

Instructor's Manual

Exploring Microsoft®Excel 2016, Chapter 1

Available Instructor Resources

Resource	File Name	Found
Student Data Files	Various , click link to see file list	Online Instructor Resource Center
Solution Files	Various , click link to see file list	Online Instructor Resource Center
Answer Keys Matching Multiple Choice Concepts Checks	e01_answerkey_match.docx e01_answerkey_mc.docx e01_answerkey_concepts.docx	Online Instructor Resource Center
Scorecards	Various, example: e01_p1Math_scorecard.xlsx	Online Instructor Resource Center
Scoring Rubrics	e01_rubric.docx	Online Instructor Resource Center
Annotated Solution Files	Various, example: e01_p1Math_annsolution.pdf	Online Instructor Resource Center
Scripted Lecture (Script) Scripted Lecture Data Scripted Lecture Solution	e01_script.docx e01_script_data.xlsx e01_script_solution.xlsx	Online Instructor Resource Center
PowerPoint Presentation	e01_powerpoints.pptx	Online Instructor Resource Center
Testbank	e01_testbank.docx	Online Instructor Resource Center
Instructor's Manual (lesson plans incl.)	e01_instructormanual.docx	Online Instructor Resource Center
Assignment Sheet	e01_assignsheet.docx	Online Instructor Resource Center
Prepared Exam (Chapter & App) Prepared Exam-Chap Instruction Prepared Exam-Chap Data Prepared Exam-Chap Solution Prepared Exam-Chap Annotated Sol. Prepared Exam-Chap Scorecard	e01_exam_chap_instruction.docx e01_exam_chap_data.xlsx e01_exam_chap_solution.xlsx e01_exam_chap_annsolution.pdf e01_exam_chap_scorecard.xlsx	Online Instructor Resource Center
File Guide	e01_file_guide.xlsx	Online Instructor Resource Center
Objective Map	e01_objectivesmap.xlsx	Online Instructor Resource Center
Grader Project Grader Instruction	e01_grader_instruction.docx	Online Instructor

Grader Data	e01_grader_data.xlsx	Resource Center
Grader Solution	e01_grader_solution.xlsx	
Grader Annotated Solution	e01_grader_annsolution.pdf	
Grader Scorecard	e01_grader_scorecard.xlsx	

CHAPTER OBJECTIVES

When students have finished reading this chapter, they will be able to:

- Explore the Excel Window
- Enter and Edit Cell Data
- Create Formulas
- Display Cell Formulas
- Manage Columns and Rows
- Select, Move, Copy, and Paste Data
- Apply Cell Styles, Alignment, and Font Options
- Apply Number Formats
- Manage Worksheets
- Select Page Setup Options
- Preview and Print a Worksheet

CHAPTER OVERVIEW

Students will be introduced to the basic concepts in Excel that provide the foundation for understanding spreadsheets, worksheets, and workbooks. They will learn to create worksheets, work with formulas, apply styles, and print a worksheet.

The major sections in this chapter are:

1. **Introduction to Spreadsheets.** In this section, students will learn how to design spreadsheets. They will explore the Excel window and learn the name of each window element. Then, they will enter text, values, and dates in a spreadsheet, and navigate in and among worksheets.
2. **Mathematical Operations and Formulas.** In this section, students will learn how to use cell references in a formula, apply the order of operations, use semi-selection to create a formula, copy a formula down a row or across a column, and display cell formulas.
3. **Worksheet Structure and Clipboard Tasks.** In this section, students will learn how to manage the columns and rows in a worksheet. They will insert, delete, hide, and unhide cells, columns, or rows, as well as adjust the column width and row height. Although worksheets are generally planned before entering data, at times there is a need to move data to a different location in the same worksheet or even to a different worksheet. Therefore, students will also manage the worksheet by moving, copying, and using the Paste Options and Paste Special features.
4. **Worksheet Formatting.** In this section, students will learn how to create a professionally formatted worksheet by applying a cell style, merging and centering data, changing cell alignments, and using borders, fonts, and colors to make data stand out so that it is easier to find and analyze. They will also learn how to apply number formats and increase or decrease decimal places.
5. **Worksheets, Page Setup, and Printing.** In this section, students will learn how to insert, delete, copy, move, rename, and group worksheets. They will also learn how to prepare worksheets for printing in case they need to print or email the worksheets to others in a

readable format. Therefore, they will learn how to set page orientation, select scaling options, set margin options, create a header or footer, select sheet options, use Print Preview, and set the various print options.

CLASS RUN-DOWN

1. Have students turn in homework assignments.
2. Talk about the chapter using the discussion questions listed below.
3. Use a PowerPoint Presentation to help students understand the chapter content.
4. Demonstrate Excel 2016 basics and capabilities.
5. [Run through the Scripted Lectures for the chapter. Give special attention to areas in which students might be challenged.](#)
6. Have students complete the Capstone Exercise for Excel Chapter 1.
7. Use MyITLab for in-class work or to go over homework.
8. Give students the homework handout for the next class period.

LEARNING OBJECTIVES

At the end of this lesson, students should be able to:

- Identify Excel Window Elements
- Identify Columns, Rows, and Cells
- Navigate in and Among Worksheets
- Enter Text
- Use Auto Fill to Complete a Sequence
- Enter Values
- Enter a Date
- Clear Cell Contents
- Use Cell References in Formulas
- Apply the Order of Operations
- Use Semi-Selection to Create a Formula
- Copy Formulas
- Display Cell Formulas
- Insert Cells, Columns, and Rows
- Delete Cells, Columns, and Rows
- Hide and Unhide Columns or Rows
- Adjust Column Width
- Adjust Row Height
- Select a Range
- Move a Range
- Copy and Paste a Range
- Use Paste Options and Paste Special
- Apply a Cell Style
- Merge and Center Data
- Change Cell Alignment
- Wrap Text
- Increase Indent
- Apply a Border

- Apply Fill Color
- Apply Number Formats
- Increase and Decrease Decimal Places
- Insert a Worksheet
- Delete a Worksheet
- Copy or Move a Worksheet
- Rename a Worksheet
- Group Worksheets
- Set Page Orientation
- Select Scaling Options
- Set Margin Options
- Create a Header or Footer
- Select Sheet Options
- View in Print Preview
- Set Print Options
- Print a Worksheet

KEY TERMS

Accounting Number Format—A number format that displays \$ on the left side of a cell, formats a value with a comma for every three digits on the left side of the decimal point, and displays two digits to the right of the decimal point.

Active cell—The current cell in a worksheet. It is indicated by a dark green border, and the Name Box shows the location of the active cell.

Alignment—The placement of data within the boundaries of a cell. By default, text aligns on the left side, and values align on the right side of a cell.

Auto Fill—A feature that helps you complete a sequence of months, abbreviated months, quarters, weekdays, weekday abbreviations, or values. AutoFill also can be used to fill or copy a formula down a column or across a row.

AutoComplete—A feature that searches for and automatically displays any other label in that column that matches the letters you type.

Border—A line that surrounds a cell or a range of cells to offset particular data from the rest of the data in a worksheet.

Cancel—An icon between the Name Box and Formula Bar. When you enter or edit data, click Cancel to cancel the data entry or edit, and revert back to the previous data in the cell, if any. Cancel changes from gray to red when you position the pointer over it.

Cell—The intersection of a column and row, such as the intersection of column B and row 5.

Cell address—The unique identifier of a cell, starting with the column letter and then the row number, such as C6.

Cell style—A set of formatting applied to a cell to produce a consistent appearance for similar cells within a worksheet.

Column heading—The alphabetical letter above a column in a worksheet. For example, B is the column heading for the second column.

Column width—The horizontal measurement of a column in a table or a worksheet. In Excel, it is measured by the number of characters or pixels.

Comma Style—A number format that formats a value with a comma for every three digits on the left side of the decimal point and displays two digits to the right of the decimal point.

Enter—An icon between the Name Box and Formula Bar. When you enter or edit data, click Enter to accept data typed in the active cell and keep the current cell active. Enter changes from gray to blue when you position the pointer over it.

Fill color—The background color that displays behind the data in a cell so that the data stands out.

Fill handle—A small green square at the bottom-right corner of the active cell. You can position the pointer on the fill handle and drag it to repeat the contents of the cell to other cells or to copy a formula in the active cell to adjacent cells down the column or across the row.

Flash Fill—A feature that fills in data or values automatically based on one or two examples you enter using another part of data entered in a previous column in the dataset.

Formula—A combination of cell references, operators, values, and/or functions used to perform a calculation.

Formula Bar—An element located below the Ribbon and to the right of the Insert Function command. It shows the contents of the active cell. You enter or edit cell contents in the Formula Bar for the active cell.

Horizontal alignment—The placement of cell data between the left and right cell margins. By default, text is left-aligned, and values are right-aligned.

Indent—A format that offsets data from its default alignment. For example, if text is left-aligned, the text may be indented or offset from the left side to stand out. If a value is right-aligned, it can be indented or offset from the right side of the cell.

Input area—A range of cells in a worksheet used to store and change the variables used in calculations.

Insert Function—An icon between the Name Box and Formula Bar. Click Insert Function to open the Insert Function dialog box to search for and insert a particular function.

Name Box—An element located below the Ribbon, which displays the address of the active cell.

New sheet—An icon that, when clicked, inserts a new worksheet in the workbook.

Nonadjacent range—A collection of multiple ranges (such as D5:D10 and F5:F10) that are not positioned in a contiguous cluster in an Excel worksheet.

Normal view—The default view of a worksheet that shows worksheet data but not margins, headers, footers, or pagebreaks.

Number format—A setting that controls how a value appears in a cell.

Order of operations—A rule that controls the sequence in which arithmetic operations are performed. Also called the *order of precedence*.

Output area—The range of cells in an Excel worksheet that contains formulas dependent on the values in the input area.

Page Break Preview—A view setting that displays the worksheet data and page breaks within the worksheet.

Page Layout view—A view setting that displays the worksheet data, margins, headers, and footers.

Paste Options button—An icon that displays in the bottom-right corner immediately after using the Paste command. It enables the user to apply different paste options.

Percent Style—A number format that displays a value as if it was multiplied by 100 and with the % symbol. The default number of decimal places is zero if you click Percent Style in the Number group or two decimal places if you use the Format Cells dialog box.

Pointing—The process of using the pointer to select cells while building a formula. Also known as *semi-selection*.

Range—A group of adjacent or contiguous cells in a worksheet. A range can be adjacent cells in a column (such as C5:C10), in a row (such as A6:H6), or a rectangular group of cells (such as G5:H10).

Row heading—A number to the left side of a row in a worksheet. For example, 3 is the row heading for the third row.

Row height—The vertical measurement of the row in a worksheet.

Select All—The triangle at the intersection of the row and column headings in the top-left corner of the worksheet. Click it to select everything contained in the active worksheet.

Semi-selection—The process of using the pointer to select cells while building a formula. Also known as *pointing*.

Sheet tab—A visual label that looks like a file folder tab. In Excel, a sheet tab shows the name of a worksheet contained in the workbook.

Sheet tab navigation—Visual elements that help you navigate to the first, previous, next, or last sheet within a workbook.

Spreadsheet—An electronic file that contains a grid of columns and rows used to organize related data and to display results of calculations, enabling interpretation of quantitative data for decisionmaking.

Status bar—The row at the bottom of the Excel window that displays instructions and other details about the status of a worksheet.

Text—Any combination of letters, numbers, symbols, and spaces not used in Excel calculations.

Value—A number that represents a quantity or a measurable amount.

Vertical alignment—The placement of cell data between the top and bottom cell margins.

View controls—Icons on the right side of the status bar that enable you to change to Normal, Page Layout, or Page Break view to display the worksheet.

Workbook—A collection of one or more related worksheets contained within a single file.

Worksheet—A single spreadsheet that typically contains descriptive labels, numeric values, formulas, functions, and graphical representations of data.

Wrap text—An Excel feature that makes data appear on multiple lines by adjusting the row height to fit the cell contents within the column width.

Zoom control—A control that enables you to increase or decrease the size of the worksheet data onscreen.

DISCUSSION QUESTIONS

- What are two major advantages of using an electronic spreadsheet instead of a paper-based ledger?
- What are the differences between a spreadsheet, an Excel workbook, and an Excel worksheet?
- Give an example of a spreadsheet application that would require the user to have more than one worksheet.
- Explain the difference between AutoComplete and Auto Fill, and support your answer with examples.
- There are several types of formatting that can be done in a spreadsheet. Give two reasons why you might want to change formatting in some cells in the spreadsheet.
- Explain the difference between a formula and a function and give an example of each.
- What is the order of operations, and why is it important to follow this order when performing arithmetic operations?

WHEN USING SCRIPTED LECTURE IN CLASS, DEMONSTRATE HOW TO:

- Enter text
- Use AutoFill to Complete a Sequence
- Enter Values
- Enter a Data and Clear Cell Contents
- Use Cell References in a Formula and Apply the Order of Operations
- Use Semi-Selection and Apply the Order of Operations to Create a Formula
- Use Cell References in a Formula and apply the Order of Operations
- Display Cell Formulas
- Insert a Column and Rows
- Delete a Row and Hide a Column
- Adjust Column Width and Row Height
- Select a Range and Move a Range to a New Location
- Copy and Paste a Range
- Use Paste Special
- Apply a Cell Style and Merge and Center the Title
- Change Cell Alignments
- Increase Indent
- Apply a border and Fill Color
- Apply Number Formats and Increase and Decrease Decimal Places
- Copy, Move, and Rename a Worksheet
- Set Page Orientation, Scaling, and Margin Options
- Create a Header
- View in Print Preview and Print

CONNECTIONS: PRACTICAL PROJECTS AND APPLICATIONS

- Develop a worksheet to keep track of expenses by category.
- Develop a worksheet to record sales and identify trends.
- Develop a personal gradebook to keep track of points earned in a class or to calculate GPA.
- Develop a worksheet to note statistics for an athletic team.

TEACHING NOTES

Introduction to Spreadsheets

In this section, students will explore the Excel window and its elements. They will learn how to design spreadsheets and enter text, values, and dates in a spreadsheet.

A. *Exploring the Excel Window*

- Explain the differences between a spreadsheet, a worksheet, and a workbook.
- Identify and highlight several of the Excel window elements described in Table 1.1 on page 405.
- ❖ **Teaching Tips:** Use the pointer to identify the screen elements of the Excel Window.

- Identify columns, rows, and cells.
- Navigate in and among worksheets.

B. Entering and Editing Cell Data

- Make sure to state the purpose of the worksheet, decide which inputs and outputs are needed to achieve the purpose of the worksheet. Explain what is input area and output area.
- Enter the labels, values, and formulas in Excel; format the numeric values in the worksheet; and format the descriptive titles and data labels so that they stand out.
- Document the workbook as thoroughly as possible, and save and share the completed workbook on a shared network or the cloud.
- To improve productivity, use the number keypad (if available) and Excel features such as AutoComplete, Auto Fill, and Flash Fill.
- ❖ **Teaching Tips:** Editing can either be done as soon as content is entered in the worksheet, or it can be done later.
- ❖ **Teaching Tips:** If a long text label does not fit well in a cell, you can insert a line break to display the text label on multiple lines within the cell. To insert a line break while you are typing a label, press Alt+Enter where you want to start the next line of text within the cell.
- ❖ **Teaching Tips:** You do not need to type the last 0 or trailing 0 since Excel will remove the last 0 or add the trailing 0 depending on the decimal place formatting.
- Enter dates and times in a variety of formats, such as static or as a formula.

Mathematical Operations and Formulas

In this section, students will learn how to use mathematical operations in Excel formulas based on the order of operations. They will also manipulate cell addresses to illustrate how results will change when they change the input data.

A. Creating Formulas

- Always use cell references instead of values in formulas when possible, and always place values in the input area.
- Start a formula by typing the equal sign (=) followed by the arithmetic expression.
- Use semi-selection to create a formula. This is often called pointing because you use the mouse pointer to select cells as you build the formula.
- ❖ **Teaching Tips:** Excel performs mathematical calculations from left to right based on the order of operations: parentheses, exponentiation, multiplication or division, and finally addition or subtraction. You can change the order of operations by using parentheses.
- ❖ **Teaching Tips:** Use Excel features such as Auto Fill and the fill handle to copy a formula.

B. Displaying Cell Formulas

- Excel shows the result of the formula in the cell, but there are times when it is necessary to display the formula instead.
- Two ways to show and hide the formula are as follows:

- i. Click Show Formulas in the Formula Auditing group on the Formulas tab.
 - ii. Press Ctrl and the grave accent (`) key, also referred to the tilde key, in the top-left corner of the keyboard to display formulas.
- ❖ **Teaching Tips:** If the formula is truncated, widen the column width to display the full formula.

Worksheet Structure and Clipboard Tasks

When students start a new blank workbook, the workbook contains one worksheet and they can add more worksheets. Worksheets are effective in organizing data by some category or timeframe. In this section, students will learn how to manage their worksheets by inserting or deleting cells, columns, and rows. They will also learn how to select cell ranges, move data to another location, copy data to another range, and use the Paste Special feature.

A. Managing Columns and Rows

- Ways to insert or delete cells, rows, and columns are presented as follows:
 - i. Click the Insert arrow in the Cells group on the Home tab.
 - ii. Use the shortcut menu by right-clicking the column (letter) or row (number) heading, or the selected cell range.
- Deleting a cell using Delete in the Cells group will delete the active cell and automatically move existing data up in that column only.
- When inserting or deleting cells, rows, and columns, cell addresses in formulas will adjust automatically to the changes in the cells, rows, and/or columns.
- ❖ **Teaching Tips:** Keep in mind that Excel inserts new columns to the left of the current column and new rows above the active row.
- If the worksheet contains confidential information, it might be necessary to hide some columns and/or rows before printing a copy for public distribution. The hidden columns and rows are not deleted.
- Hide adjacent and nonadjacent columns and rows.
- ❖ **Teaching Tips:** It is tricky to unhide Column A and Row 1 because the column or row on either side cannot be selected.
- ❖ **Teaching Tips:** Hide several columns or rows at one time.
- The column width can be adjusted in several ways.
- ❖ **Teaching Tips:** Numbers appear as a series of pound signs (#####) when the cell is too narrow to display the complete value. Text appears to be truncated when the cell is too narrow. Columns need to be widened when this is the case.
- ❖ **Teaching Tips:** Set the same size for more than one column or row at a time by dragging the pointer across the column or row headings for the area to be formatted and then set the size using any method.

B. Selecting, Moving, Copying, and Pasting Data

- While students may know the basics of selecting, cutting, copying, and pasting data in other programs such as Microsoft Word, those tasks are somewhat different when working in Excel.

- Understand the difference between a range and a nonadjacent range.
- Ranges can be selected in several ways, and then moved, copied and pasted to other locations.
- ❖ **Teaching Tips:**Nonadjacent ranges contain multiple ranges that are not connected in the worksheet.
- ❖ **Teaching Tips:**Use the Name Box to select a range by clicking in the Name Box, typing a range address, such as B15:D25, and pressing Enter.
- ❖ **Teaching Tips:**Both Paste and Paste Special can be used in worksheets to insert data. The Paste Special dialog box offers more options than the Paste menu.
- ❖ **Teaching Tips:**The layout of the data can be switched by transposing the columns and rows.
- ❖ **Teaching Tips:**Excel data can be copied and used in other applications, such as Word or a PowerPoint slideshow. It might be necessary to use the Paste Special command in these cases to keep the formatting.

Worksheet Formatting

It is important to format the worksheet after entering the data and formulas. In this section, students will learn how to create a professionally formatted worksheet that makes finding and analyzing data faster and easier. They will use features such as cell styles, alignment options, text wrapping, and indent options and format different types of values.

A. *Applying Cell Styles, Alignment, and Font Options*

- A cell style is a collection of format settings that include font, font color and size, borders and fill colors, alignment, and number formatting.
- Alignment refers to how data are positioned in cells. Text aligns at the left cell margin, and dates and values align at the right cell margin.
- ❖ **Teaching Tips:**The Format Cells dialog box contains additional alignment options.
- Place a title at the top of a worksheet and center it over the columns of data in the worksheet.
- ❖ **Teaching Tips:** Use the Merge and Center option to merge and center cells. There are four merge options. Previously merged cells can easily be unmerged.
- Horizontal and vertical cell alignment can be changed to improve appearance.
- ❖ **Teaching Tips:**Cell headings can be rotated by clicking Orientation in the Alignment group and selecting an option.
- ❖ **Teaching Tips:**To maintain a specific column width even though the data does not fit, use the Wrap Text option to make data appear on multiple lines by adjusting the row height.
- Increase or decrease the indent in text to help others see the hierarchical structure of data.
- ❖ **Teaching Tips:** Values are right-aligned by default. Decimal places in a column of values should be aligned. If the column label is wide, the values below it appeared too far on the right. To preserve the values aligning at the decimal places, use the Align Right

horizontal alignment and click Increase Indent to shift the values over to the left a little for better placement.

- Apply borders, cell styles, and fill color to accentuate data in a worksheet.
- ❖ **Teaching Tips:** Use a fill color that contrasts with the font color.
- ❖ **Teaching Tips:** More border and fill color options are available in the Format Cell dialog box.

B. Applying Number Formats

- Values have no special formatting when the data is entered, so it is a good idea to apply number formats based on the type of values in a cell.
- The default number format is General, but there are many more formats listed in Table 1.7 on page 448.
- ❖ **Teaching Tips:** It is important to learn the options available for formatting and apply the formatting before the cells containing formulas are copied using Auto Fill.
- Adjust the number of decimal places to display for a number format.

Worksheets, Page Setup, and Printing

In this section, students will learn to manage their worksheets by copying, moving, and renaming them. They will also learn how to use options on the Page Layout tab, such as Page Setup, Scale to Fit, and Sheet Options groups. After selecting page setup options, you will learn how to print your worksheet.

A. Managing Worksheets

- Worksheet tab names should reflect the contents of the respective worksheets.
- ❖ **Teaching Tips:** The color of a worksheet tab can be changed to make the tab stand out. The tab shows in the full color when it is not active, but when the sheet is active, the sheet tab color is a gradient of the selected color.
- Insert, delete, copy, move, and rename worksheets when necessary to keep the worksheet well managed.
- ❖ **Teaching Tips:** Spaces are allowed in worksheet names, but keep worksheet names relatively short. The longer the worksheet name, the fewer the sheet tabs that are visible at the bottom of the workbook window without scrolling.

B. Selecting Page Setup Options

- The Page Setup group on the Page Layout tab contains options to set the margins, select orientation, specify page size, select the print area, and apply other options.
- The Scale to Fit group contains options for adjusting the scaling of the spreadsheet on the printed page. When possible, use the commands in these groups to apply page settings.
- ❖ **Teaching Tips:** The settings in the Page Setup Options apply to the current worksheet only. To apply page setup options (such as margins or a header) to multiple worksheets at the same time, select the sheets and choose the Page Setup options to be applied to the selected sheets. Right-click a sheet tab and select Ungroup.
- The Margins tab contains options for setting the specific margins and centering the worksheet data horizontally and vertically in the page.

- The Header/Footer tab provides options for inserting different headers or footers on different pages.
- ❖ **Teaching Tips:** Avoid using the same header or footer on every page by using the *Different odd and even pages* check box in the Page Setup dialog box.
- The Sheet tab in the page Setup dialog box contains options for setting the print area, print titles, print options, and page order.
- ❖ **Teaching Tips:** Print the gridlines and row/column headings when you want to display and print cell formulas instead of formula results or to separate data on a regular printout to increase readability. The gridlines help you see the cell boundaries, and the headings help you identify what data are in each cell.
- ❖ **Teaching Tips:** It is a good idea to repeat rows and columns for large spreadsheets that would take more than one printed page. Open the Page Setup dialog box, click the Sheet tab, click in the Rows to repeat at the top box, and then select the row(s) containing column labels.

C. *Previewing and Printing a Worksheet*

- Before printing a worksheet, display a preview to ensure the data will print correctly.
- Print options include the number of copies to print, printer selection, print settings, number of pages to print, and Page Setup.
- ❖ **Teaching Tips:** To print more than one worksheet at a time, select the sheets you want to print, display the Print options, and select Print Active sheets.

OBJECTIVE TESTS IN MYITLAB

To find an objective test to help your students practice for tests, have them sign in to MyITLab: www.myitlab.com.

ADDITIONAL WEB RESOURCES

1. What's New in Excel 2016 for Windows: <https://support.office.com/en-us/article/What-s-new-in-Excel-2016-for-Windows-5fdb9208-ff33-45b6-9e08-1f5cdb3a6c73?ui=en-US&rs=en-US&ad=US>
2. Download Excel 2016 Quick Start Guide: <https://support.office.com/en-us/article/Office-2016-Quick-Start-Guides-25f909da-3e76-443d-94f4-6cdf7dedc51e?ui=en-US&rs=en-US&ad=US>
3. Explore Excel 2016: <https://support.office.com/en-us/article/Explore-Excel-2016-c6cd2046-4387-41bf-a874-b03a01ee3c87?ui=en-US&rs=en-US&ad=US>
4. Change the column width and row height: <https://support.office.com/en-us/article/Change-the-column-width-and-row-height-DB30658D-0C0B-44AD-825F-55F1CB4D9957?ui=en-US&rs=en-US&ad=US>
5. Add or change the background color of cells: <https://support.office.com/en-us/article/Add-or-change-the-background-color-of-cells-AC10F131-B847-428F-B656-D65375FB815E?ui=en-US&rs=en-US&ad=US>
6. Format numbers as currency: <https://support.office.com/en-us/article/Format-numbers-as-currency-0A03BB38-1A07-458D-9E30-2B54366BC7A4?ui=en-US&rs=en-US&ad=US>

7. Create or delete a custom number format: <https://support.office.com/en-us/article/Create-or-delete-a-custom-number-format-83657CA7-9DBE-4EE5-9C89-D8BF836E028E?ui=en-US&rs=en-US&ad=US>
8. Create a simple formula: <https://support.office.com/en-us/article/Create-a-simple-formula-11A5F0E5-38A3-4115-85BC-F4A465F64A8A?ui=en-US&rs=en-US&ad=US>
9. Use AutoFill and Flash Fill: <https://support.office.com/en-us/article/Use-AutoFill-and-Flash-Fill-2E79A709-C814-4B27-8BC2-C4DC84D49464?ui=en-US&rs=en-US&ad=US>
10. Use Flash Fill to separate data into multiple columns instantly: <https://support.office.com/en-us/article/Flash-Fill-3fb96b4a-ee83-4493-af45-6522324477bd?ui=en-US&rs=en-US&ad=US>
11. Transpose (rotate) data from rows to columns or vice versa: <https://support.office.com/en-us/article/Transpose-rotate-data-from-rows-to-columns-or-vice-versa-3419F2E3-BEAB-4318-AAE5-D0F862209744?ui=en-US&rs=en-US&ad=US>
12. Merge cells: <https://support.office.com/en-us/article/Merge-cells-C564AE6C-3D9E-4512-8D24-1AD3B21F089A?ui=en-US&rs=en-US&ad=US>
13. Split text into different cells: <https://support.office.com/en-us/article/Split-text-into-different-cells-30B14928-5550-41F5-97CA-7A3E9C363ED7?ui=en-US&rs=en-US&ad=US>
14. Wrap text in a cell: <https://support.office.com/en-us/article/Wrap-text-in-a-cell-2A18CFF5-CCC1-4BCE-95E4-F0D4F3FF4E84?ui=en-US&rs=en-US&ad=US>
15. Headers and footers in a worksheet: <https://support.office.com/en-us/article/Headers-and-footers-in-a-worksheet-CAE2A88C-64A7-42AB-96A4-28D2FC16AD31?ui=en-US&rs=en-US&ad=US>
16. Show or hide gridlines on a worksheet: <https://support.office.com/en-us/article/Show-or-hide-gridlines-on-a-worksheet-3ef5aacb-4539-4ad5-9945-5ed53772dc4d>
17. Set a specific print area: <https://support.office.com/en-us/article/Set-a-specific-print-area-BEEBCB7-0D43-4E07-8895-5AFE0AEDFB32?ui=en-US&rs=en-US&ad=US>
18. Print a worksheet in landscape or portrait orientation: <https://support.office.com/en-us/article/Print-a-worksheet-in-landscape-or-portrait-orientation-1AF561B2-5444-4FC1-B24D-9E4D05B9EBF1?ui=en-US&rs=en-US&ad=US>
19. Print rows with column headers on top of every page: <https://support.office.com/en-us/article/Print-rows-with-column-headers-on-top-of-every-page-D3550133-F6A1-4C72-AD70-5309A2E8FE8C?ui=en-US&rs=en-US&ad=US>
20. Print the top row on every page: <https://support.office.com/en-us/article/Print-the-top-row-on-every-page-3E4F2A66-7350-4042-9639-418DA7AB5B37?ui=en-US&rs=en-US&ad=US>
21. Create and print mailing labels for an address list in Excel: <https://support.office.com/en-us/article/Create-and-print-mailing-labels-for-an-address-list-in-Excel-D9AE0B60-9FDD-4A90-9DA9-0EC3A4B011B2?ui=en-US&rs=en-US&ad=US>
22. Add a page break: <https://support.office.com/en-us/article/Add-a-page-break-AA7B2181-4F1F-4730-8BA0-5986E11EA6AB?ui=en-US&rs=en-US&ad=US>

23. Preview worksheet pages before you print: <https://support.office.com/en-us/article/Preview-worksheet-pages-before-you-print-BCD8F03A-C28D-42A2-9217-AAB0E43AA930?ui=en-US&rs=en-US&ad=US>
24. Learn more about SmartArt graphics: <https://support.office.com/en-us/article/Learn-more-about-SmartArt-graphics-344C80F1-3B25-4E1D-BFA1-96BB4759F12A?ui=en-US&rs=en-US&ad=US>
25. Microsoft Excel Blog: <http://blogs.office.com/b/microsoft-excel/>
26. Microsoft Excel Community: <http://answers.microsoft.com/en-us/office/forum/excel?auth=1>

PROJECTS AND EXERCISES

	Data file	Save As
Hands-On Exercise 1	e01h1Markup.xlsx	e01h1Markup_LastFirst.xlsx
Hands-On Exercise 2		e01h2Markup_LastFirst.xlsx
Hands-On Exercise 3		e01h3Markup_LastFirst.xlsx
Hands-On Exercise 4		e01h4Markup_LastFirst.xlsx
Hands-On Exercise 5		e01h5Markup_LastFirst.xlsx
Practice Exercise 1	e01p1Math.xlsx	e01p1Math_LastFirst.xlsx
Practice Exercise 2	Blank workbook	e01p2July_LastFirst.xlsx
Practice Exercise 3	e01p3TicketSales.xlsx	e01p3TicketSales_LastFirst.xlsx
Mid-Level Exercise 1	e01m1Rentals.xlsx	e01m1Rentals_LastFirst.xlsx
Mid-Level Exercise 2	e01m2Sales.xlsx	e01m2Sales_LastFirst.xlsx
Mid-Level Exercise 3 (collaboration)		e01m3Markup_LastFirst_LastFirst.xlsx
BYC General Case	e01b1Server.xlsx	e01b1Server_LastFirst.xlsx
BYC Disaster Recovery	e01b2Proceeds.xlsx	e01b2Proceeds_LastFirst.xlsx
Capstone	e01c1Travel.xlsx	e01c1Travel_LastFirst.xlsx

CHAPTER REVIEW/ANSWERS TO END OF CHAPTER MATERIAL

Key Terms Matching Answer Key

1. A spreadsheet that contains formulas, functions, values, text, and visual aids.

S. Worksheet

2. A file containing related worksheets.

R. Workbook

3. A range of cells containing values for variables used in formulas.

I. Input area

4. A range of cells containing results based on manipulating the variables.

L. Output area

5. Identifies the address of the current cell.

J. Name Box

6. Displays the content (text, value, date, or formula) in the active cell.

H. Formula Bar

7. Displays the name of a worksheet within a workbook.

O. Sheet tab

8. The intersection of a column and row.

C. Cell

9. Includes letters, numbers, symbols, and spaces.

P. Text

10. A number that represents a quantity or an amount.

Q. Value

11. Rules that control the sequence in which Excel performs arithmetic operations.

K. Order of operations

12. Enables you to copy the contents of a cell or cell range or to continue a sequence by dragging the fill handle over an adjacent cell or range of cells.

B. Auto Fill

13. A small green square at the bottom-right corner of a cell.

F. Fill handle

14. The horizontal measurement of a column.

D. Column width

15. The vertical measurement of a row.

N. Row height

16. A rectangular group of cells.

M. Range

17. The position of data between the cell margins.

A. Alignment

18. Formatting that enables a label to appear on multiple lines within the current cell.

T. Wrap text

19. The background color appearing behind data in a cell.

E. Fill color

20. A combination of cell references, operators, values, and/or functions used to perform a calculation.

G. Formula

Multiple Choice Answer Key

1. Which step is *not* part of planning a worksheet design?

d. Enter labels, values, and formulas.

2. You just copied a range of data containing formulas. However, you want to preserve the formula results and the original number and text formatting in the pasted range. Which paste option would you select?

c. Values & Source Formatting

3. Given the formula =B1*B2+B3/B4^2, what operation is calculated first?

d. B4^2

4. How can you display formulas within the cells instead of the cell results?

b. Press Ctrl+`.

5. What is a fast way to apply several formats at one time?

- b. Apply a cell style.**
6. Which of the following is *not* an alignment option?
- c. Fill Color**
7. Which of the following characteristics is *not* applicable to the Accounting Number Format?
- a. Dollar sign immediately on the left side of the value**
8. You selected and copied worksheet data containing formulas. However, you want the pasted copy to contain the current formula results rather than formulas. What do you do?
- c. Click the Paste arrow in the Clipboard group and select Values & Source Formatting.**
9. Assume that the data on a worksheet consume a whole printed page and a couple of columns on a second page. You can do all of the following *except* what to force the data to print all on one page?
- b. Increase the left and right margins.**
10. What should you do if you see pound signs (###) instead of values or results of formulas?
- d. Increase the column width.**

Quick Concept Check Answer Key

- 1. What are two major advantages of using an electronic spreadsheet instead of a paper-based ledger?**
- Using a calculator to perform calculations and entering results in a paper-based ledger can lead to greater inaccuracies than building formulas in a spreadsheet, especially when a value changes and new results are needed. In addition, it is easier to make data-entry changes in a spreadsheet over making changes in a paper ledger.
- 2. What are the visual indicators that a cell is the active cell?**
- The active cell is indicated by a solid green border. In addition, the Name Box displays the active cell name, such as B15. Finally, the row and column headings have a light gray background with a thick green line for the respective row and column that contains the active cell.
- 3. What steps should you perform before entering data into a worksheet?**
- (1) State the purpose of the worksheet. (2) Decide what input values and data are needed. (3) Decide what outputs are needed to achieve the purpose of the worksheet. (4) Decide how to arrange the inputs and outputs into columns and rows.
- 4. What three types of content can you enter into a cell? Give an example (different from those in the book) for each type.**
- | | |
|--------|------------------|
| Text: | Microsoft Excel |
| Value: | 1234.56 |
| Date: | January 31, 2018 |

5. What is the order of operations? Provide and explain two examples that use four different operators: one with parentheses and one without.

The order of operations is a set of rules that specify the sequence in which arithmetic calculations are performed from left to right in the following order of importance: Parenthesis, exponentials, multiplication and division, and addition and subtraction.

$=A1+A2*A3/(A4-A5)$

In this above example, the $A4-A5$ in parentheses is calculated first. Then $A2*A3$ is calculated. That result is divided by the result from $A4-A5$. Finally, that value is added to the value in $A1$.

$=A1+A2*A3/A4-A5$

In this second example without parentheses, the order of operations is this: $A2*A3$ is calculated first. That result is then divided by $A4$. That result is added to $A1$, and $A5$ is finally subtracted from that sum.

6. Why should you use cell references instead of typing values in formulas?

The values could change. If you enter values in a formula, you would have to edit the formulas, which could introduce other errors. You should enter values in other cells and then use those cell references in the formulas. That way, when you change individual cell values, the results of the formulas will automatically update.

7. When would it be useful to display formulas instead of formula results in a worksheet?

Displaying formulas is helpful to check formulas. You can see more formulas at one time instead of clicking each cell containing a formula and then looking at the Formula Bar. You can also print cell formulas if you find it is easier to proofread formulas on a printout.

8. Give an example of when you would delete a column versus when you would hide a column.

You would delete a column that is no longer needed. For example, if you assigned new product numbers, you could delete the column of old product numbers. You hide a column when you don't want to delete it, but it contains confidential or extraneous data that is not needed before you print a worksheet for someone.

9. When should you adjust column widths instead of using the default width?

The default column widths may be too wide or too narrow for the data in those columns. You should increase or decrease the width based on the data in those columns.

10. Why would you use the Paste Special options in Excel?

You might want the pasted data to be in a different format than the default paste. For example, you might want to paste formulas or values only.

11. What is the importance of formatting a worksheet?

Formatting helps create a professional looking spreadsheet. It helps users see the

importance of values and labels by enhancing the appearance. Formatting helps draw attention to important areas and helps the users analyze data better.

12. Describe five alignment and font formatting techniques used to format labels that are discussed in this section.

(1) Apply horizontal or vertical alignment. (2) Merge and center titles over columns. (3) Increase or decrease indent. (4) Wrap text in a cell. (5) Apply borders and fill color.

13. What are the main differences between Accounting Number Format and Currency format? Which format has its own command on the Ribbon?

The \$ is at the left side of the cell for Accounting Number Format and immediately to the left of the value in Currency format. Negative values display in parentheses in Accounting Number Format and are preceded by a minus sign or a parentheses or in red in Currency. The right side of the value is at the right cell margin for Currency format, and is offset a little from the right cell margin for Accounting Number Format. The Accounting Number Format has its own command on the Ribbon.

14. Why would you insert several worksheets of data in one workbook instead of creating a separate workbook for each worksheet?

You would insert multiple worksheets in a workbook when you want to store related data together. For example, you might want to create a weekly worksheet of sales for each week in a month so that you can save the entire month's data in one workbook.

15. Why would you select a *Center on page* option on the Margins tab within the Page Setup dialog box if you have already set the margins?

You might want to center worksheet data between the margins instead of letting the data appear at the top or left margins, especially if doing so would create an unbalanced look on the printed page.

16. List at least five elements you can insert in a header or footer.

Page number, number of pages, current date code, current time code, file path code, file name code, sheet name code, and a picture

17. Why would you want to print gridlines and row and column headings?

The gridlines help the reader's eye read across a worksheet. Having gridlines and row and column headings is helpful when you print a copy of the cell formulas so that you can analyze your formulas by seeing cell boundaries and seeing the column letters and row numbers for reference.

Input Area	
Sale Price	\$ 300,000.00
Realtor Commission Rate	6%
Closing Costs Rate	7%
Annual Property Taxes	\$ 2,000.00
Months to Prorate Taxes	6
Months in a Year	12
Est Existing Mortgage Payoff	\$ 100,000.00

Output Area	
Sale Price	\$ 300,000.00
Commission	\$ 18,000.00
Closing Costs	21,000.00
Title Insurance Policy	950.00
Prorated Property Taxes	1,000.00
Est Existing Mortgage Payoff	<u>100,000.00</u>
Total Est Deductions	<u>140,950.00</u>
Estimated Net Proceeds	<u>\$ 159,050.00</u>

Student Name

Estimates

0e1f-c36b-4b28-1b59.xlsx

Ashley's Tip Distribution

Thursday, March 1, 2018

11:00 a.m. - 1:30 p.m.

Customer	Customer Subtotal and Tip				Tip Rates				Tip Amounts		
	Food	Drinks	Subtotal	Tip Left	Total Received	Bartender	Assistant Food	Assistant Drink	Bartender	Assistant	My Net Tip
1	\$35.00	\$6.75	\$41.75	\$6.00	14.4%	13%	1.75%	2%	\$0.88	\$0.75	\$4.38
2	\$42.50	\$8.45	\$50.95	\$10.00	19.6%	13%	1.75%	2%	\$1.10	\$0.91	\$7.99
3	\$100.18	\$10.25	\$110.43	\$25.00	22.6%	13%	1.75%	2%	\$1.33	\$1.96	\$21.71
4	\$38.75	\$6.75	\$45.50	\$7.00	15.4%	13%	1.75%	2%	\$0.88	\$0.81	\$5.31
5	\$51.37	\$8.45	\$59.82	\$12.00	20.1%	13%	1.75%	2%	\$1.10	\$1.07	\$9.83
6	\$16.25	\$5.25	\$21.50	\$3.50	16.3%	13%	1.75%	2%	\$0.68	\$0.39	\$2.43
7	\$12.95	\$6.75	\$19.70	\$4.00	20.3%	13%	1.75%	2%	\$0.88	\$0.36	\$2.76
8	\$65.81	\$8.45	\$74.26	\$14.00	18.9%	13%	1.75%	2%	\$1.10	\$1.32	\$11.58
9	\$112.45	\$25.25	\$137.70	\$30.00	21.8%	13%	1.75%	2%	\$3.28	\$2.47	\$24.24
10	\$35.13	\$6.75	\$41.88	\$9.00	21.5%	13%	1.75%	2%	\$0.88	\$0.75	\$7.37
11	\$62.10	\$12.95	\$75.05	\$14.00	18.7%	13%	1.75%	2%	\$1.68	\$1.35	\$10.97
12	\$84.34	\$12.95	\$97.29	\$20.00	20.6%	13%	1.75%	2%	\$1.68	\$1.73	\$16.58
13	\$12.25	\$0.00	\$12.25	\$2.00	16.3%	13%	1.75%	2%	\$0.00	\$0.21	\$1.79
14	\$25.45	\$6.75	\$32.20	\$5.50	17.1%	13%	1.75%	2%	\$0.88	\$0.58	\$4.04
15	\$75.12	\$13.50	\$88.62	\$20.00	22.6%	13%	1.75%	2%	\$1.76	\$1.58	\$16.66
16	\$40.44	\$10.25	\$50.69	\$8.85	17.5%	13%	1.75%	2%	\$1.33	\$0.91	\$6.60
17	\$13.87	\$0.00	\$13.87	\$2.00	14.4%	13%	1.75%	2%	\$0.00	\$0.24	\$1.76
18	\$24.75	\$3.50	\$28.25	\$6.00	21.2%	13%	1.75%	2%	\$0.46	\$0.50	\$5.04
19	\$67.33	\$9.75	\$77.08	\$15.00	19.5%	13%	1.75%	2%	\$1.27	\$1.37	\$12.36
20	\$42.44	\$6.75	\$49.19	\$12.00	24.4%	13%	1.75%	2%	\$0.88	\$0.88	\$10.24

- Notes:**
- (1) The bartender gets a 13% tip based on the total drink order for each customer.
 - (2) The server assistant gets 1.75% of the food order and 2% of the drink order.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1	Ashley's Tip Distribution															
2	Thursday, March 1, 2018															
3	11:00 a.m. - 1:30 p.m.															
4																
5		Customer Subtotal and				Tip Rates				Tip Amounts						
6	C					Total	Bart			Bart		My				
7	u					Receive	ende	Assista	Assista	ende	Assistant	Net				
8	s	Fo	Dri	Subt	Tip	d	r	nt Food	nt Drink	r	Tip					
9	t	od	nks	otal	Left											
10	m															
11	e															
12	r															
13	1	##	##	#####	###	14.4%	13%	1.75%	2%	#####	\$0.75	\$4.38				
14	2	##	##	#####	###	19.6%	13%	1.75%	2%	#####	\$0.91	\$7.99				
15	3	##	##	#####	###	22.6%	13%	1.75%	2%	#####	\$1.96	\$21.71				
16	4	##	##	#####	###	15.4%	13%	1.75%	2%	#####	\$0.81	\$5.31				
17	5	##	##	#####	###	20.1%	13%	1.75%	2%	#####	\$1.07	\$9.83				
18	6	##	##	#####	###	16.3%	13%	1.75%	2%	#####	\$0.39	\$2.43				
19	7	##	##	#####	###	20.3%	13%	1.75%	2%	#####	\$0.36	\$2.76				
20	8	##	##	#####	###	18.9%	13%	1.75%	2%	#####	\$1.32	\$11.58				
21	9	##	##	#####	###	21.8%	13%	1.75%	2%	#####	\$2.47	\$24.24				
22	#	##	##	#####	###	21.5%	13%	1.75%	2%	#####	\$0.75	\$7.37				
23	#	##	##	#####	###	18.7%	13%	1.75%	2%	#####	\$1.35	\$10.97				
24	#	##	##	#####	###	20.6%	13%	1.75%	2%	#####	\$1.73	\$16.58				
25	#	##	##	#####	###	16.3%	13%	1.75%	2%	#####	\$0.21	\$1.79				
26	#	##	##	#####	###	17.1%	13%	1.75%	2%	#####	\$0.58	\$4.04				
27	#	##	##	#####	###	22.6%	13%	1.75%	2%	#####	\$1.58	\$16.66				
28	#	##	##	#####	###	17.5%	13%	1.75%	2%	#####	\$0.91	\$6.60				
29	#	##	##	#####	###	14.4%	13%	1.75%	2%	#####	\$0.24	\$1.76				
30	#	##	##	#####	###	21.2%	13%	1.75%	2%	#####	\$0.50	\$5.04				
31	#	##	##	#####	###	19.5%	13%	1.75%	2%	#####	\$1.37	\$12.36				
32	#	##	##	#####	###	24.4%	13%	2%	2%	#####	\$0.88	\$10.24				
33																
34	Nc	(1) The bartender gets a 13% tip based on the total drink order for each customer.														
35		(2) The server assistant gets 1.75% of the food order and 2% of the drink order.														