the Header area
 - Type the desired worksheet header, and then press the ENTER key
 - Click the 'Change Page Orientation' button on the PAGE LAYOUT tab to display the Change Page Orientation gallery
 - Click the desired orientation in the Orientation gallery to change the worksheet's orientation



Printing the Worksheet (Slide 2 of 2)

- To Print a Section of the Worksheet
 - Select the range to print
 - Click FILE on the ribbon to open Backstage view
 - Click the Print tab to display the Print gallery
 - Click 'Print Active Sheets' in the Settings area on the PRINT tab to display a list of printing options
 - Click Print Selection to print the selected range
 - Click the Print button in the Print gallery to print the selected range of the worksheet
 - Click the Normal button on the status bar to return to Normal view



Displaying and Printing the Formulas Version of the Worksheet

- To Display the Formulas in the Worksheet and Fit the Printout on One Page
 - Press CTRL+ACCENT MARK (`) to display the worksheet with formulas
 - Click the Page Setup Dialog Box Launcher on the PAGE LAYOUT tab to display the Page Setup dialog box
 - If necessary, click the desired Orientation in the Page sheet to select it
 - If necessary, click Fit to in the Scaling area to select it
 - Click the Print button to print the formulas in the worksheet on one page. If necessary, in the Backstage view, select the Print Active Sheets option in the Settings area of the Print gallery
 - When Excel displays the Backstage view, click the Print button to print the worksheet
 - After viewing and printing the formulas version, press CTRL+ACCENT MARK (`) to display the values version