

Common
Occupational
Readiness
Essentials

CERTIFICATION PREP

Microsoft

Excel

2013

D. Michael Floor



Certification Prep Series

by D. Michael Ploor

*Start on Monday.
Test on Friday.*

Certification Prep Series consists of individual guides that provide practice in the basic skills needed to be successful using the corresponding software. No previous software experience is required. Although the guides focus on learning skills, not test taking, users that complete the practice will be prepared to take the official software certification exam and exhibit workplace readiness. Step-by-step instructions demonstrate actual software commands and features, building from basic to advanced. Content is divided into small units for better learning and usage. There is no need to purchase additional materials as all lesson content is created using the software.

- Provides an affordable way to prepare for industry certification versus other methods.
- Integrates easily into existing classroom activities.
- Focuses on hands-on experience to develop skills.

Microsoft Office Products

- Microsoft Word 2013
- Microsoft Excel 2013
- Microsoft PowerPoint 2013
- Microsoft Outlook 2013
- Microsoft Access 2013
- Microsoft Word 2010
- Microsoft Excel 2010
- Microsoft PowerPoint 2010
- Microsoft Outlook 2010
- Microsoft Access 2010

Adobe Products

- Adobe Photoshop CS6
- Adobe Dreamweaver CS6
- Adobe Flash CS6
- Adobe Photoshop CS5
- Adobe Dreamweaver CS5
- Adobe Flash CS5



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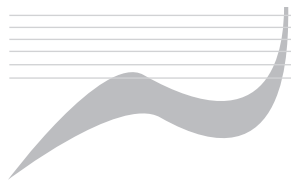


Table of Contents

<i>Lesson 1</i>	<i>Basic Overview</i>	<i>5</i>
<i>Lesson 2</i>	<i>Program Layout</i>	<i>16</i>
<i>Lesson 3</i>	<i>Getting Acquainted</i>	<i>19</i>
<i>Lesson 4</i>	<i>Data Tables</i>	<i>26</i>
<i>Lesson 5</i>	<i>Using Formulas and Functions</i>	<i>36</i>
<i>Lesson 6</i>	<i>Using Templates, Themes, and Images</i>	<i>46</i>
<i>Lesson 7</i>	<i>Pivot Tables, SmartArt Graphics, and Charts</i>	<i>56</i>
	<i>Skills Mastery: Certification Simulation . . .</i>	<i>63</i>



Introduction

The Common Occupational Readiness Essentials (CORE) series of certification preparation guides focuses on mastering the essential basic skills needed as a workplace-ready user of the software. The goal of each CORE certification preparation guide is to provide practice in each essential basic skill required by employers who use the software. To prove workplace readiness, you will also be prepared to take the official certification exam for the software.

CORE Microsoft Excel 2013 will help prepare you to take the Microsoft Office Specialist (MOS) Microsoft Excel 2013 certification exam. It provides step-by-step instruction for the features and commands covered on the certification exam. The focus of the lessons is to practice *using* the actual commands and features instead of creating a complete end product. Additionally, all lesson content is created using the software. The only files that need to be downloaded are for the certification simulation at the end of this guide. Furthermore, each certification preparation guide is broken down into small learning units to enable better comprehension and application of the software. Where required, answers are provided at the back of the certification preparation guide.

Certification as a Microsoft Office Specialist demonstrates an aptitude with Microsoft Office software. MOS certification is offered for Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Microsoft Outlook, Microsoft Access, Microsoft SharePoint, and Microsoft OneNote. Certification exams are provided by Certiport, Inc., through various testing facilities. Visit www.certiport.com for more information on registering for certification exams.

About the Author

D. Michael Ploor is the author of the CORE series of certification preparation guides. Mr. Ploor's students have achieved exceptional results with the CORE certification preparation guides. His students collectively pass more than 500 industry certification exams each year without the need for other preparation materials. Mr. Ploor has demonstrated the strength of integrating the CORE guides in a diverse mix of courses.

Mr. Ploor is also the author of three textbooks on the subject of video game design: *Introduction to Video Game Design*, *Video Game Design Foundations*, and *Video Game Design Composition*. He is a National Board Certified Teacher in Career and Technical Education and holds an MBA degree from the University of South Florida. He maintains professional teaching credentials in Business Education and Education Media Specialist.

Mr. Ploor is at the forefront of innovative teaching and curriculum. He developed STEM curriculum while serving as the lead teacher in the Career Academy of Computer Game Design at Middleton Magnet STEM High School. Mr. Ploor has applied his skills as a STEM Curriculum Integration Specialist in designing innovative curriculum and by collaborating to construct the state standards for video game design in several states. He has also been instrumental in authoring competitive events for Career and Technical Student Organizations such as the Future Business Leaders of America (FBLA) and Phi Beta Lambda (PBL).

In addition to publishing textbooks and lessons, Mr. Ploor provides professional development as a frequent presenter at regional and national conferences to promote CTE education and video game design curriculum.



Lesson 3

Getting Acquainted

Objectives

Students will enter data into a spreadsheet. Students will use the Auto Fill feature to fill in data. Students will set the data type for cells. Students will set the column width. Students will add borders to cells. Students will enter formulas into cells. Students will sort data. Students will work with various views in Excel. Students will print a workbook.

How to Begin

1. Launch Microsoft Excel 2013.
2. Applying what you have learned, start a new blank document and display the normal page view.
3. Save the workbook as *LastName_Excel Basics* in your working folder.

Entering Data

TIP

The arrow and [Tab] keys and the [Shift][Tab] key combination can be used to quickly navigate a worksheet.

4. With cell A1 active (selected), enter the text Microsoft Excel Worksheet. Notice the text is wider than the cell, but is visible. This is because the cell alignment is not set to wrap text. If data are entered into cell B1 or C1, part of the text in cell A1 will be obscured.
5. Click cell A2 to select it, and enter the text Fill Exercise.
6. In cell A4, enter the text Monday.
7. In cell A5, enter the text Tuesday.
8. In cell B4, enter the number 1.
9. In cell B5, enter the number 2.
10. In cell C4, enter the number 5.
11. In cell C5, enter the number 10.
12. In cell D4, enter the number 11.
13. In cell D5, enter the number 56.

Using Auto Fill

A selection consisting of more than one cell is called a *range*. Ranges are used quite frequently in Excel, whether it is applying formatting to a range or selecting a range of data for use in a chart. Additionally, Excel has a feature called *Auto Fill* that allows additional cells to be filled with data based on the pattern in a selected range.

14. Select cells A4 and A5 by clicking cell A4, holding the left mouse button, and dragging to cell A5. This range is referred to as A4:A5. Notice the green rectangle around the selected area to indicate the cells composing the range.

TIP

A range can be selected by holding down the [Shift] key and using the arrow keys to navigate.

15. Click and hold the small green block at the bottom-right corner of the range, which is the Auto Fill block, drag down to cell A26, and release, as shown in **Figure 3-1**.
16. Examine the pattern of data automatically filled in for the new range. What is the pattern that was created?

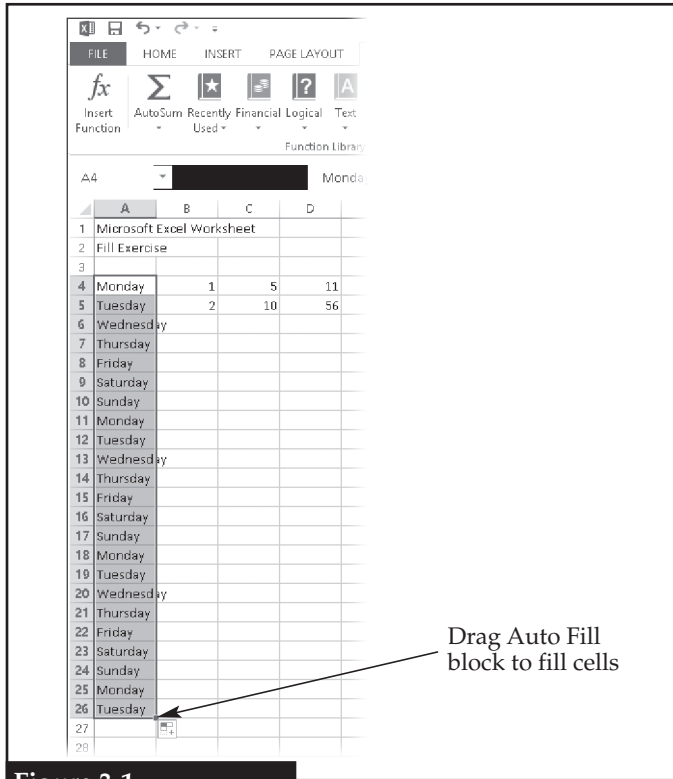


Figure 3-1.

Using Auto Fill to repeat a pattern of data in additional cells.

17. Select the range B4:B5.
18. Double-click the Auto Fill block. The cells down to cell B26 are automatically filled in with the pattern of data. This is possible because the column next to the selected range has cells containing data. If the column was empty, the Auto Fill block would need to be manually dragged down to complete the pattern of data. This function works vertically, but not horizontally.
19. What value is in cell B23?

20. Select the range C4:C5.
21. Applying what you have learned, complete the pattern down to cell C26.
22. What is the value in cell C14?

23. In which cell does the number 100 appear?

24. What is the pattern of data in column C?

25. Select the range D4:D5.
26. Applying what you have learned, complete the pattern down to cell D26.
27. What is the last value shown in column D?

28. Select the range B4:D4.
29. Applying what you have learned, complete the pattern in the row to cell H4.
30. What is the value in cell H4?

31. Select the range B5:D5.
32. Applying what you have learned, complete the pattern in the row to cell H5.
33. What is the value in cell H5?



Accounting Number Format

TIP

The drop-down list in the **Number** group on the **Home** tab of the ribbon can also be used to set the data type.



Percent Style



Increase Decimal

Setting the Data Type

34. Select the range B4:B26.
35. Click the drop-down arrow next to the **Accounting Number Format** button in the **Number** group on the **Home** tab of the ribbon, and click **\$ English (United States)** in the drop-down menu. The data type is set to currency, and the values are displayed as dollars and cents.
36. What is the value displayed in cell B15.

37. Select the range C4:C26.
38. Click the **Percent Style** button in the **Number** group on the **Home** tab of the ribbon. The data type is set to percentage, and the values are displayed as percentages by multiplying by 100.
39. What is the value in cell C24?

40. Select the range D4:D26.
41. Click the **Increase Decimal** button in the **Number** group on the **Home** tab of the ribbon. The values have five decimal places added. Click the button once more to increase the number of decimal places to six.
42. What are the values displayed in cells D21 and D26?

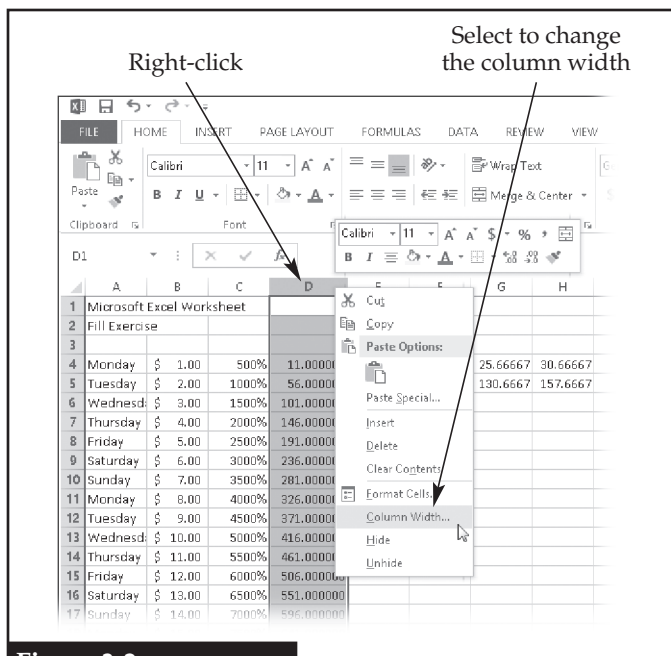


Figure 3-2.

Setting the column width.



Decrease Decimal

Setting Column Width

43. Right-click on the column heading for column D, and click **Column Width...** in the shortcut menu, as shown in **Figure 3-2**.
44. In the **Column Width** dialog box that is displayed, click in the **Column width:** text box, enter 8, and click the **OK** button to change the width of all cells in the column.
45. What is the value displayed in cell D26? Speculate what this means.

46. Select the range E4:H5.
47. Click the **Decrease Decimal** button in the **Number** group on the **Home** tab of the ribbon. The values have one decimal place removed. Continue clicking the button until all decimal places are removed.

48. What value is displayed in cell G5?

49. Applying what you have learned, select column A.

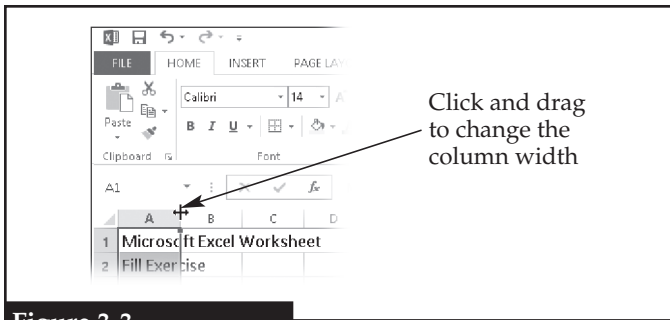


Figure 3-3.

The column width can be changed by dragging the column border.

50. Click the **Font Size** drop-down arrow in the **Font** group on the **Home** tab of the ribbon, and click **14** in the drop-down menu. All cells in column A are formatted with a font size of 14 points.
51. Move the cursor between the column A and column B headings. The cursor changes to a vertical bar with opposing arrows, as shown in **Figure 3-3**. This indicates the column width of the left-hand column can be changed.
52. Click, hold, and drag to the right until column A is as wide as the word *Wednesday*.

Adding Borders to Cells and Merging Cells



**Bottom
Border**



**Merge &
Center**

TIP

When the **Font** drop-down menu is displayed, you can press the key of the first letter in the font name and the list will jump to that letter.



Fill Color

53. Select columns A through D by clicking the column A header, holding, and dragging to the column D header.
54. Click the drop-down arrow next to the **Bottom Border** button in the **Font** group on the **Home** tab of the ribbon, and click **All Borders** in the drop-down menu. A thin black border is placed around each cell. Note that the button changes from **Bottom Border** to **All Borders**.
55. Select the range A1:H1.
56. Click the **Merge & Center** button in the **Alignment** group on the **Home** tab of the ribbon. The cells are combined into a single cell, and the cell content is centered.
57. Applying what you have learned, change the font size of the merged cell to 20 and make the font Times New Roman bold.
58. Applying what you have learned, change the border of the merged cell to the Thick Box Border style.
59. Select the range A3:H3.
60. Click the drop-down arrow next to the **Fill Color** button in the **Font** group on the **Home** tab of the ribbon, and click the red color swatch in the drop-down menu. The selected cells are filled in the color.
61. Applying what you have learned, change the fill color of cell A1 to blue and the font color to white.
62. Applying what you have learned, change the border for cell F5 to the Bottom Double Border style.

Entering Formulas

63. In cell F6, enter an equals sign (=), but do not press the [Enter] key so the cell remains active. In Excel, all formulas must begin with an equals sign.
64. Click cell F4. Notice that F4 is added to the formula being created in cell F6, as shown in **Figure 3-4**. The value in cell F4 will be used in the formula. This is similar to using a variable in an algebraic equation. Cell F4 is also highlighted with a rectangular marquee having corner handles in the same color as F4 appears in the formula in cell F6. Cell F6 remains active for more to be built onto the formula.
65. Add an addition sign (+) to the formula.

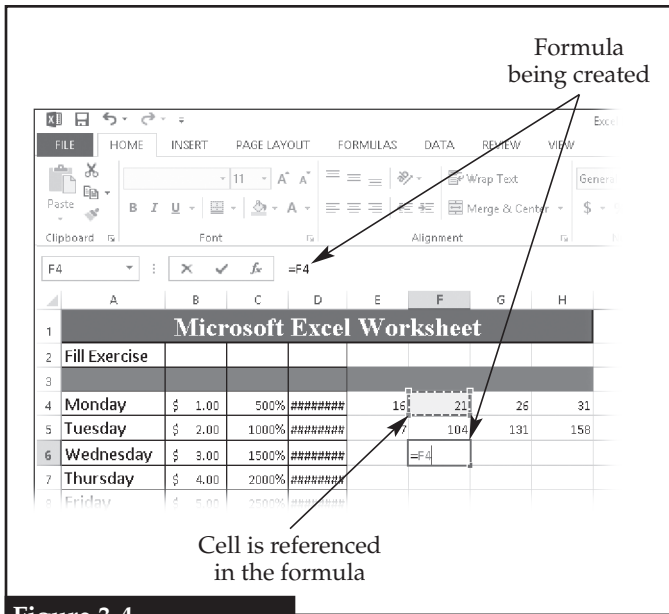


Figure 3-4.

Referring to other cells within a formula is a powerful feature of Excel.



71. Select cell B27.

72. Click the **Sum** button in the **Editing** group on the **Home** tab of the ribbon. Notice that Excel automatically creates the formula based on the range B4:B26, as shown in **Figure 3-5**. This is because those cells are located directly above cell B27 and contain data that can be added.

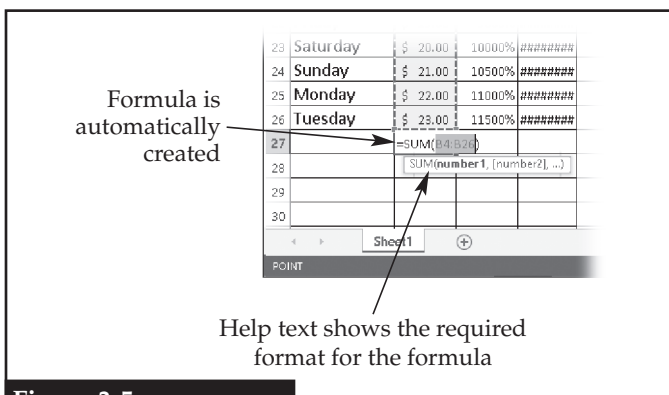


Figure 3-5.

In some cases, Excel will automatically complete a formula based on data in adjacent cells.



Center



Sort & Order

77. Click the **Sort & Filter** button in the **Editing** group on the **Home** tab of the ribbon, and click **Sort A to Z** in the drop-down menu. This is called *ascending order*.

78. A dialog box appears warning that data are present next to the selected range. Click the **Continue with the current selection** radio button, and then click the **Sort** button to sort the data.

66. Click cell F5. A reference to this cell is added after the addition sign in the formula. Notice that this reference is in a different color.

67. Click the **Enter** button (check mark) in the **Formula Bar** or press the [Enter] key to complete the formula.

68. Select cell F6. What is the complete formula that was created?

69. What is the value displayed in cell F6 (not the formula), and is it the correct solution for the formula? Speculate why the addition error exists.

70. Applying what you have learned, increase the number of decimal places in the range F4:F6 to two. Notice that the displayed result of the formula in cell F6 is now more accurate, but still not completely correct.

73. Click the **Enter** button in the **Formula Bar** or press the [Enter] key to accept the formula.

74. Applying what you have learned, change the border of cell B26 to the **Bottom Double Border** style.

75. Select column D, and click the **Center** button in the **Alignment** group on the **Home** tab of the ribbon. All cells in the column are set to display data centered within each cell. Adjust the column width if needed to display the cell contents.

Sorting Data

76. Select all of the cells in column A that contain days of the week.

79. What value is displayed in cell A4?
-
80. Applying what you have learned, sort the days of the week from Z to A. This is called *descending order*.
81. What value is displayed in cell A4?
-

Working with Various Views



Freeze Pane



Split

TIP

Removing the split screen also unfreezes any rows or columns.



Zoom

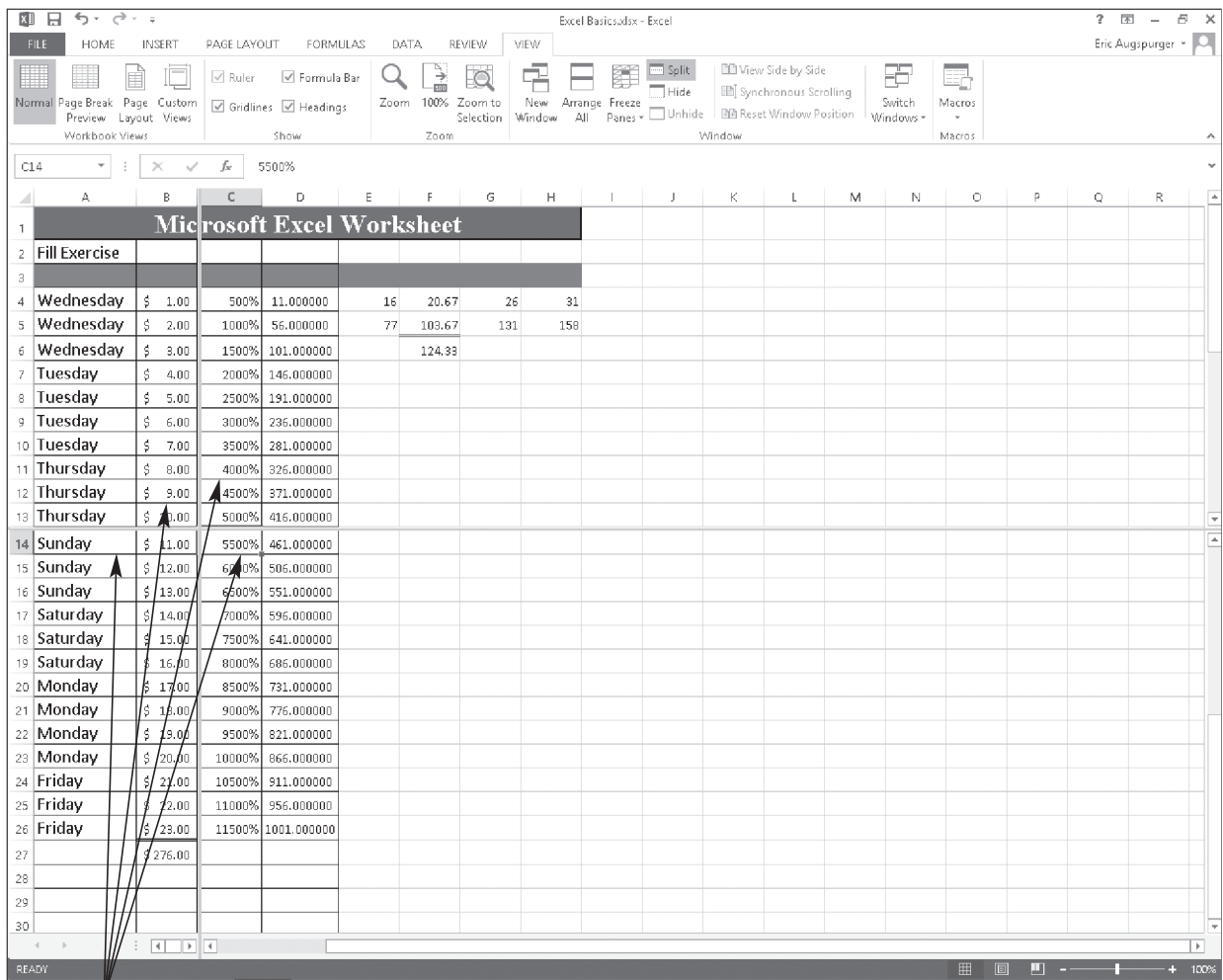


Custom Views

82. Click the **Freeze Panes** button in the **Window** group on the **View** tab of the ribbon, and click **Freeze First Column** in the drop-down menu.
83. Use the scroll bar at the bottom of the screen to scroll to the right. Notice that the first column is frozen in place and remains visible. Every column from B on can be scrolled out of view.
84. Select cell C14.
85. Click the **Split** button in the **Window** group on the **View** tab of the ribbon. The view is split into four panes at that location, as shown in **Figure 3-6**. Each pane can be zoomed and scrolled independent of the others. Note: if this does not work correctly the first time, click the button two more times.
86. Click the **Split** button to return to a single pane.
87. Click the **Zoom** button in the **Zoom** group on the **View** tab of the ribbon.
88. In the **Zoom** dialog box, click the **25%** radio button, and click the **OK** button to change the zoom level.
89. Click the **Custom Views** button in the **Workbook Views** group on the **View** tab of the ribbon. The **Custom Views** dialog box is displayed, as shown in **Figure 3-7**.
90. Click the **Add...** button in the dialog box. The **Add View** dialog box is displayed.
91. In the **Add View** dialog box, click in the **Name:** text box, enter Tiny, and click the **OK** button.
92. Applying what you have learned, change the zoom level to 100%.
93. Applying what you have learned, display the **Custom Views** dialog box.
94. Select the custom view in the dialog box, and click the **Show** button. The view is immediately restored.

Printing a Workbook

95. Set the zoom level to 100%.
96. Click the **File** tab in the ribbon.
97. Click **Print** in the backstage view.
98. On the right of the backstage view, click top drop-down list under **Settings**, and click **Print Active Sheets** in the list. This prints only the active worksheets.
99. Click the bottom drop-down list under **Settings**, and click **Fit Sheet on One Page** in the list. This will shrink the size of everything if needed in order to fit on a single page.
100. Click the **Print** button.
101. Save your work, and close Excel.



View is split into four panes

Figure 3-6.

Excel allows the view of a worksheet to be split.

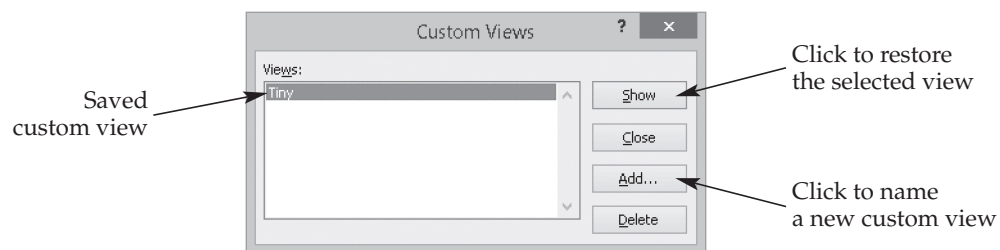


Figure 3-7.

Custom views can be saved and later restored.



Answers

Lesson 1

Activity 1-1

- | | | |
|-----------------------|------------------------|------------------------|
| 1. Home | 18. View | 35. File |
| 2. Data | 19. Formulas | 36. Home |
| 3. Review | 20. Review | 37. File |
| 4. Formulas | 21. Insert | 38. Insert |
| 5. Page Layout | 22. View | 39. Review |
| 6. Insert | 23. Home | 40. Home |
| 7. Review | 24. Page Layout | 41. Insert |
| 8. View | 25. Insert | 42. Page Layout |
| 9. Page Layout | 26. Home | 43. Home |
| 10. Home | 27. Insert | 44. File |
| 11. File | 28. Data | 45. Formulas |
| 12. View | 29. Page Layout | 46. Review |
| 13. Home | 30. Review | 47. Home |
| 14. Insert | 31. File | 48. Page Layout |
| 15. Review | 32. Insert | 49. Review |
| 16. Data | 33. Insert | 50. Insert |
| 17. Insert | 34. Review | |

Activity 1-2

- | | |
|--|--|
| 1. Paste ; inserts the contents of the clipboard | 13. Accounting Number Format ; assigns a currency format to the selected cell |
| 2. Cut ; removes the selected content and places it on the clipboard | 14. Decrease Indent ; decreases the indentation of the selected paragraph |
| 3. Save ; saves the document | 15. Align Right ; right justifies the selected cell |
| 4. Copy ; copies the selected content to the clipboard | 16. Insert Equation ; inserts a common mathematical equation or allows construction of an equation |
| 5. Format Painter ; copies the formatting of one selection to another selection | 17. Line Sparkline ; inserts a line chart within a single cell |
| 6. Bold ; makes selected text boldface | 18. Print Area ; marks what part of the sheet will print |
| 7. Orientation ; rotates text in a cell | 19. Find & Select ; finds text in the document |
| 8. Clear ; deletes everything in the selected cell | 20. Align Objects ; aligns the edges of selected objects |
| 9. Font Color ; changes the color of selected text | 21. Math & Trig ; displays a drop-down menu that allows the insertion of a mathematical or trigonometric function |
| 10. Insert Cells ; inserts a cell and shifts other cells downward | |
| 11. Increase Decimal ; shows a more precise value | |
| 12. Fill Color ; places shading in the cell | |

22. **Name Manager**; displays a dialog box for managing named cells and ranges
23. **Bottom Border**; adds a rule (line) below the selected paragraph
24. **Add a Hyperlink**; creates a hyperlink to a web page, document, or location within the current document
25. **Insert a SmartArt Graphic**; inserts decorative graphical information
26. **Spelling**; begins a spell-check of the document
27. **Thesaurus**; suggests similar words to the selected word
28. **Zoom**; allows reduction or enlargement of the view of the document
29. **Error Checking**; checks for common errors in formulas
30. **Close**; closes the current document
31. **Undo**; reverses the last action
32. **Repeat** or **Redo**; reinstates an undone action
33. **Get Data from Access**; imports data from a Microsoft Access database
34. **Refresh All**; updates all information coming from a data source
35. **Symbol**; displays a drop-down menu that allows insertion of a symbol
36. **Microsoft Excel Help**; displays the help system for Excel
37. **Table**; creates a table
38. **Sort & Filter**; enables filtering of selected cells
39. **Online Pictures**; displays the **Insert Pictures** dialog box for adding illustrations, photographs, and sounds to the document
40. **Change Page Orientation**; displays a drop-down menu for setting the page orientation
41. **Remove Duplicates**; deletes duplicate rows from the sheet
42. **Theme Effects**; displays a drop-down menu for setting the theme of the document
43. **Consolidate**; combines values from multiple ranges into a single range
44. **Subtotal**; totals several rows of data
45. **Share Workbook**; allows multiple users to simultaneously work in the workbook

Lesson 3

16. The days of the week are listed in order, beginning with Monday.
19. 20
22. 55
23. C23
24. Values increase by five.
27. 1001
30. 30.66667
33. 157.6667
36. \$12.00
39. 10500%
42. D21 is 776.000000 and D26 is 1001.000000
45. A series of pound signs (#) are displayed; this means the value is too wide to be displayed in the cell with the current column width.
48. 131
68. =F4+F5
69. The value displayed is 124, when it should be 125. This is due to a rounding error.
79. Friday
81. Wednesday

Lesson 4

51. seven

Lesson 5

Note: table numbers may differ depending on how the tables were constructed.

28. =SUM(Table1[@[Roses]:[Daisies]])
29. =SUBTOTAL(109,[Total])
51. =IF([@Roses]>=[@Daisies],"Roses","Daisies")
95. =MAX(Table1[[Roses]:[Daisies]])
97. =COUNTIF(Table3[Carnations], ">0")
108. =\$E\$12*(2+\$F\$19)/7 (cell references may be different depending on how the table is sorted)