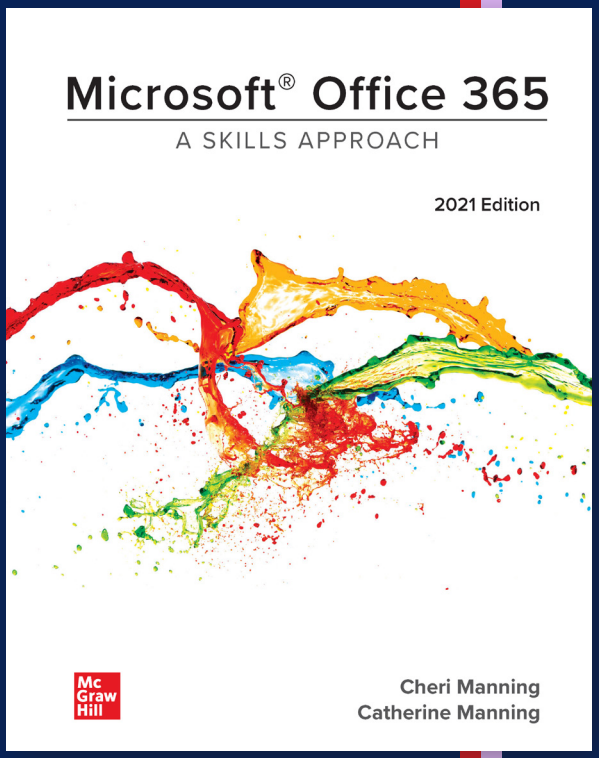
SIMnet®

# Microsoft® Office 365: A Skills Approach, 2021e

Cheri Manning | Catherine Manning

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MICROSOFT OFFICE 365/2021: A SKILLS APPROACH



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# preface

How well do you know Microsoft Office? Many students can follow specific step-by-step directions to re-create a document, spreadsheet, presentation, or database, but do they truly understand the skills it takes to create these on their own? Just as simply following a recipe does not make you a professional chef, re-creating a project step by step does not make you an Office expert.

The purpose of this book is to teach you the skills to master Microsoft Office 365 in a straightforward and easy-to-follow manner. But Microsoft® Office 365: A Skills Approach goes beyond the how and equips you with a deeper understanding of the what and the why. Too many times books have little value beyond the classroom. The Skills Approach series has been designed to be not only a complete textbook but also a reference tool for you to use as you move beyond academics and into the workplace.

## WHAT'S NEW IN THIS EDITION

With Office 365, Microsoft changed the delivery method for new features for users who have an Office 365 subscription. Rather than waiting for the next version of Office to be released, users with a 365 subscription will now receive new features through automatic updates to their account. Why does this matter to you? Because while we feel this book is still a solid reference for you to use, it could mean that certain content in this book may be out of date. But there is hope! If you signed up for a SIMnet account along with purchasing this book, the electronic version of this textbook (the SIMbook) will be updated along with Microsoft's updates. This means the text in the SIMbook, along with the simulated environment used for the exercises, will reflect any changes made to Office 365. In addition, your SIMbook may include additional content that could not be accommodated in the printed version of the textbook. Some of the new features in this edition of the *Skills Approach* series include Word's new *Editor*, stock images for adding pictures in Word and PowerPoint, and the new XLOOKUP function in Excel.

# about the authors

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Cheri Manning is the author of the Microsoft Excel and Access content for the Skills Approach series and SIMnet. She has been authoring instructional content for these applications for more than 20 years.

Cheri began her career as an Aerospace Education Specialist with the Education Division of the National Aeronautics and Space Administration (NASA), where she produced materials for K–12 instructors and students. Prior to founding Triad, Cheri was a project manager with Compact Publishing, where she managed the development of McGraw-Hill's Multimedia MBA CD-ROM series.

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Catherine began her career at Compact Publishing, one of the pioneers in educational CD-ROM-based software. She was the lead designer at Compact and designed every edition of the TIME Magazine Compact Almanac from 1992 through 1996. In addition, she designed a number of other products with Compact, including the TIME Man of the Year program and the TIME 20th Century Almanac.

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chapter 1

# Getting Started with Excel

In this chapter, you will learn the following skills:

- Identify the elements of a Microsoft Excel workbook
- Navigate a workbook
- Enter and format text, numbers, and dates in cells
- Understand the concept of charts
- Use the Recommended Charts feature
- Enter simple formulas
- Understand relative and absolute cell references
- Understand the concept of a function
- Use AutoSum and the Quick Analysis tool to add totals
- Use the status bar to display totals and other values
- Change the zoom level to view more or less of the worksheet
- Create a new workbook from a template
- Arrange multiple workbook windows
- Spell check a worksheet
- Preview and print a worksheet

# introduction

**Skill 1.20** Previewing and Printing a Worksheet

This chapter provides you with the basic skills necessary to start working with Excel. The first step is to become familiar with the Excel interface and learn how to navigate a workbook. Next, you'll learn how to enter data and apply simple number and date formats. You will learn about charts and to use the Recommended Charts feature to add a chart quickly. This chapter introduces the concepts of formulas, functions, and absolute and relative references. Pay close attention to the skill *Understanding Absolute and Relative References*. These concepts are used throughout Excel. You will add totals to worksheet data using the SUM function with a variety of methods including AutoSum and the Quick Analysis tool. To help you start using Excel for your own purposes, you will learn how to create a new workbook from a template and how to manage multiple workbooks at the same time. Finally, the chapter covers how to check a worksheet for spelling errors and how to preview and print.

Source of screenshots Microsoft 365: Word, Excel, Access, PowerPoint

# Skill 1.1 Introduction to Excel

Microsoft Excel is a spreadsheet program in which you enter, manipulate, calculate, and chart numerical and text data. An Excel file is referred to as a **workbook**, which is a collection of worksheets. Each worksheet (also called a "sheet") is made up of rows and columns of data on which you can perform calculations. It's these calculations that make Excel such a powerful tool. Some of the basic elements of a Microsoft Excel workbook include:

- **Worksheet**—an electronic ledger in which you enter data. The worksheet appears as a grid where you can enter and then manipulate data using functions, formulas, and formatting. Excel workbooks have one worksheet by default named *Sheet1*. You can rename, add, and delete worksheets as necessary.
- **Row**—a horizontal group of cells. Rows are identified by numbers. For example, the third row is labeled with the number *3*.
- **Column**—a vertical group of cells. Columns are identified by letters. For example, the fourth column is labeled with the letter *D*.
- **Cell**—the intersection of a column and a row. A **cell** is identified by the **cell address**—its column and row position. For example, the cell at the intersection of column D and row 3 has a cell address of *D3*.
- **Cell range**—a contiguous group of cells. A cell range is identified by the address of the cell in the upper left corner of the range, followed by a colon, and then the address of the cell in the lower right corner of the range. The cell range *B3:B5* includes cells B3, B4, and B5. A cell range can incorporate multiple columns and rows as long as the cells are all contiguous. The range *B3:D5* includes cells B3, B4, B5, C3, C4, C5, D3, D4, and D5.
- **Formula bar**—data entry area directly below the Ribbon and above the worksheet grid. Although you can type any data in the formula bar, the *Insert Function* button at the left side of the formula bar was designed to make it easier to create complex formulas.
- **Name box**—appears at the left side of the formula bar and displays the address of the selected cell. If a group of cells is selected, the *Name* box displays the address of the first cell in the group.
- **Status bar**—appears at the bottom of the worksheet grid and can display information about the selected data, including the number of cells selected that contain data (count) and the average and sum (total) of the selected values.

You can use Excel for a wide variety of purposes, from calculating payments for a personal loan, to creating a budget, to tracking cash flow for your business. Excel is not limited to numerical calculations.

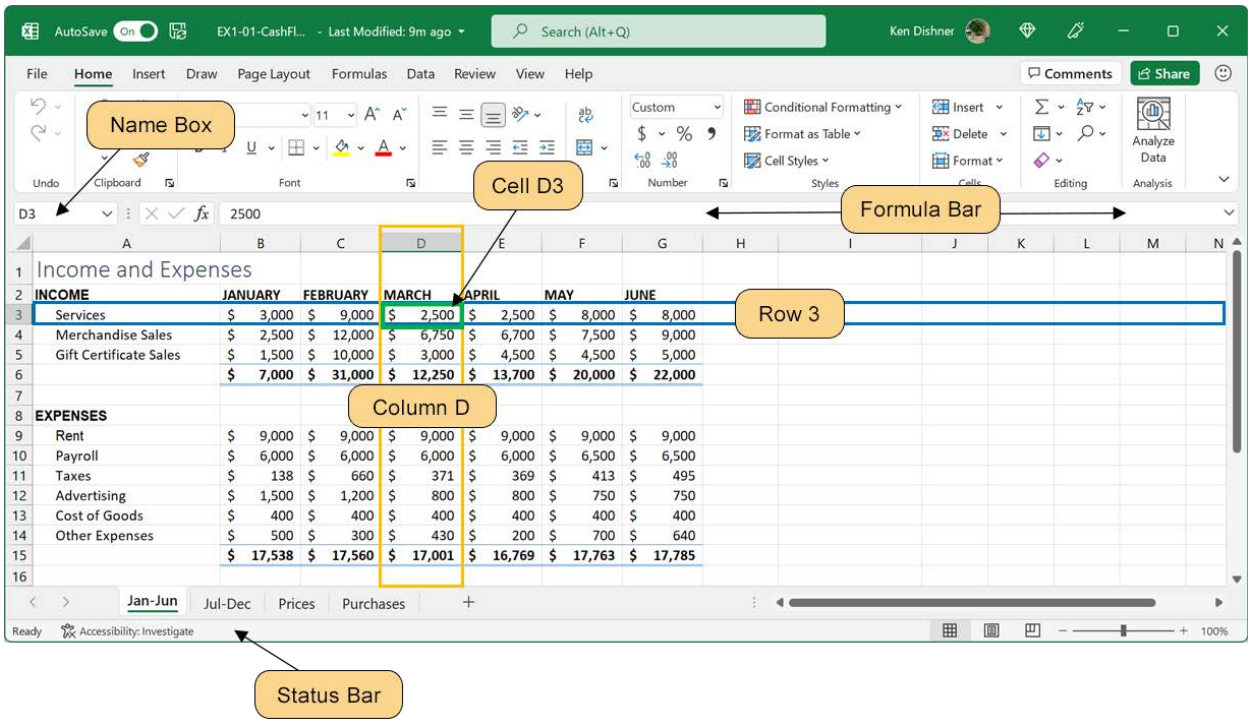



FIGURE EX 1.1

## let me try Live!

Open the student data file **EX1-01-CashFlow** and explore the Excel workbook on your own:

1. If necessary, click the **Jan-Jun** worksheet tab at the bottom of the workbook.
2. Click anywhere in **column C**.
3. Click anywhere in **row 2**.
4. Click cell **C2**.
5. Click the **formula bar**.
6. Click the **Name box**.
7. Click the **status bar**.
8. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.2 Navigating a Workbook

An Excel worksheet can include more than one million rows and more than sixteen thousand columns. That's a lot of potential data to navigate! Luckily, most spreadsheets are not quite that large. However, you may encounter workbooks with multiple worksheets and hundreds of rows and columns of data.

The Excel window includes both a **vertical scroll bar** (at the right side of the window) and a **horizontal scroll bar** (at the bottom of the window). Click the arrows at the ends of the scroll bars to move up and down or left and right to see more cells in an individual worksheet. You can also click and drag the scroll box to reposition your view of the spreadsheet. Notice that when you use the scroll bars, the selected cell does not change. Using the scroll bars changes only your view of the worksheet.

The most obvious way to select a cell in a worksheet is to click it with the mouse. Notice that Excel highlights the appropriate column letter and row number to identify the selected cell. When you select a single cell, the cell address appears in the *Name* box in the upper left corner of the spreadsheet, and the cell content appears in the formula bar (immediately below the Ribbon).

To navigate to another worksheet in the workbook, click the appropriate tab at the bottom of the worksheet grid. If the worksheet tab is not visible, use the navigation arrows located at the left side of the first sheet tab to show one worksheet at a time to the left or the right. These arrows are active only when there are worksheets not visible in your current view.

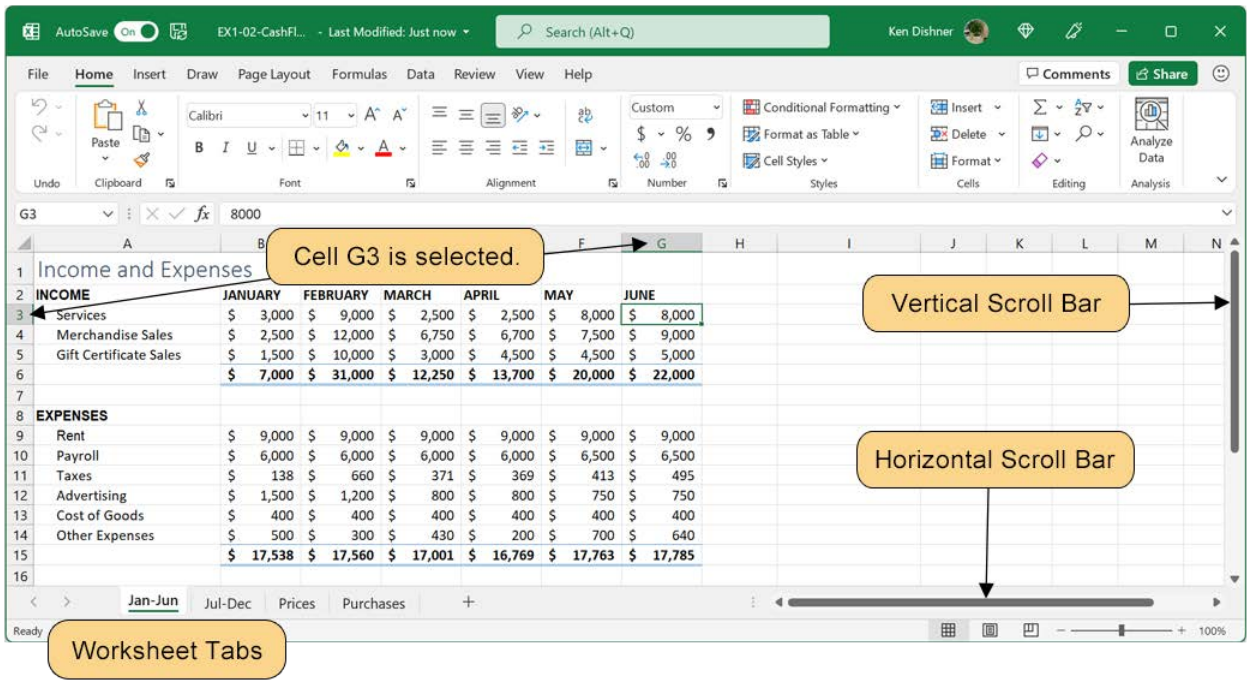



FIGURE EX 1.2

To navigate from cell to cell, use the mouse to click the cell you want to go to. You can also use keyboard shortcuts to navigate around or between worksheets.

| | |
|---|---|
| ↑ | Move up one cell |
| ↓ | Move down one cell |
| → | Move one cell to the right |
| ← | Move one cell to the left |
| Home | Move to the first cell in the row |
| Ctrl + Home | Go to cell A1 |
| Ctrl + PgDn | Move one worksheet to the right |
| Ctrl + PgUp | Move one worksheet to the left |

To select a range of cells, click the first cell in the range and drag the mouse until the cells you want are selected. Release the mouse button. You can also click the first cell in the range, press Shift, and then click the last cell in the range.

To select an entire row, point to the **row selector** (the box with the row number at the left side of the worksheet grid). When the mouse pointer changes to an arrow, click the left mouse button.

To select an entire column, point to the **column selector** (the box with the column letter at the top of the worksheet grid). When the mouse pointer changes to an arrow, click the left mouse button.

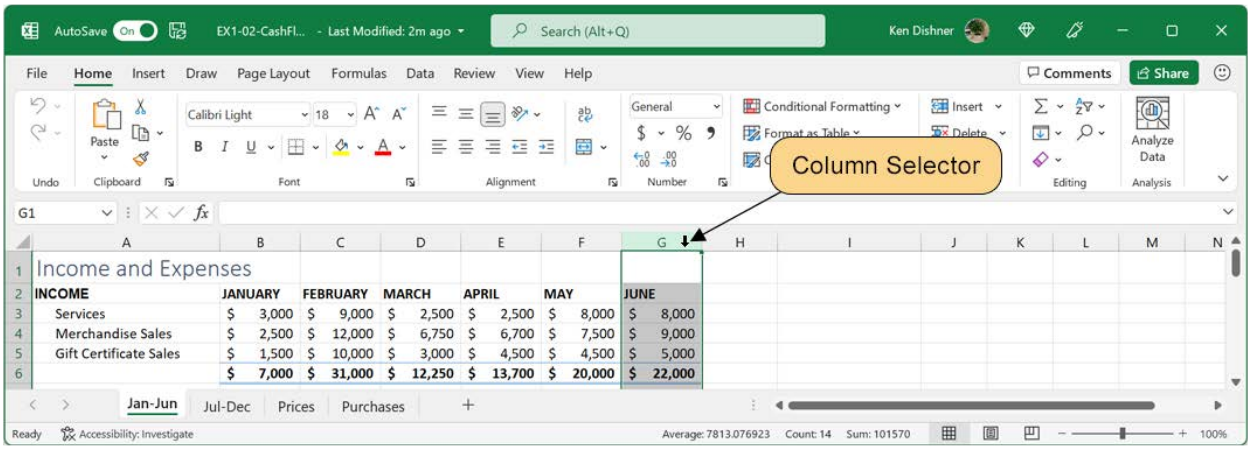



FIGURE EX 1.3

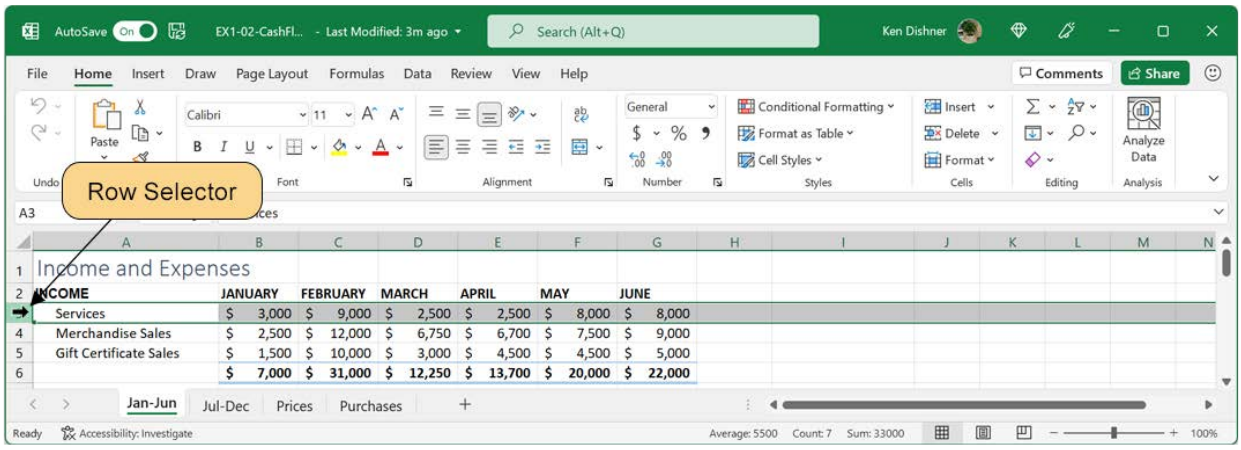



FIGURE EX 1.4

## tips & tricks

To make more worksheets visible at one time, adjust the size of the horizontal scroll bar by clicking the dotted line that appears immediately to the left of the scroll bar. Notice that the cursor shape changes to a double-sided arrow. Click and drag to the right to make the horizontal scroll bar shorter and reveal more worksheet tabs.

## tell me more

Another way to navigate to a specific cell location is to type the cell address in the *Name* box, and then press **Enter**.

Use the *Go To* dialog to navigate to a specific cell. On the *Home* tab, in the *Editing* group, click the **Find & Select** button and select **Go To** from the menu. In the *Reference* box, type the cell address and then click **OK**.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-02-CashFlow** and try this skill on your own:

1. On the *Jan-Jun* worksheet, select cell **G3**.
2. Select column **G**.
3. Select row **3**.
4. Navigate to the **Jul-Dec** worksheet.
5. Select cells **B3:G5**.
6. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

from the perspective of . . .

## SPORTS CLINIC OFFICE MANAGER

I couldn't do my job without Microsoft Excel. All the clinic financial data are kept in Excel spreadsheets, and I use Excel's analysis and formatting tools to visualize our cash flow. Any problem areas are easy to find. We sell rehab equipment directly to our patients, and I also use Excel to track the progress of our orders and sales.

# Skill 1.3 Working in Protected View

When you download a workbook from a location that Excel considers potentially unsafe, it opens automatically in Protected View. **Protected View** provides a read-only format that protects your computer from becoming infected by a virus or other malware. Potentially unsafe locations include the Internet, e-mail messages, or a network location. Files that are opened in Protected View display a warning in the **Message Bar** at the top of the window, below the Ribbon.

To disable Protected View, click the **Enable Editing** button in the Message Bar.

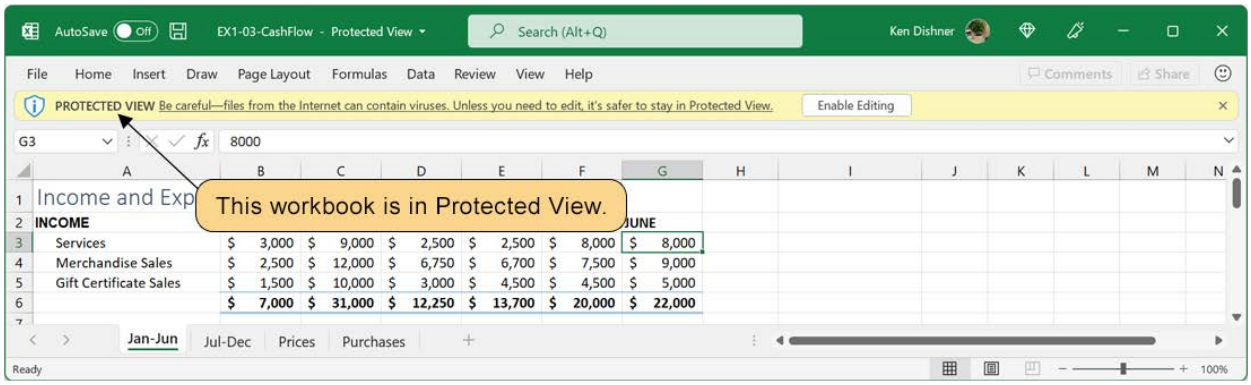



FIGURE EX 1.5

You can also enable editing from the Info page in Backstage view.

1. Click the **File** tab to open Backstage view.
2. If necessary, click **Info**.
3. The *Info* page provides more information about the file. If you are sure you want to remove it from Protected View, click the **Enable Editing** button.

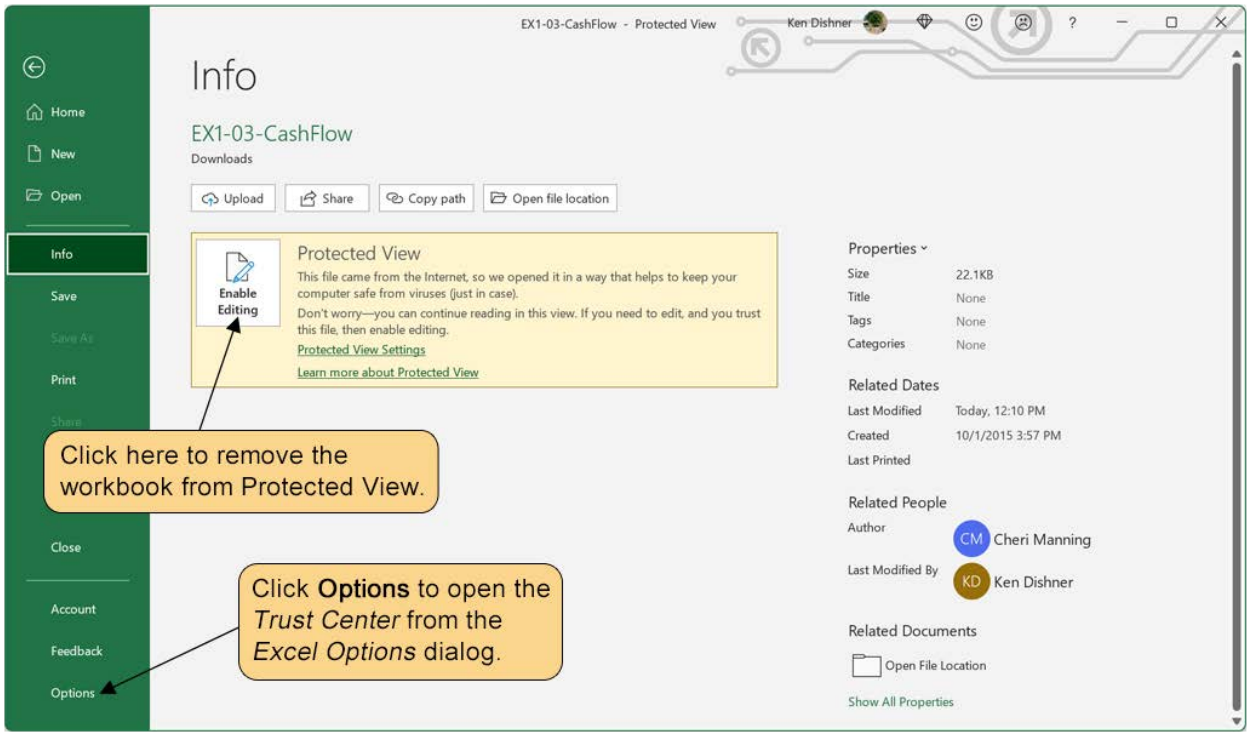



FIGURE EX 1.6

Once you enable editing for a file, it is added to the **Trusted Documents** list and will not appear in Protected View again unless you clear the *Trusted Documents* list.

To remove all files from the *Trusted Documents* list:

1. Click the **File** tab, and then click the **Options** button to open the *Excel Options* dialog.
2. Click **Trust Center**, and then click the **Trust Center Settings…** button to open the *Trust Center* dialog.
3. If necessary, click **Trusted Documents** at the left side of the *Trust Center* dialog.
4. Click the **Clear** button to clear all Trusted Documents so that they are no longer trusted.
5. Click **Yes**.
6. Click **OK** to close the *Trusted Locations* dialog.
7. Click **OK** again to close the *Excel Options* dialog.
8. The next time you open a file that was trusted previously, it will once again appear in Protected View.

## tell me more

You can modify the Trust Center settings to control which files open in Protected View.

If you are currently in Protected View, the Info page will include a link to go to the Protected View settings. If you are not currently in Protected View, open the Trust Center from the *Excel Options* dialog.

1. Click the **File** tab, and then click the **Options** button to open the *Excel Options* dialog.
2. Click **Trust Center**, and then click the **Trust Center Settings...** button.
3. If necessary, click **Protected View** at the left side of the *Trust Center* dialog. Notice that all the options for Protected View are checked by default. We do not recommend changing any of these default settings.
4. To exempt a specific location from Protected View, click **Trusted Locations**, and add the location you trust (such as a secure network folder).
5. Click **OK** to save your changes and close the *Trusted Locations* dialog.
6. Click **OK** again to close the *Excel Options* dialog.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-03-CashFlow** and try this skill on your own:

1. This workbook came from a trusted source. If the workbook opens in Protected View, disable Protected View and allow editing.
2. Open the *Trust Center* dialog and review the settings.
3. Close the *Trust Center* and *Excel Options* dialogs without making any changes.
4. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.4 Entering and Editing Text and Numbers in Cells

The most basic task in Excel is entering data in your workbook. Entering numerical data is as easy as typing a number in a cell. Numbers can be displayed as dates, currency values, percentages, or other formats. (Later skills discuss number formatting and using functions and formulas to automate numerical calculations.)

Excel is not just about numbers, though. Without text headers, descriptions, and instructions, your workbook would consist of numbers and formulas without any structure. Adding text headers to your rows and columns creates the structure for you to enter data into your workbook.

To enter data in a cell:

1. Click the cell where you want the data to appear.
2. Type the number or text.
3. Press Enter or Tab.
   Pressing Enter after entering text will move the cursor down one cell.
   Pressing Tab will move the cursor to the right one cell.

Excel gives you different ways to edit the data in your worksheet. If you want to change the contents of the entire cell, use **Ready mode**. If you want to change only part of the cell data, use **Edit mode**. The status bar, located at the lower left corner of the Excel window, displays which mode you are in—Ready or Edit.

To use Ready mode to change text:

1. Click the cell you want to change.
2. Type the new contents for the cell.
3. Press Enter or Tab when you are finished.
4. The old contents are completely removed and replaced with what you've typed.

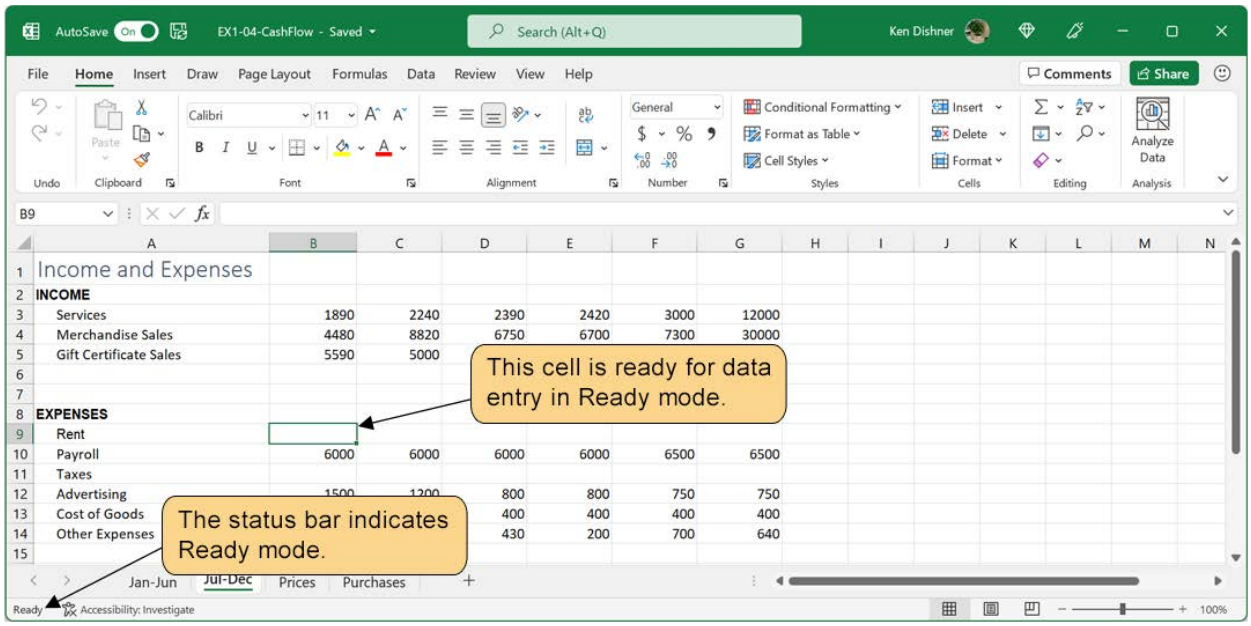



FIGURE EX 1.7

To use Edit mode to change text:

1. Double-click the cell you want to change.
2. You should now see a blinking cursor in the cell.
3. Use → and ← to move the cursor within the cell. Type the changes you want. Use Backspace to delete characters to the left of the cursor. Use Delete to delete characters to the right of the cursor. You can also click and drag your mouse to select a section of text to delete.
4. Press Enter or Tab when you are finished making your changes.

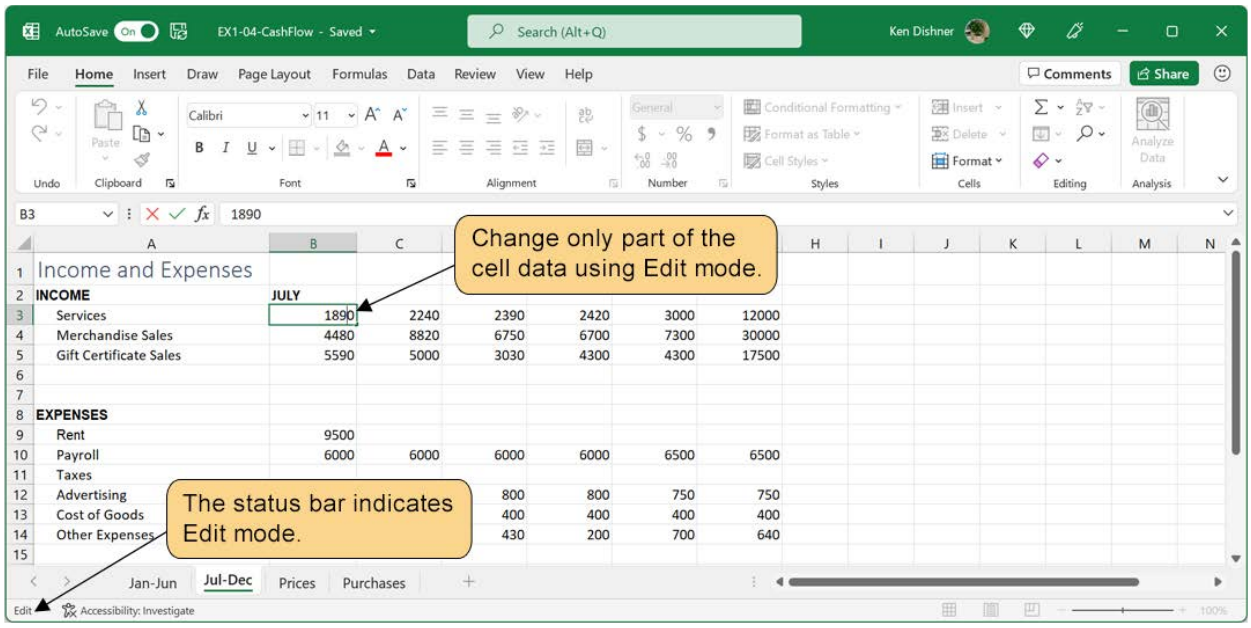



FIGURE EX 1.8

## tips & tricks

To add a line break within the cell, press Alt while pressing Enter.

## another method

As you type in a cell, the entry is displayed in the formula bar as well as in the active cell. Clicking the **Enter Formula** button next to the formula bar accepts your entry. Clicking the **Cancel** button next to the formula bar removes your entry.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-04-CashFlow** and try this skill on your own:

1. On the *Jul-Dec* worksheet, add the number **9500** to cell **B9**.
2. Add the word **JULY** to cell **B2**.
3. Change the value in cell **B3** to **1870**. You can use Ready mode or Edit mode.
4. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.5 Applying Number Formats

When you first type numbers in a worksheet, Excel applies the **General number format** automatically. The General format right-aligns numbers in the cells but does not maintain a consistent number of decimal places (43.00 will appear as 43, while 42.25 appears as 42.25) and does not display commas (so 1,123,456 appears as 1123456). For consistency, and to make your worksheet easier to read, you should apply the specific number format that is most appropriate for your data. Excel provides several number formats for you to choose from.

Figure EX 1.9 shows common Excel number formats. All numbers in row 2 contain the number 0.567. All numbers in row 3 contain the number 1234. Formatting numbers changes the appearance of the data in your worksheet but doesn't change the numerical values. The formatted number is displayed in the cell, and the actual value is displayed in the formula bar.

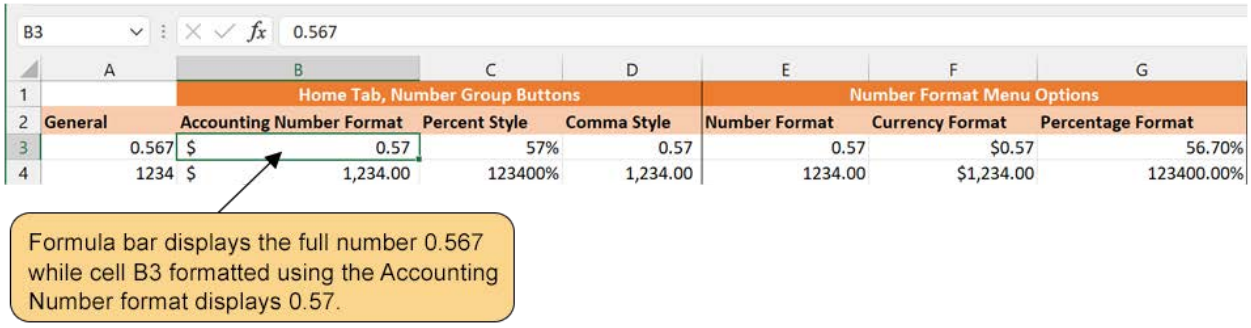
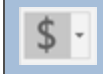



FIGURE EX 1.9

To apply the most common number formats, go to the *Home* tab, *Number* group, and click one of the following buttons:

| | |
|---|---|
|  | Click the **Accounting Number Format** button to apply formatting appropriate for monetary values. The **Accounting Number Format** aligns the $ at the left side of the cell, displays two places after the decimal, and aligns all numbers at the decimal point. Zero values are displayed as dashes (-). |
|  | Click the **Percent Style** button to have your numbers appear as %. For example, the number .02 will appear as 2%. By default, **Percent Style format** displays zero places to the right of the decimal point. |
|  | Click the **Comma Style** button to apply the same format as the Accounting Number Format but without the currency symbol. **Comma Style format** is a good number format to use if your worksheet includes many rows of numbers, summed in a total row (like a budget or cash flow projection), where too many $ symbols could be distracting. Use Comma Style formatting for all numbers except the total row. Use Accounting Number Format for the total row. |

Use *Increase Decimal* and *Decrease Decimal* to increase or decrease the number of digits that appear to the right of the decimal point. For example, if a cell contains the number 1.234 and you click the **Decrease Decimal** button twice, the cell will display 1.2. The formula bar will still display 1.234 because that is the number stored in the worksheet.

For other common number formats, click the **Number Format** arrow above the buttons in the *Number* group to display the *Number Format* menu.

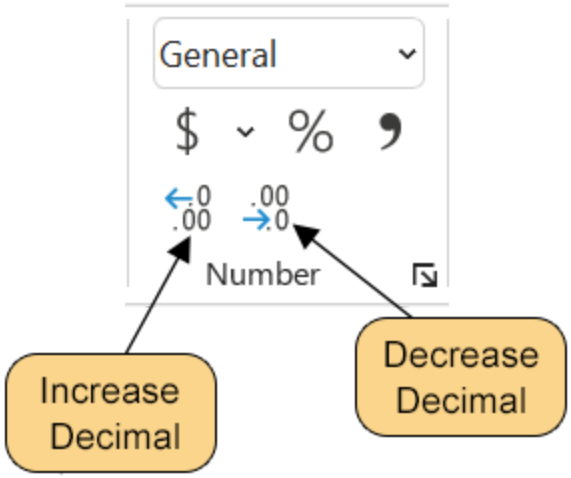



FIGURE EX 1.10

**Number**—The default **Number format** shows two decimal places by default so 1,234 displays as 1234.00 but does not include commas.

**Currency**—With the **Currency format**, columns of numbers do not align at the $ and at the decimal as they do with Accounting Number Format. Instead, the Currency format places the $ immediately to the left of the number.

**Percentage**—The *Percentage* option on the *Number Format* menu does not apply the same Percent Style format as clicking the *Percent Style* button. The *Percentage* option from the *Number Format* menu displays two digits to the right of the decimal.

**More Number Formats...**—This option opens the *Format Cells* dialog to the Number tab, where you can select from even more number formats and customize any format, including adding color, specifying the number of decimal places to display, and setting whether or not negative numbers should be enclosed in parentheses.

## tips & tricks

If you type $ before a number, Excel automatically applies the Currency number format.

## tell me more

On the *Home* tab, in the *Styles* group, click the **Cell Styles** button to expand the *Styles* gallery. At the bottom of the gallery are five number styles. Applying one of these cell styles is the same as applying a number format. However, be aware that applying the Currency cell style actually applies the Accounting Number Format, not the Currency format.

- **Comma**–applies the default Comma Style format, with two digits to the right of the decimal.
- **Comma [0]**–applies the Comma Style format, but with no digits to the right of the decimal.
- **Currency**–applies the default Accounting Number Format, with two digits to the right of the decimal.
- **Currency [0]**–applies the Accounting Number Format, but with no digits to the right of the decimal.
- **Percent**–applies the default Percent Style format.

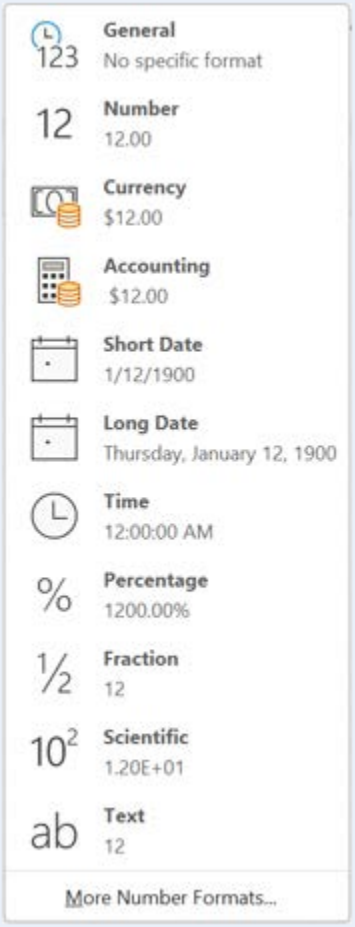



FIGURE EX 1.11
NUMBER FORMAT MENU

## another method

When you right-click a cell, these formats are available from the Mini toolbar: Accounting Number Format, Percent style, and Comma style.

The *Increase Decimal* and *Decrease Decimal* buttons are also available from the Mini toolbar.

To apply the Percent Style, you can use the keyboard shortcut Ctrl + Shift Key + 5.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-05-CashFlow** and try this skill on your own:

1. On the *Jul-Dec* worksheet, select cells **B3:G5**.
2. Apply the **Accounting Number Format**.
3. Modify the number format so no decimal places are visible after the decimal point.
4. Go to the **Prices** worksheet and select cells **C2:C10**.
5. Apply the **Currency** number format.
6. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.6 Entering Dates and Applying Date Formats

When you enter numbers in a date format such as 6/30/2019 or June 30, 2019, Excel detects that you are entering a date and automatically applies one of the date formats. Excel treats dates as a special type of number, so cells formatted as dates can be used in calculations. There are many types of date formats available, but the underlying number for the date will always be the same.

There are two number formats available from the *Number Format* menu. To apply one of these formats, from the *Home* tab, click the **Number Format** arrow above the buttons in the *Number* group, and then click the format you want:

- **Short Date format**–Applies a simple format displaying the one- or two-digit number representing the month, followed by the one- or two-digit number representing the day, followed by the four-digit year: 6/30/2019.
- **Long Date format**–Applies a longer format displaying the day of the week, and then the name of the month, the two-digit date, and the four-digit year: Sunday, June 30, 2019.

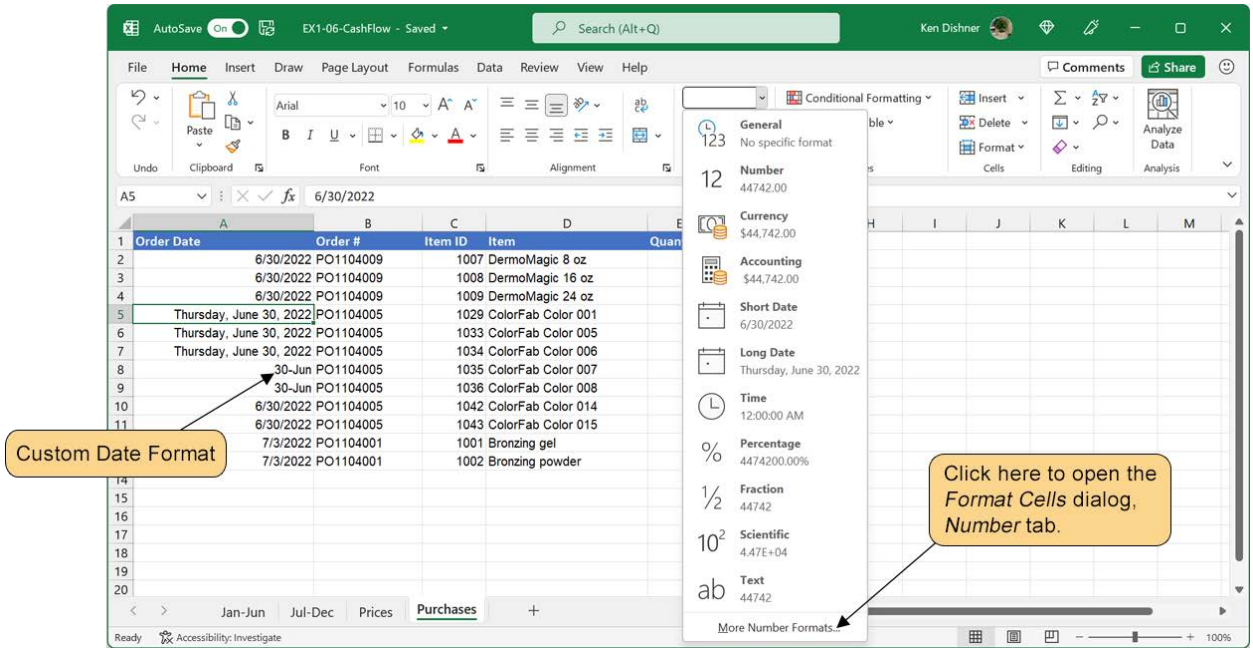



FIGURE EX 1.12

If you would like to use a different date format:

1. Select **More Number Formats...** from the *Number Format*
2. In the *Format Cells* dialog, from the *Number* tab, if necessary, click **Date** in the *Category* Excel offers a variety of prebuilt date formats to choose from.
3. Notice that as you click each format in the *Type* list, the *Sample* box shows how the active cell will display with the selected format.
4. Click the date format you would like and click **OK**.

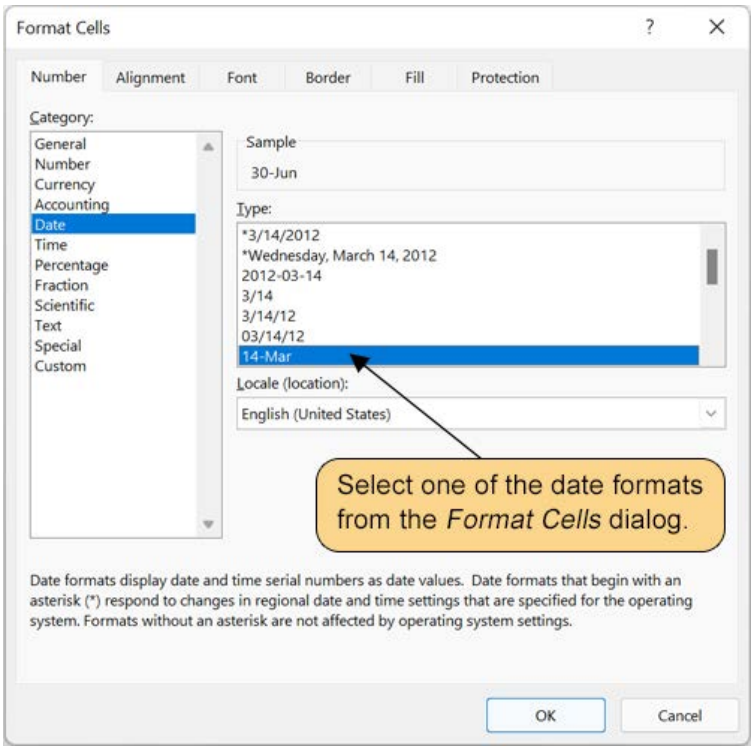



FIGURE EX 1.13

## tips & tricks

Only dates from January 1, 1900, through December 31, 9999, are stored as numbers. Dates prior to January 1, 1900 are stored as text and cannot be used in calculations. To see the serial number for a date, change the cell format from Date to *General* or *Number*. The date will be converted to a "regular" number. For example, December 31, 2009, is the number 40178.

## tell me more

Every date format can be expressed as a code. The code for the Short Date format is **m/d/yyyy**. The code for the Long Date format is more complicated: **[$ -x-sysdate]dddd, mmmm dd, yyyy**. If Excel does not offer the exact date format you want to use, you can modify the date code using the Custom number option.

1. Select **More Number Formats...** from the *Number*
2. In the *Format Cells* dialog, from the *Number* tab, click **Custom** in the *Category*
3. The *Custom* list includes the code for every number format offered. Click the code for the format closest to the format you want, and then make adjustments to the code in the *Type* The *Sample* box shows how the number format will look in your worksheet.
4. Click **OK** to apply your new custom number format.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-06-CashFlow** and try this skill on your own:

1. On the *Purchases* worksheet, review the date formats used in column A.
2. Select column A, and apply the **Long Date** format.
3. With column A still selected, apply the **Short Date** format.
4. With column A still selected, apply the format to display dates in the format similar to **14-Mar**.

If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.7 Inserting Data Using AutoFill

Use the **AutoFill** feature to fill a group of cells with the same data or to extend a data series.

With AutoFill, you can copy the same value or formula to a group of cells at once. This is much more efficient than using copy and paste over and over again.

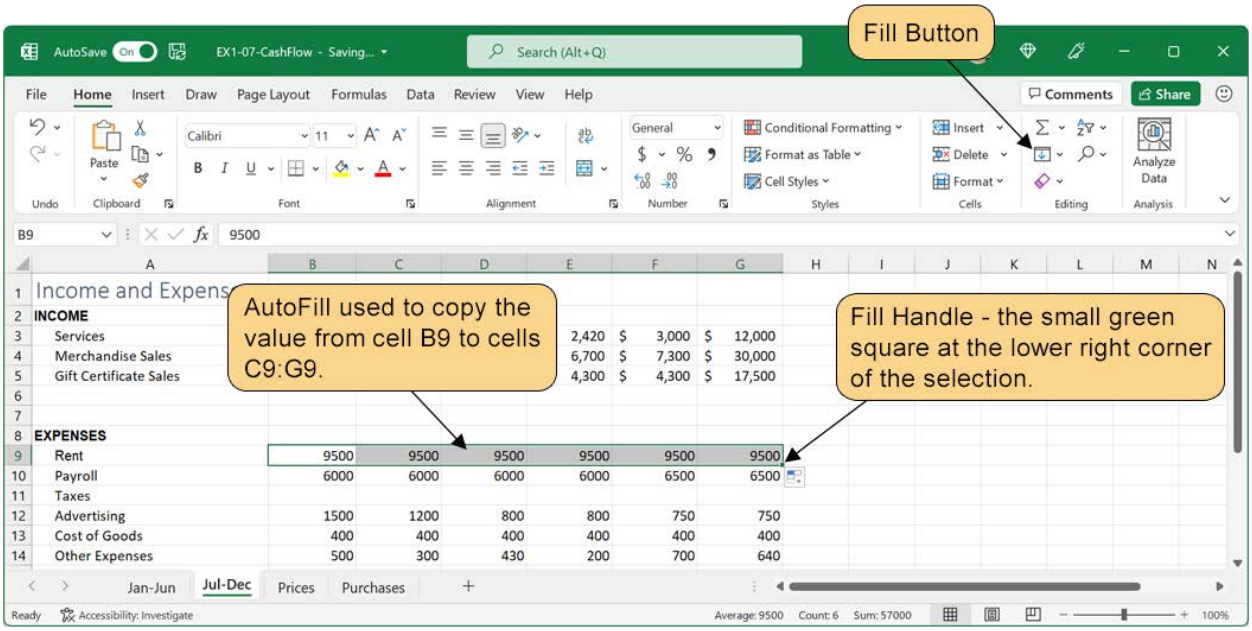



FIGURE EX 1.14

The easiest way to use AutoFill is to use the **Fill Handle** to fill data up or down in a column or to the left or right in a row.

To use the Fill Handle:

1. Select the cell(s) that contain(s) the data you want to use in the AutoFill.
2. Click and drag the **Fill Handle** in the direction you want to fill the data. The Fill Handle is the very small green square at the lower right corner of the cell(s) you selected. As you drag the Fill Handle, a tool tip appears displaying the suggested value for each highlighted cell.
3. Release the mouse button when you have highlighted the last cell you want to fill.

If you have a difficult time using the Fill Handle, use the *Fill* command from the Ribbon instead:

1. Select the entire range you want to fill, beginning with the cell(s) containing the data.
2. On the *Home* tab, in the *Editing* group, click the **Fill** button and select the type of fill you want. The options available will vary depending on the data you selected to use as the source for the fill.

If you have a group of cells with similar data in a series, AutoFill can extend the series automatically. A **data series** is any sequence of cells with a recognizable pattern like those shown in Figure EX 1.15.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | Numeric Patterns | | | |
| 2 | 1 | 2 | 3 | 4 |
| 3 | 3 | 5 | 7 | 9 |
| 4 | Student 1 | Student 2 | Student 3 | Student 4 |
| 5 | | | | |
| 6 | Date Patterns | | | |
| 7 | January | February | March | April |
| 8 | 1/1/2022 | 2/1/2022 | 3/1/2022 | 4/1/2022 |
| 9 | 1/1/2022 | 1/1/2023 | 1/1/2024 | 1/1/2025 |

FIGURE EX 1.15

Excel attempts to detect automatically if the data appear to be a series. Sometimes, however, the series doesn't fill with the data you expect or want. To change the type of data AutoFill inserts, click the **AutoFill Options** button and select a different option. From the *AutoFill Options* button, you can choose to copy the cells or fill the series. By default, Excel includes formatting when copying or filling a series; however, you can choose to copy only the cell formatting or to fill or copy the data series without formatting.

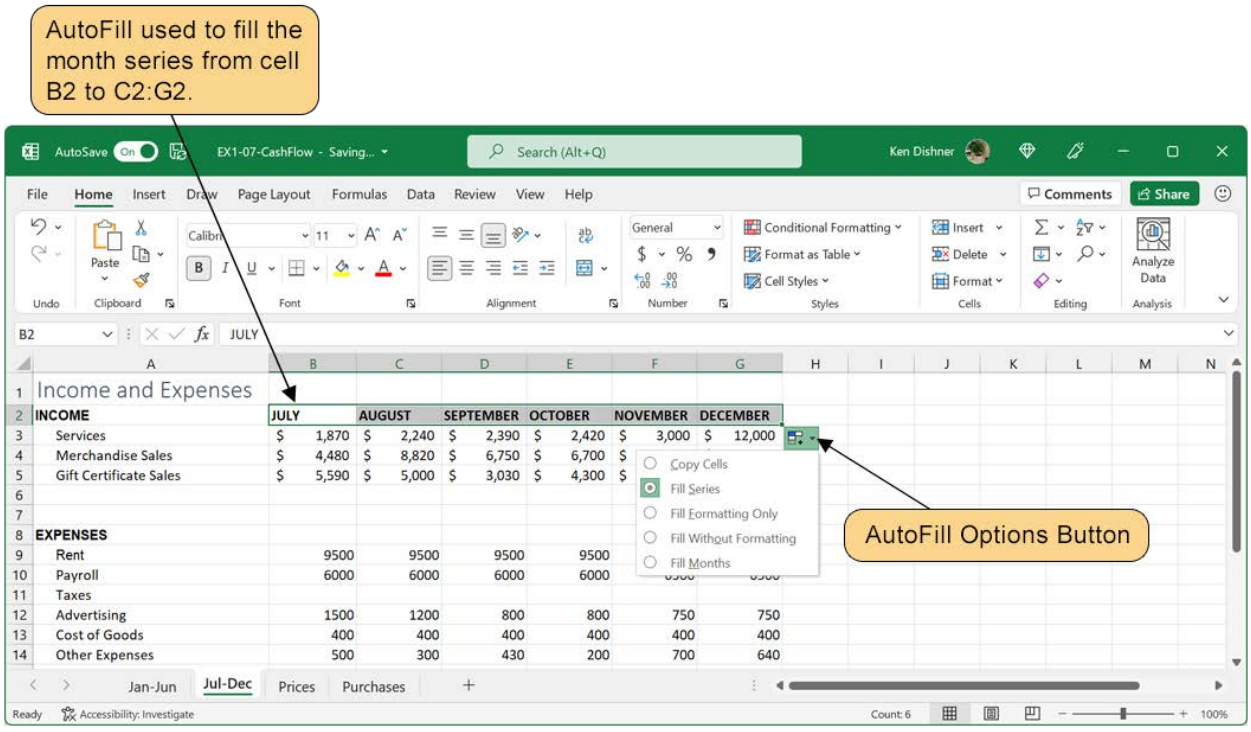



FIGURE EX 1.16

## tips & tricks

Use AutoFill to enter repetitive data in your worksheet to avoid errors from entering data manually.

## tell me more

The Fill Handle tool can be used to fill a series of dates by month as well as year. For example, if you start the series with Jan-2022 and Feb-2022, the Fill Handle will fill in the next cells with Mar-2022, Apr-2022, May-2022 and so on. When the series reaches Dec-2022, the next cell will be filled in with Jan-2023. If you are filling a series of dates, the *AutoFill Options* button will give you the options to fill by day, weekday, month, or year.

## another method

1. Pressing Ctrl + D will fill the selected cell(s) with the value from the cell above it.
2. Pressing Ctrl + R will fill the selected cell(s) with the value from the cell to the left of it.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-07-CashFlow** and try this skill on your own:

1. On the *Jul-Dec* worksheet, select cell **B9** (the rent value for July).
2. Use AutoFill to copy the value of cells **C9:G9**.
3. Select cell **B2** (JULY) and use AutoFill to complete the month series through cell **G2**.
4. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.8 Exploring Charts

A **chart** is a graphic that represents numeric data visually. In a chart, the values selected in the worksheet, the **data points**, are transformed into graphic **data markers**. Data markers can be columns, bars, pie pieces, lines, or other visual elements. Related data points, usually in the same row or column, are grouped into a **data series**. Some chart types allow you to plot multiple data series.

Figure EX 1.17 shows a column chart with a single data series—*Services - Individual.* You can tell at a glance that the FEB column is the shortest and, therefore, that February has the fewest sales for individual services.

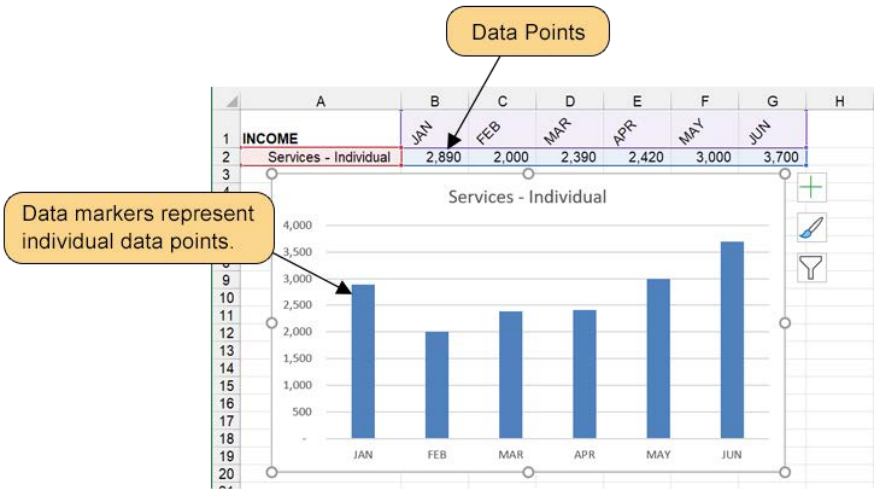



FIGURE EX 1.17

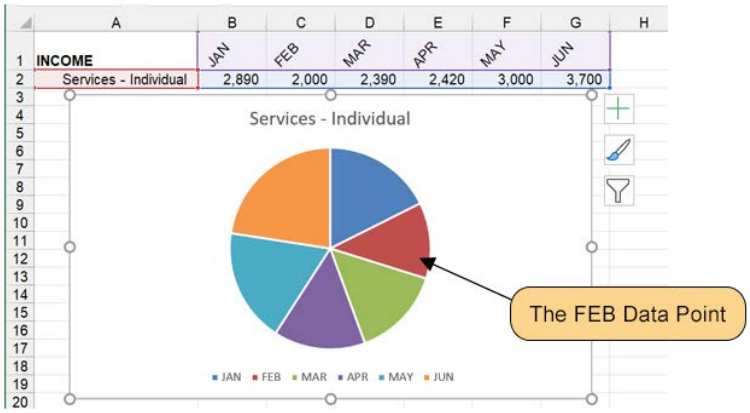



FIGURE EX 1.18

Figure EX 1.18 is a pie chart using the same data as Figure EX 1.17. Each individual data point is represented by a piece of the pie. In this chart, it is not as obvious that FEB is the smallest data point.

Most charts plot data along two axes. The **y axis** goes from bottom to top. It is the vertical axis. The **x axis** goes from left to right. It is the horizontal axis. Typically, but not always, values are plotted against the y axis and categories are listed along the x axis. In Figure EX 1.19, the y axis shows a range of values from 0 to 4,000. The x axis lists the months. For each category (month), the top of the column reaches the appropriate value on the y axis.

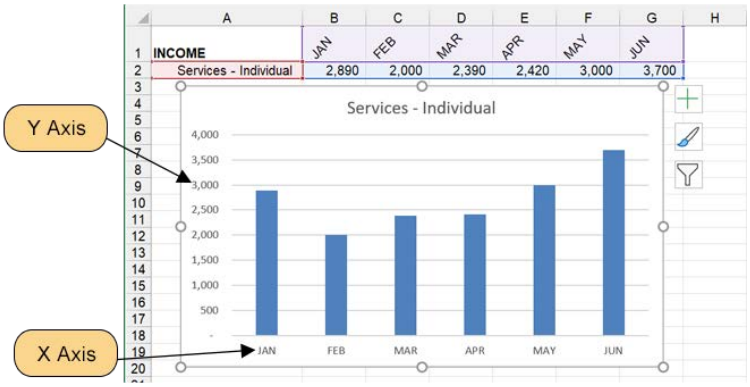



FIGURE EX 1.19

When working with charts, there are a few other common chart elements you should be familiar with:

- The **plot area** is the area where the data series are plotted.
- The **chart area** is the area that encompasses the entire chart including the plot area and optional layout elements, such as title and legend.
- The **chart title** is a text box above or overlaying the chart.
- The **legend** tells you which data point or data series is represented by each color in the chart.

When a chart is selected, two contextual tabs are available: the *Chart Design* tab and the *Format* tab. On the *Format* tab, in the *Current Selection* group, the *Chart Elements* box displays the name of the chart element that is currently selected. This can be helpful if you need to ensure that you have selected the chart area, the plot area, or another chart element. To select a specific chart element, expand the **Chart Elements** list and select the chart element you want to select.

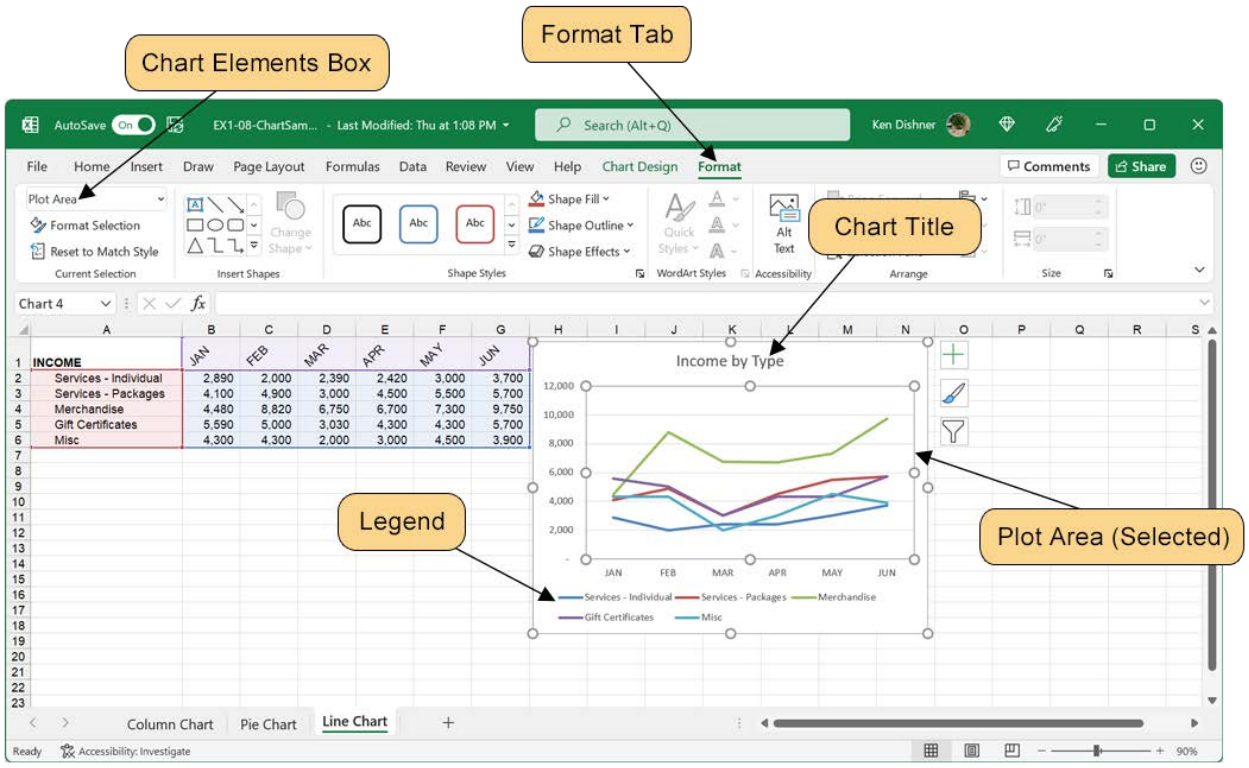



FIGURE EX 1.20

## tips & tricks

Because charts make it easier to see trends and relationships, they are an important tool for analyzing data. However, the chart type and formatting can influence how others perceive the data. Be careful that the chart does not present the data in a way that may be misleading.

## tell me more

If the chart is located on the same worksheet as its data, Excel will highlight that data when you select certain chart elements. For example, select the chart area or the plot area, and Excel highlights the cells containing the data point values in blue, the data series labels in red, and the category labels in purple. If you select a single data series, only those data will be highlighted.

## let me try Live!

Open the student data file **EX1-08-ChartSamples** and try this skill on your own:

1. Begin with the **Column Chart** sheet. Click any of the data markers to select the entire data series. Use the *Chart Elements* box to verify that you have selected the data series. Observe how the worksheet data are represented by the column data markers.
2. Go to the **Pie Chart** sheet. Select the chart legend. Use the legend to match the pie pieces to the data point values.
3. Go to the **Line Chart** sheet. Select the line representing the *Merchandise* data series. Observe that when the *Merchandise* series is selected, cells B4:G4 (the data points) are highlighted in blue.
4. Select the x axis.
5. Select the y axis. Use the *Chart Elements* list if necessary.
6. Close the file without saving any changes you may have made accidentally.

# Skill 1.9 Using the Recommended Charts Feature

One trick to working with charts is to select the correct chart type. Excel makes this easier by recommending specific chart types based on the data you have selected in the worksheet. The recommended charts are available from both the Quick Analysis tool and the *Chart Options* dialog.

To add a recommended chart to a worksheet using the Quick Analysis tool:

1. Select the data you want to visualize as a chart.
2. The *Quick Analysis tool* button appears near the lower right corner of the selected range. Click the **Quick Analysis tool** button, and then click the **Charts** tab in the Quick Analysis Tool.
3. Hover the mouse cursor over each chart type to see a live preview of the chart. Click the button for the chart type you want. Recommended charts may include multiple versions of the same chart type. Check the live preview carefully to ensure that the data display exactly as you want.

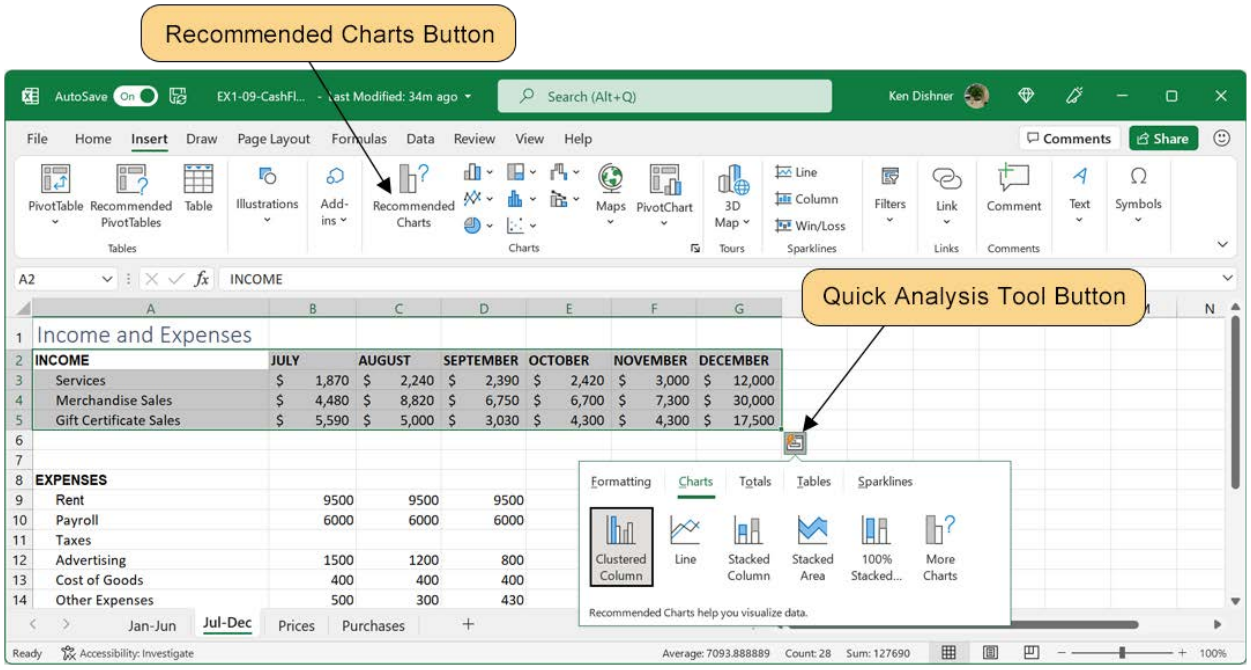



FIGURE EX 1.21

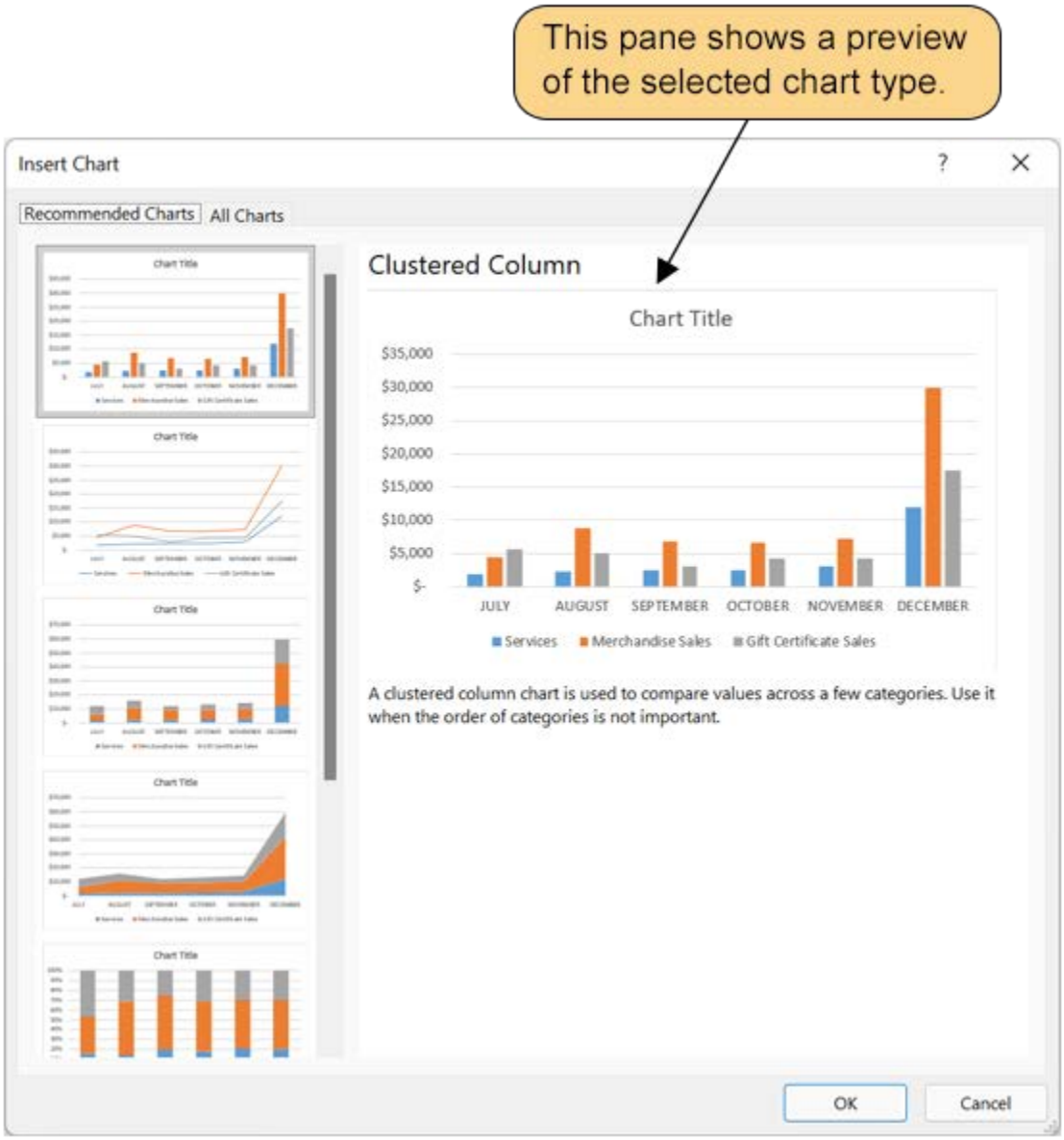



FIGURE EX 1.22

If none of the recommended charts presented in the Quick Analysis tool are precisely what you want, use the *Recommended Charts* button to open the *Insert Chart* dialog:

1. Select the data for the chart.
2. On the *Insert* tab, in the *Charts* group, click the **Recommended Charts** button.
3. The first tab in the *Insert Chart* dialog, *Recommended Charts,* displays the same chart options as the *Charts* tab in the Quick Analysis tool, plus a few more. When you select a chart type, a preview of the chart appears in the right pane of the dialog.
4. Click **OK** to insert the selected chart into the worksheet.

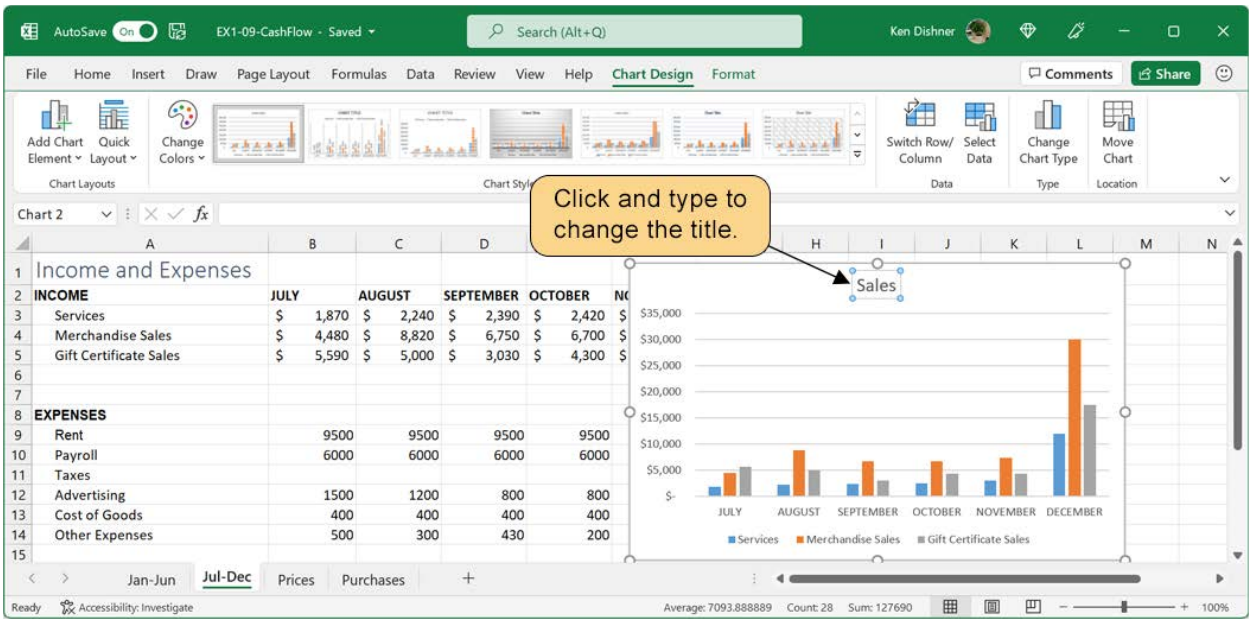



FIGURE EX 1.23

When you insert a chart, there is a title placeholder that displays *Chart Title*. To change the title text, click the *Chart Title* box once to select it and type the title. The default text is overwritten once you begin typing. You can also type text in the formula bar and then press Enter.

To edit the chart title, click the *Chart Title* box once to select it and then click it again to enter Edit mode. Edit the text directly in the *Chart Title* box.

To delete a chart, click the chart once to select it, and then press Backspace or Delete.

## tips & tricks

The Quick Analysis tool is available only if the data selected for the chart are in contiguous cells—a group of cells that are all next to one another without any cells left out of the group. To create a chart from a noncontiguous group of cells, you must use the *Insert Chart* dialog or one of the insert chart buttons from the *Insert* tab, *Charts* group.

## tell me more

To create a chart that is not listed as a recommended chart, you can use one of the insert chart buttons from the *Insert* tab, *Charts* group or the *All Charts* tab in the *Insert Chart* dialog. To learn about creating these charts, refer to the skills *Inserting a Column Chart or Bar Chart*, *Inserting a Pie Chart*, and *Inserting a Line Chart*. There are also advanced skills on creating other charts such as hierarchy charts, statistical charts, and waterfall charts.

## another method

You can open the *Insert Chart* dialog from the *Quick Analysis Tool* button:

1. Select the data for the chart.
2. Click the **Quick Analysis tool** button.
3. Click the **Charts** tab, and then click the **More Charts** button to open the *Insert Chart* dialog.

## let me try Live!

Open the student data file **EX1-09-CashFlow** and try this skill on your own:

1. If necessary, go to the **Jul-Dec** worksheet, and select cells **A2:G5.**
2. Insert a **Clustered Column** chart based on the first recommended chart type.
3. Change the title to: `Sales`
4. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.10 Entering Simple Formulas

A **formula** is an equation used to calculate a value. A formula can perform a mathematical calculation, such as displaying the sum of **35 + 47**, or a formula can calculate a value using cell references, such as displaying a value equal to the value of another cell (=**B15**) or calculating an equation based on values in multiple cells (=**B17+B18-B19**).

In Figure EX 1.24, cell B19 contains the formula =**B15**. This formula directs Excel to make the value of cell B19 equal to the value of cell B15. If the value in cell B15 changes, the value displayed in cell B19 will update accordingly.

Notice that when the cell is selected, the result of the formula is displayed in the cell, while the formula is displayed in the formula bar.

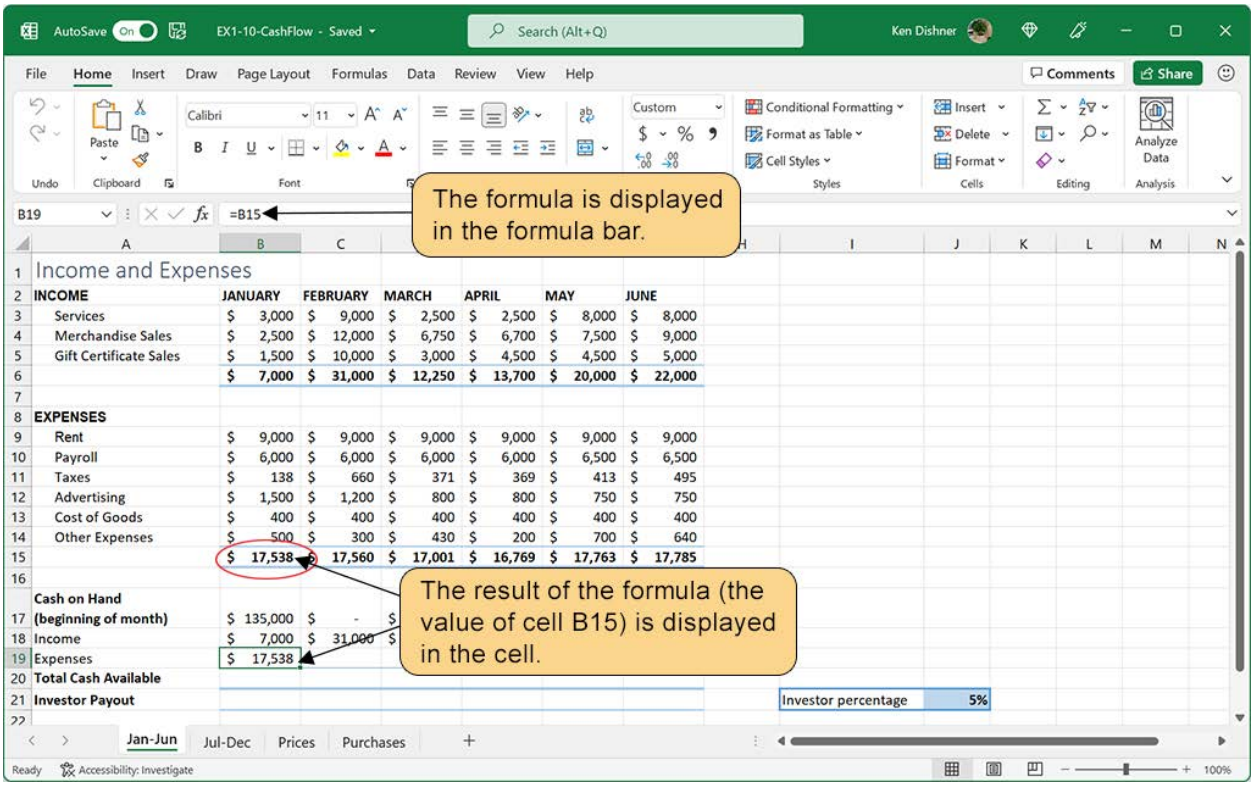



FIGURE EX 1.24

To enter a formula:

1. Click the cell in which you want to enter the formula.
2. Press [=] and begin typing the formula. The [=] tells Excel that you are entering a formula, not standard text or numeric data.
3. Use the following symbols for mathematical operations:

| | |
|---|---|
| Addition | + |
| Subtraction | - |
| Multiplication | * |
| Division | / |

4. To add a cell reference to a formula, you can type the cell address or click the cell. If you are in the middle of typing a formula and you click another cell in the worksheet, Excel knows to add that cell reference to the formula instead of moving to it.
5. Press Enter or click the **Enter** button ✔ to the left of the formula bar when you are finished entering the formula.

When you edit the formula in the cell or the formula bar, any referenced cells are highlighted in the same color as the cell reference in the formula. When you have a formula with multiple cell references, such as the one in Figure EX 1.25, the colors make it easier to troubleshoot any errors.

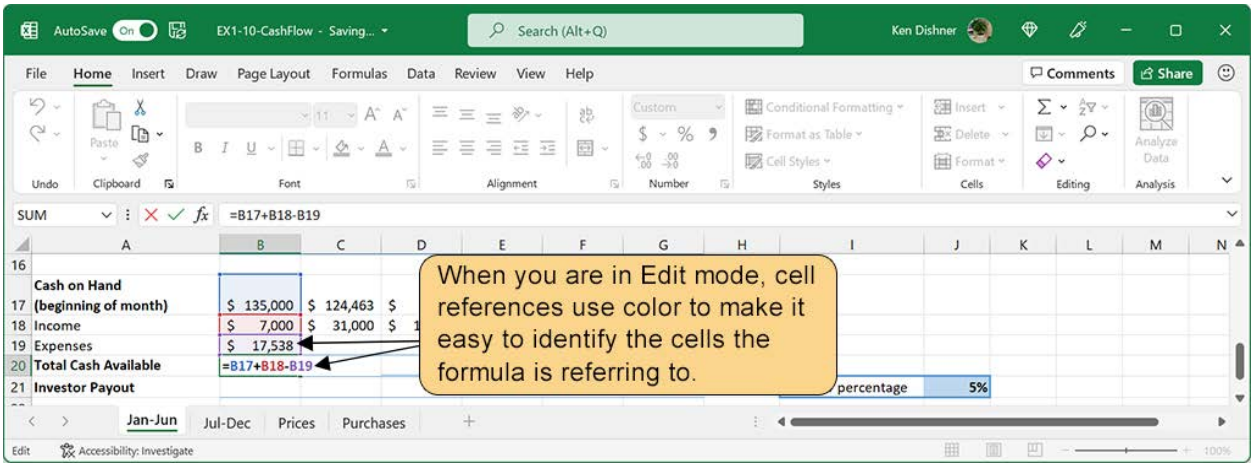



FIGURE EX 1.25

## tell me more

When you enter a formula with more than one mathematical operation, the formula is not necessarily calculated from left to right. Excel calculations follow the mathematical rules called the **order of operations** (also called **precedence**).

The rules state that mathematical operations in a formula are calculated in this order:

1. Exponents and roots
2. Multiplication and division
3. Addition and subtraction

Adding parentheses around part of a formula will override the order of operations, forcing Excel to perform the calculation within the parentheses first.

4 + (5 * 2) = 14—Excel calculates 5 * 2 first (10), and then adds 4.

(4 + 5) * 2 = 18—Excel calculates 4 + 5 first (9), and then multiples by 2.

4 + 5 ^ 2 = 29—Excel calculates 5 to the 2nd power first (25), and then adds 4.

(4 + 5) ^ 2 = 81—Excel calculates 4 + 5 first (9), and then raises that number to the 2nd power.

If you have trouble remembering the order of operations, use the phrase "**P**lease **E**xcuse **M**y **D**ear **A**unt **S**ally." PEMDAS = **P**arentheses, **E**xponents, **M**ultiplication, **D**ivision, **A**ddition, **S**ubtraction

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-10-CashFlow** and try this skill on your own:

1. On the *Jan-Jun* worksheet, enter a formula in cell **B19** to display the value of cell **B15** (the total expenses for January).
2. In cell B20, enter a formula to calculate the cash balance for the month: the cash available at the beginning of the month (cell **B17**) + income for the month (cell **B18**) – expenses for the month (cell **B19**).
3. On the *Jul-Dec* worksheet, enter a formula in cell **B11** to calculate taxes by multiplying the value of merchandise sales (cell **B4**) by **5%**.
4. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.11 Understanding Absolute and Relative References

A cell's address, its position in the workbook, is referred to as a **cell reference** when it is used in a formula. In Excel, the $ character before a letter or number in the cell address means that part of the cell's address is ***absolute*** (nonchanging). Cell references can be relative, absolute, or mixed.

- A **relative reference** is a cell reference that adjusts to the new location in the worksheet when the formula is copied.
- An **absolute reference** is a cell reference whose location remains constant when the formula is copied.
- A **mixed reference** is a combination cell reference with a row position that stays constant with a changing column position (or vice versa).

Relative reference—A1

Absolute reference—$A$1

Mixed reference with absolute row—A$1

Mixed reference with absolute column—$A1

Here's how relative and absolute references work:

When you type a formula into a cell, it uses ***relative*** references by default. Excel notes the position of the referenced cell ***relative*** to the active cell. For example, if cell B19 is the active cell and you type the formula **=B15**, Excel displays the value of the cell that is up four rows from the active cell.

- If you change the structure of the worksheet by adding or removing rows or columns, Excel will automatically update all relative cell references. In this example, Excel will update the formula to reflect the new address of the cell that is up four rows from the cell containing the formula.
- If you copy the formula **=B15** from cell B19 and paste it into cell C19, the pasted formula will update automatically to **=C15** to reflect the cell address that is up four rows from the pasted formula.

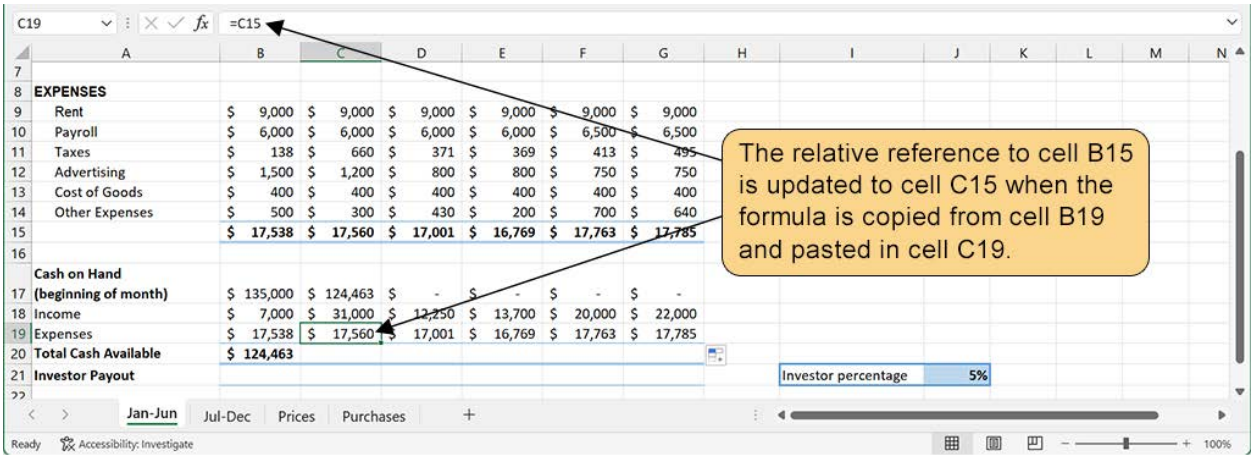



FIGURE EX 1.26

But what if you don't want the cell reference to adjust? For example, in Figure EX 1.27 cell J21 contains a value that you want to use in calculations for multiple cells in a row. If you were to copy the formula **=B20*J21** from cell B21 to cell C21, the formula would update to **=C20*K21** (not what you intended) because both of the cell references are relative. Instead, you want the reference to cell J21 to be ***absolute***, so it does not update when you copy it. If you use the formula **=B20*$J$21** instead and copy it from cell B21 to cell C21, the pasted formula will update only the relative reference **B20**. The absolute reference **$J$21** will remain constant. The formula in cell C21 will be **=C20*$J$21**.

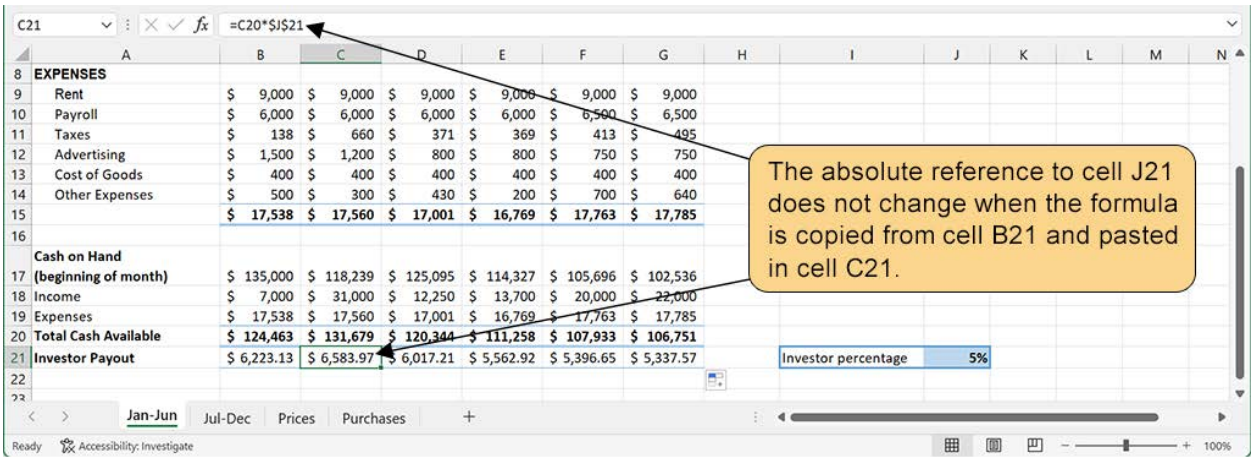



FIGURE EX 1.27

## tips & tricks

If you cut and paste a formula, Excel assumes that you want the formula to maintain its previous value and treats the formula as if it had included absolute references, pasting the formula exactly as it was in the original cell.

## another method

Another way to change the cell reference type is to select the cell reference in the formula bar, and then press F4 to cycle through the various reference types until you find the one you want (absolute, mixed with absolute row, mixed with absolute column, and then back to relative).

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-11-CashFlow** and try this skill on your own:

1. On the *Jan-Jun* worksheet, use AutoFill to copy the formula from cell **B19** to cells **C19:G19**. Click cell **G19** to observe the updated cell reference. Now copy the formula in cell **B20** to cells **C20:G20**. Note how the relative reference in the formulas update.
2. In cell **B21**, enter a formula to calculate the investor payout for the month: the cash balance (cell **B20**) multiplied by the investor percentage (cell **J21**). Be sure to use an absolute reference for cell J21.
3. Use AutoFill to copy the formula in cell **B21** to cells **C21:G21**. Click cell **G21** to observe the copied formula with the absolute reference to cell *J21*. If you entered the formula in B21 correctly, the cell reference to J21 will remain constant.
4. On the *Jul-Dec* worksheet, use AutoFill to copy the formula in cell **B11** to cells **C11:G11**. Observe that the relative reference updates as the formula is copied across the row. Delete the chart if it is in the way.
5. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.12 Using Functions in Formulas

**Functions** are preprogrammed shortcuts for calculating equations. Functions can simplify a straightforward computation such as figuring the total of a list of values. They can also calculate the answer to a complicated equation such as figuring the monthly payment amount for a loan.

Most functions require you to provide input called the **arguments**. For example, when writing a formula using the SUM function to calculate the total of a list of values, each value or range of values to be included in the calculation is an argument. Multiple arguments are separated by commas [,].

This formula will calculate the total of the values in cells B9 through B14:

**SUM(B9, B10, B11, B12, B13, B14)**

In this example, each cell reference is an argument.

An easier way to write the arguments for this formula is:

**SUM(B9:B14)**

In the second example, the function requires only one argument—the cell range containing the values. Both formulas will return the same total value.

The easiest way to enter a formula using a simple function like SUM is to type the formula directly in the cell or the formula bar. Begin the formula by typing [=], and then type the function name. After the function name, type [(] followed by the function arguments, separated by commas, and then [)]. Press [Enter] to complete the formula.

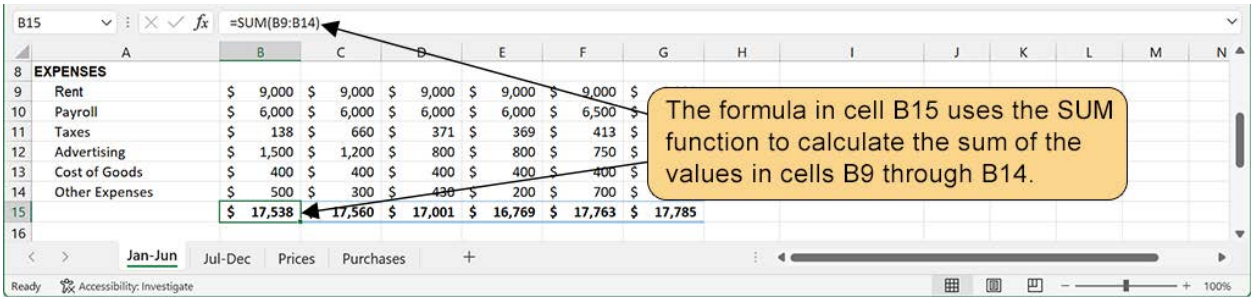



FIGURE EX 1.28

## tips & tricks

Do not include comma separators in numerical values in formulas that use functions. Excel interprets commas as function argument separators. Excel would interpret the formula =SUM(10,000,15,000) as 10 + 000 +15 +000 instead of 10,000 + 15,000, giving you a result of 25 intead of 25,000.

## tell me more

You can also enter functions in formulas using AutoSum, Formula AutoComplete, and the *Function Arguments* dialog. These methods are covered in later skills.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-12-CashFlow** and try this skill on your own:

1. On the *Jan-Jun* worksheet, review the formulas in rows **6** and **15**.
2. On the *Jul-Dec* worksheet, in cell **B6**, enter the formula using the SUM function to calculate the total of cells **B3** through **B5**.
3. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.13 Using AutoSum to Insert a SUM Function

If your spreadsheet includes numerical data organized in rows or columns, **AutoSum** can enter totals for you. When you use AutoSum, Excel enters the SUM function arguments using the most likely range of cells based on the structure of your worksheet. For example, if you use AutoSum at the bottom of a column of values, Excel will assume that you want to use the values in the column as the function arguments. If you use AutoSum at the end of a row of values, Excel will use the values in the row. To insert a SUM function using AutoSum:

1. Select the cell in which you want to enter the function.
2. On the *Home* tab, in the *Editing* group, click the **AutoSum** button.
3. Excel automatically inserts a formula with the SUM function, using the range of cells contiguous to (next to) the selected cell as the arguments for the function. You can increase or decrease the range of cells selected by clicking and dragging the corner of the highlighted cell range.
4. Press Enter to accept the formula.

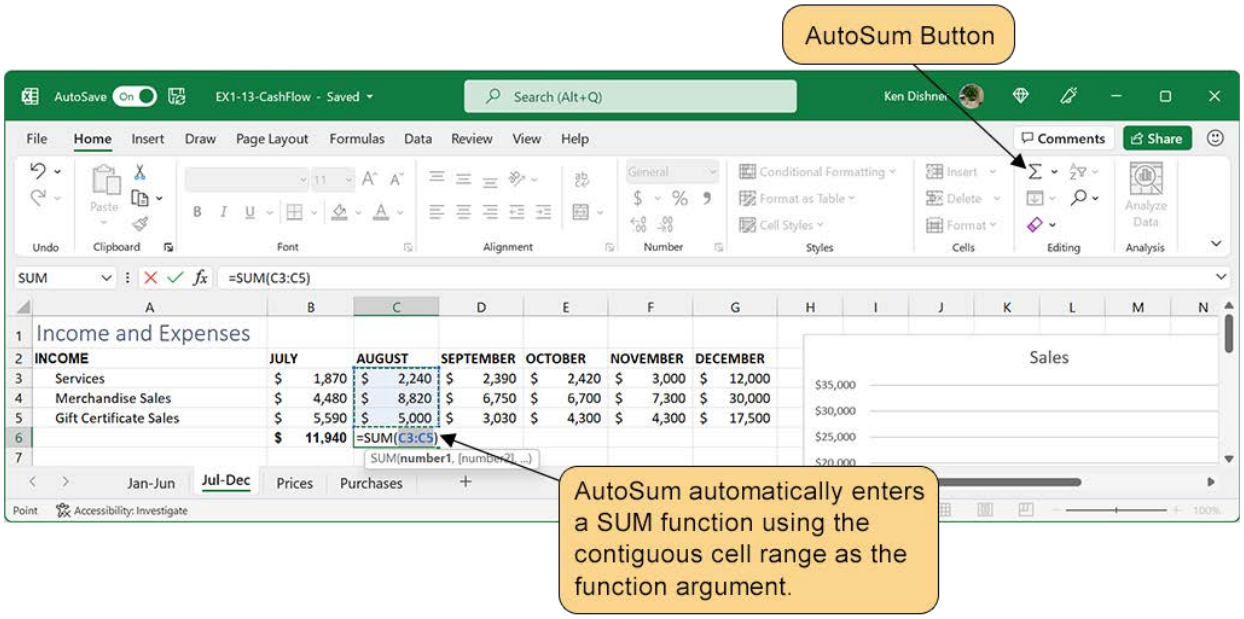



FIGURE EX 1.29

## another method

- AutoSum is also available on the *Formulas* tab, in the *Function Library* group.
- You can also click the **AutoSum** button arrow and select **SUM** from the list.
- Another way to use the AutoSum function is to select a range of cells, and then click the **AutoSum** Excel will insert the SUM function in the next available (empty) cell.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-13-CashFlow** and try this skill on your own:

1. On the *Jul-Dec* worksheet, select cell **C6**.
2. Use AutoSum to enter a formula to calculate the total of cells **C3:C5**.
3. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.14 Calculating Totals with the Quick Analysis Tool

When you have a range of cells selected, you can use the **Quick Analysis tool** to calculate totals down entire columns or across entire rows at once. The Quick Analysis tool includes five types of calculations:

- **Sum**—calculates the total of the values in each row or column.
- **Average**—calculates the average of the values in each row or column.
- **Count**—counts the number of cells that contain values in each row or column.
- **% Total**—calculates the percentage of the overall total for the total of each row or column: the sum of values in the row or column divided by the sum of the values in the entire selection.
- **Running Total**—calculates a total for each row or column that includes the values in the row or column plus the values in all the previous rows or columns. Notice that the formula for the running total uses an absolute reference for the first cell in the range and a relative reference for the last cell in the range.

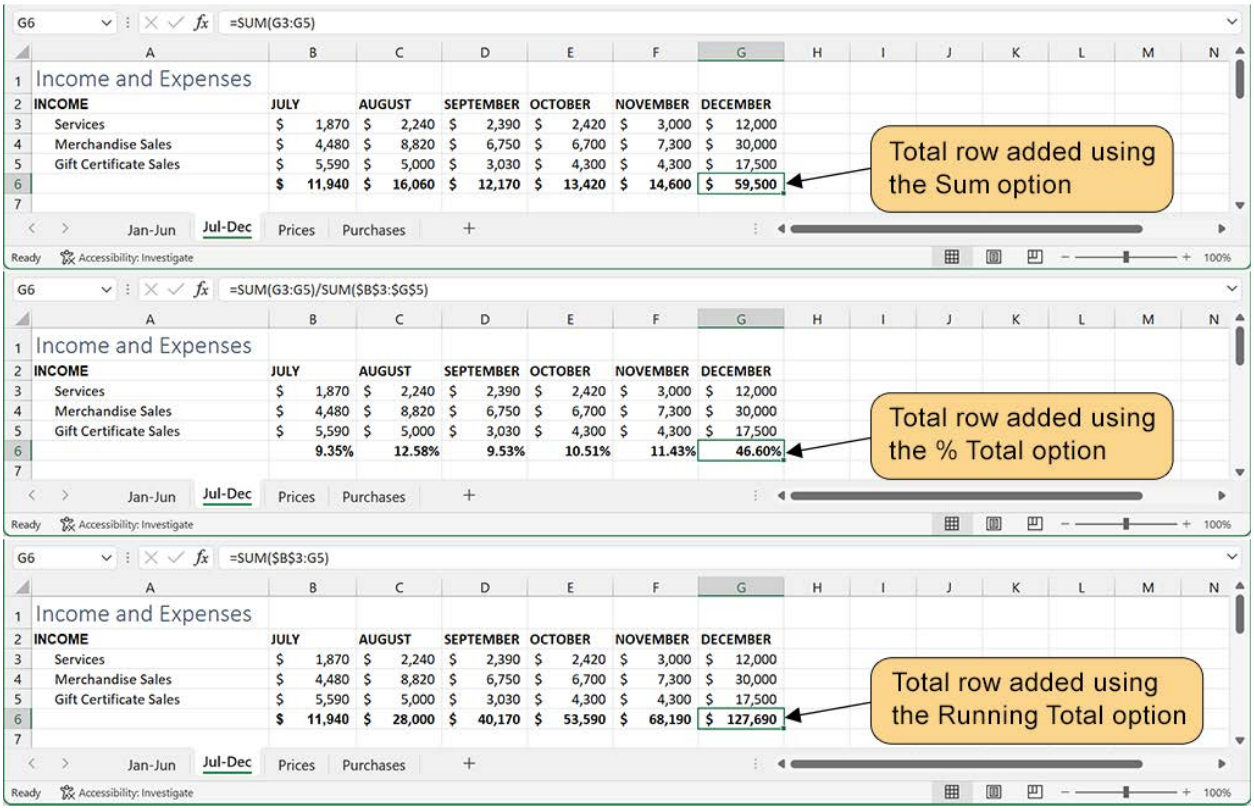



FIGURE EX 1.30

To use the Quick Analysis tool to calculate totals:

1. Select the range of cells. Totals can be inserted below or to the right of the selected cells.
2. The Quick Analysis tool button appears near the lower right corner of the selected range. Click the **Quick Analysis tool** button, and then click the **Totals** tab.

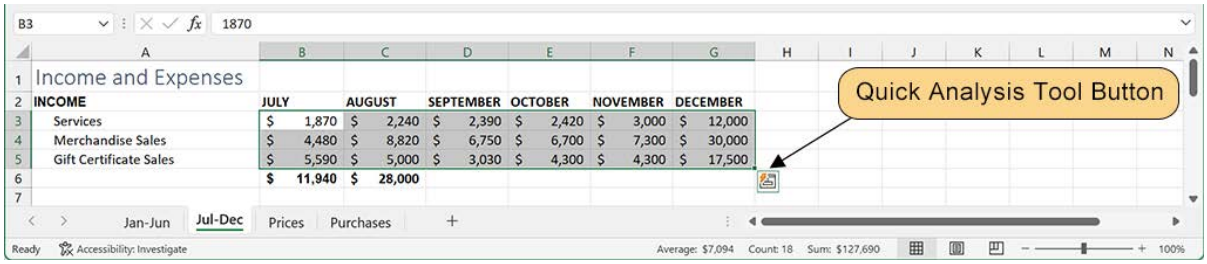



FIGURE EX 1.31

3. Notice that Excel displays a preview of the formulas as you hover the mouse pointer over each option. As shown in Figure EX 1.32, the images in the Quick Analysis tool show where the formulas will be inserted. The first set of buttons shows a blue highlight along the bottom, indicating that the formulas will be inserted below the selected range. The second set of buttons shows a yellow highlight along the right side, indicating that the formulas will be inserted to the right of the selected range.

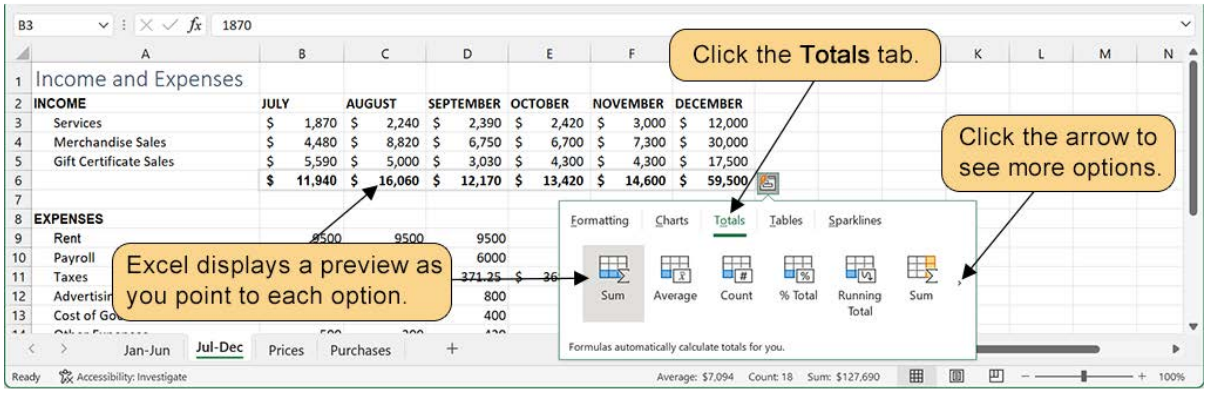



FIGURE EX 1.32

4. Click the button that represents the type of calculation you want to insert.
5. If there are data in any of the cells where the total formulas will be inserted, Excel asks if you want to replace them. Click **OK**.

## tips & tricks

If the Quick Analysis tool button is not visible, move your mouse cursor over the selected cell range, without clicking. This action should make the button appear.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-14-CashFlow** and try this skill on your own:

1. On the *Jul-Dec* worksheet, select the cell range **B3:G5**.
2. Click the **Quick Analysis tool** button, and then click the **Totals** tab.
3. Click the first **Sum** button to insert totals in the row beneath the selected cell range.
4. If Excel asks if you want to replace the existing data, click **OK**.
5. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.15 Using the Status Bar

The **status bar** appears at the bottom of the Excel window and displays information about the current worksheet. By default, the status bar displays whether you are in Ready or Edit mode and information about the selected cells (such as the number of cells selected, the sum of the values in the selected cells, or the average of the values in the selected cells). You can customize the status bar to show other information about the worksheet, the minimum or maximum value in the selected cells, and whether Caps Lock is on or off.

To change the information shown on the status bar:

1. Right-click anywhere on the status bar.
2. The *Customize Status Bar* menu appears. Options with checkmarks next to them are currently active. Options without a checkmark are not currently active.
3. Click an item on the menu to add it to or remove it from the status bar display.

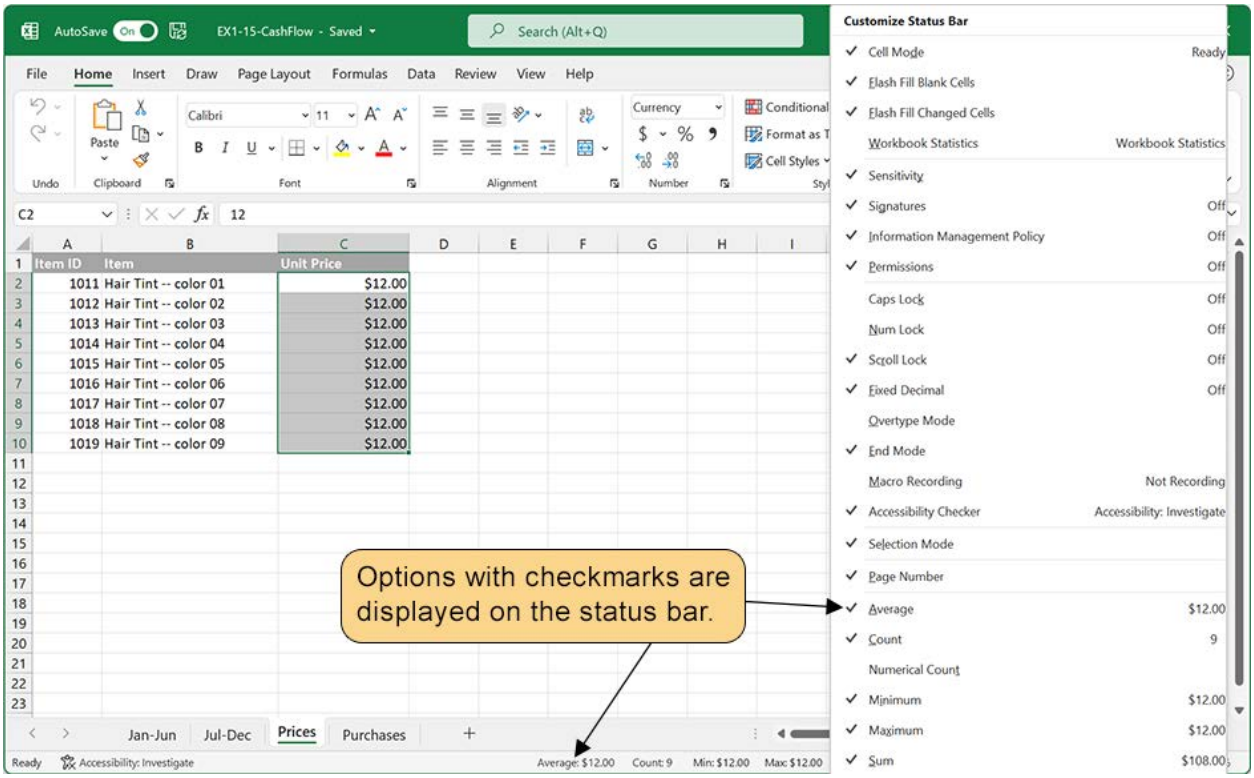



FIGURE EX 1.33

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-15-CashFlow** and try this skill on your own:

1. On the *Prices* worksheet, select cells **C2:C10** and observe the calculations displayed on the status bar. You should see the average, count, and sum of the selected cells.
2. Add the minimum and maximum values to the status bar.
3. Observe the changes, and then remove the minimum and maximum values from the status bar so it is back to its original state.
4. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.16 Changing the Zoom Level

If you are working with a large spreadsheet, you may find that you need to see more of the spreadsheet at one time or that you would like a closer look at a cell or group of cells. You can use the **zoom slider** in the lower right corner of the window to zoom in and out of a worksheet, changing the size of text and images on screen. As you move the slider, the zoom level displays the percentage the worksheet has been zoomed in or zoomed out. Zooming a worksheet affects only how the worksheet appears on-screen. It does not affect how the worksheet will print.

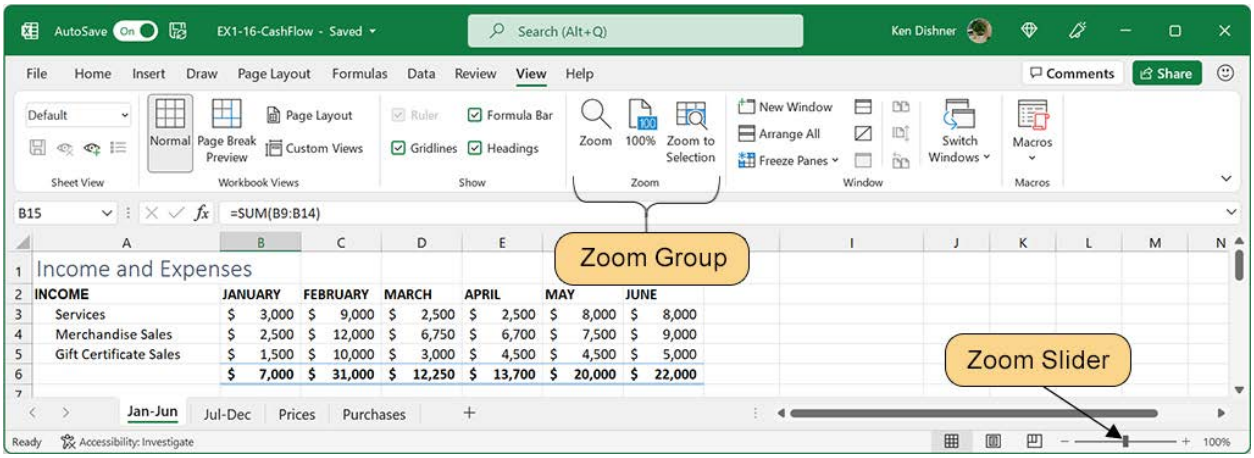



FIGURE EX 1.34

To zoom in on a worksheet, making the text and graphics appear larger:

- Click and drag the zoom slider to the right.
- Click the **Zoom In** button on the slider.

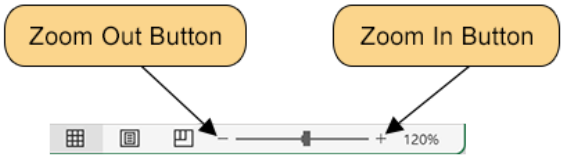



FIGURE EX 1.35

To zoom out of a worksheet, making the text and graphics appear smaller:

- Click and drag the zoom slider to the left.
- Click the **Zoom Out** button on the slider.

On the *View* tab, the *Zoom* group includes buttons for two of the most common zoom options:

- Click the **Zoom to Selection** button to zoom in as close as possible on the currently selected cell(s).
- Click the **100%** button to return the worksheet back to 100% of the normal size.

You can also change the zoom level through the *Zoom* dialog.

1. On the *View* tab, in the *Zoom* group, click the **Zoom**
2. In the *Zoom* dialog, click the radio button for the zoom option you want, and then click **OK**.

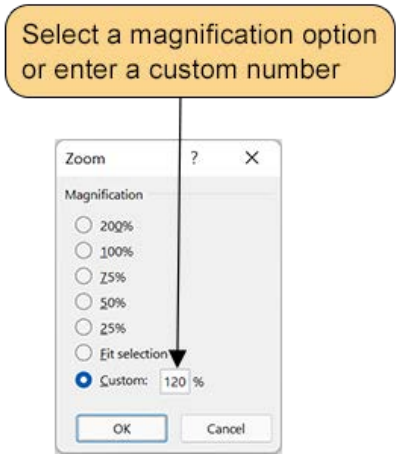



FIGURE EX 1.36

## tips & tricks

When you save a workbook, Excel saves the zoom setting. However, if you change the zoom level and then close the workbook without making any other changes, Excel will not warn you about saving your change. The next time you open the workbook, it will be back to the zoom level that was set at the time the workbook was last saved.

## another method

You can also open *Zoom* dialog by clicking the zoom level number that appears at the right side of the zoom slider.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-16-CashFlow** and try this skill on your own:

1. Change the zoom level to **110%**.
2. Change the zoom level back to **100%**.
3. Change the zoom level to **90%**.
4. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

from the perspective of . . .

## ACCOUNTING FIRM INTERN

My boss works on two 24" monitors. She always has her files set at 150% or higher because she has the room to spread the worksheet across two large monitors. I work on a laptop with a 15" screen. When I open her files, I can only see part of the worksheet until I set the zoom level back to 100%. It is harder to see details when the zoom level is set lower, but for me, it's more important to see the whole worksheet without having to scroll.

# Skill 1.17 Creating a New Workbook Using a Template

A **template** is a file with predefined settings that you can use as a starting point for your workbook. Using an Excel template makes creating a new workbook easy and results in a professional appearance. Many templates use advanced techniques that you may not have learned yet—but you can take advantage of them in a template where someone else has created the workbook framework for you. Templates are available for every imaginable task: from creating budgets to tracking exercise to calculating your grade point average.

To create a new workbook using a template:

1. Click the **File** tab to open Backstage view.
2. Click **New**. Excel may include a few templates that were copied to your computer when you installed the application. These templates are always available from the *New* page. Additional templates that you download are also displayed on the *New* page, so your screen may look different than the one in Figure EX 1.37.
3. Click a template picture to open the template preview including a brief description of the template.

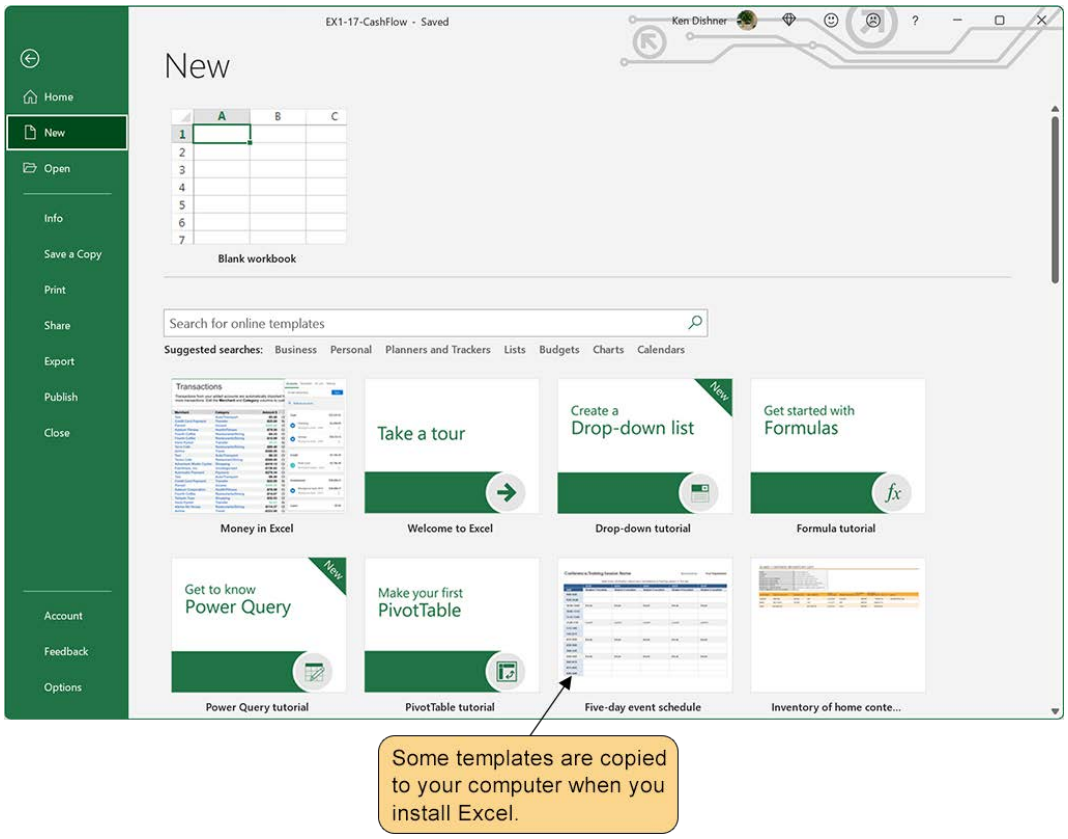



FIGURE EX 1.37

4. You can cycle through the template previews by clicking the arrows that appear on either side of the preview.
5. When you find the template you want to use, click the **Create** button.
6. A new workbook opens, prepopulated with all of the template elements and sample data. Work through the template, replacing the sample data with your own.
7. Don't forget to save the file.

You can search for additional workbook templates online. (You must have an active Internet connection.)

1. Near the top of the *New* page, in the *Search online templates* box, type a keyword or phrase that describes the template you want.
2. Click the **Start searching** button (the magnifying glass image at the end of the *Search online templates* box).
3. The search results display previews of the templates that match the keyword or phrase you entered.
4. When you find the template you want, click it to display the larger preview with detailed information about the template, and then click **Create**.

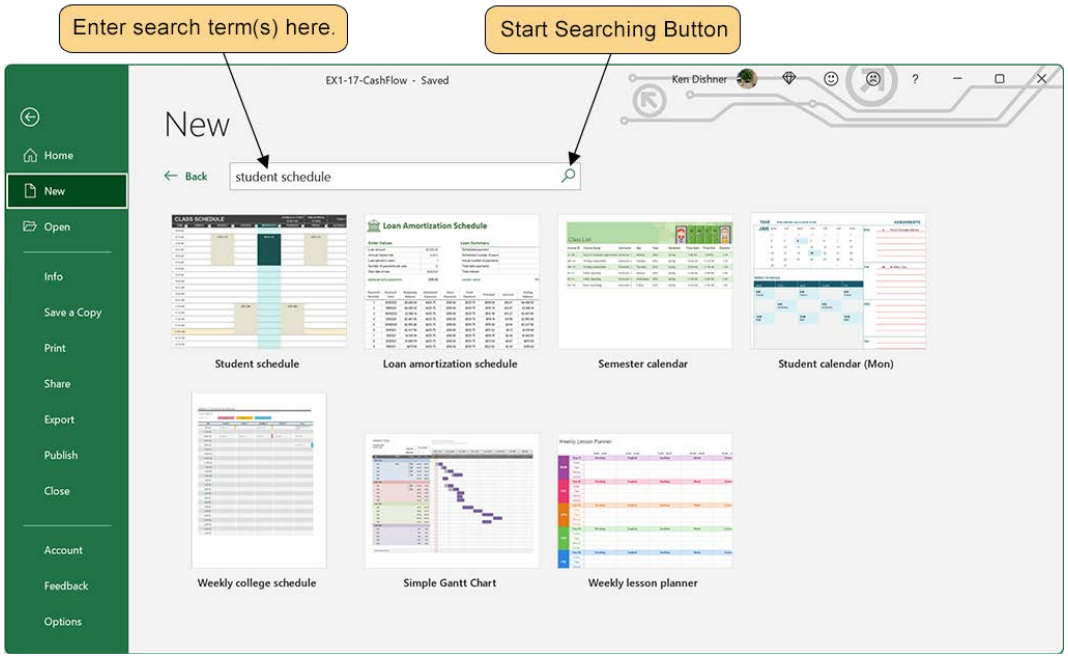



FIGURE EX 1.38

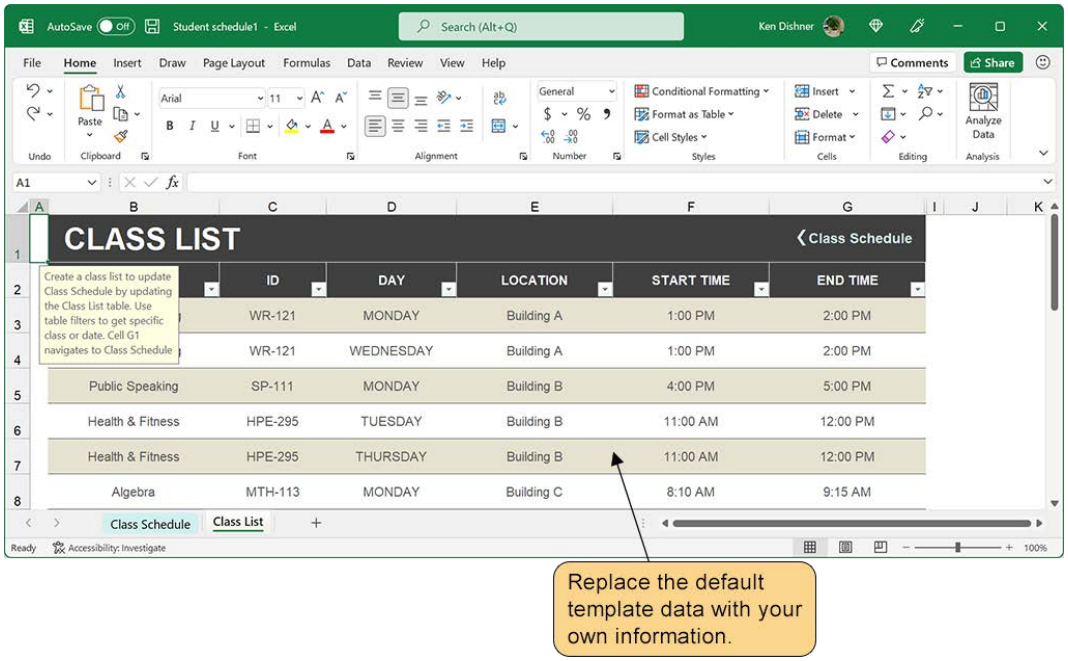



FIGURE EX 1.39

## tips & tricks

Many Excel templates have a special worksheet labeled Settings, Instructions, or something similar. Be sure to read all of the instructions before entering data.

## tell me more

The list of installed templates on the *New* page includes tutorials on how to use Excel. To use one of these tutorials:

1. Click the tutorial you want.
2. The preview opens with a description of the tutorial. Click the **Create** button to download the Excel tutorial file.
3. Follow the instructions on the first sheet to begin the tutorial. The tutorials are set up as a series of worksheets with **Next** and **Previous** buttons to move through the steps in the tutorial.
4. At any point, you can save the tutorial file to your computer to come back to it later or close it without saving if you are finished.

## another method

The *Home* page in Backstage view includes *New* section at the top. Your most recently used templates are also available from this page.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-17-CashFlow** and try this skill on your own:

1. Create a new file based on the **Student schedule** template. If this template does not appear on your *New* page, search for it using the *Search online templates* feature. You may find more than one template named Student schedule. Select one that appeals to you.
2. Create another new file by searching for a template based on the word **budget**. Use the **Simple monthly budget** template or another budget template that appeals to you.
3. If you will be moving on to the next skill in this chapter, leave the workbooks open to continue working. If not, save the files as directed by your instructor and close them.

from the perspective of . . .

## COLLEGE STUDENT

I thought Excel was only for business. It's not! I found some really useful templates—one for tracking my day-to-day expenses and another one to help me budget my expenses for the semester. And even though some of the templates look fancy and complicated, I find that I can use them easily by reading the instructions and taking a little bit of time to personalize the data with my own information.

# Skill 1.18 Arranging Workbooks

If you are working with multiple workbooks, you may want to arrange them so you can see them all at the same time. You can arrange workbooks so they are tiled, horizontal, vertical, or cascading windows.

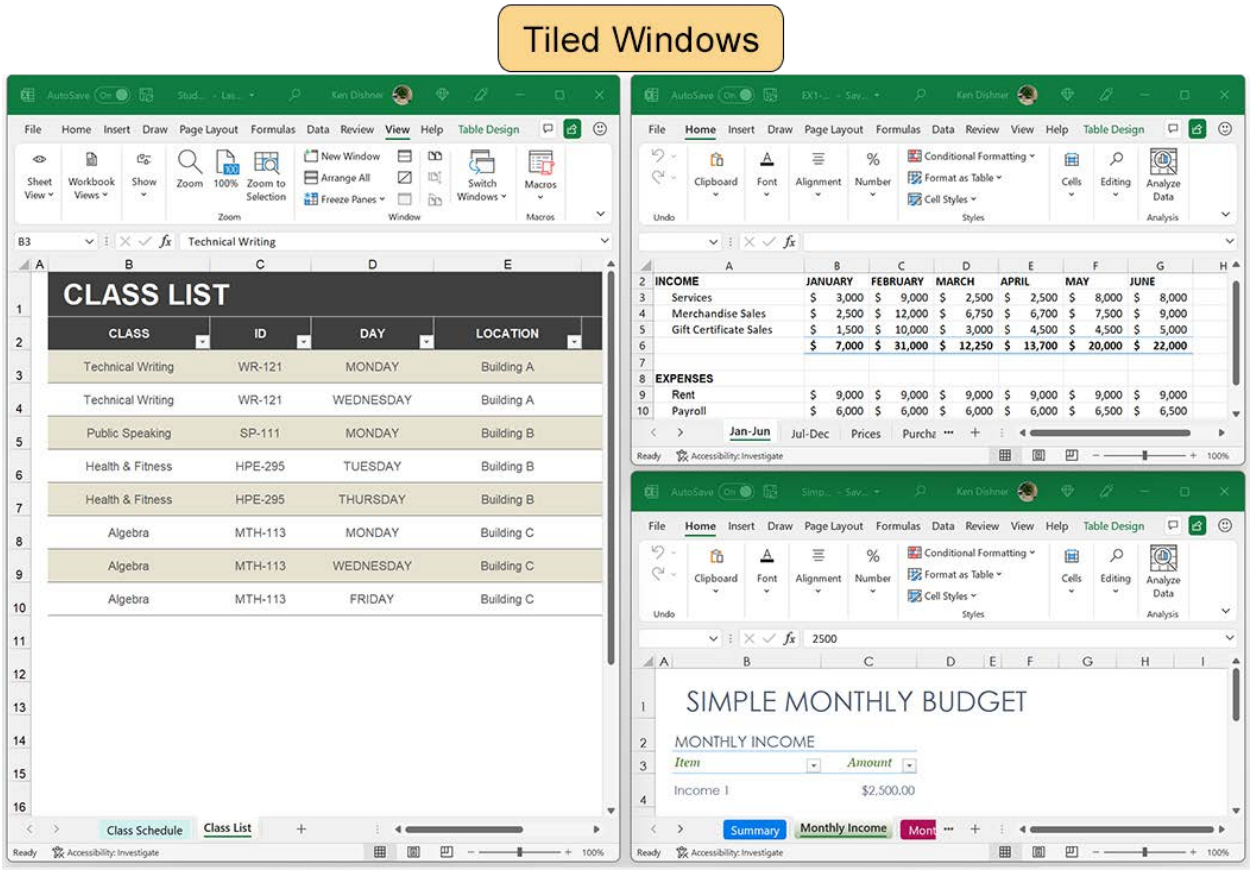



FIGURE EX 1.40

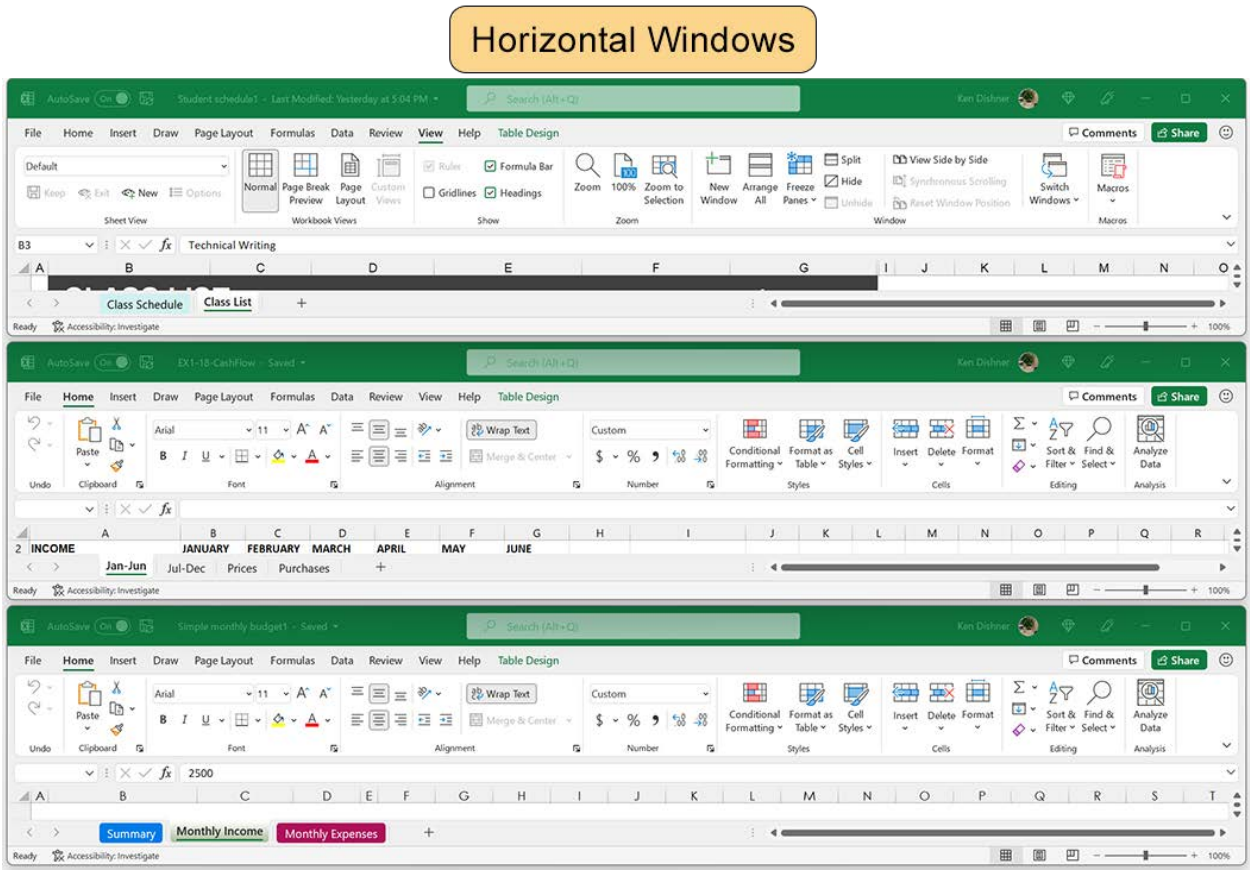



FIGURE EX 1.41

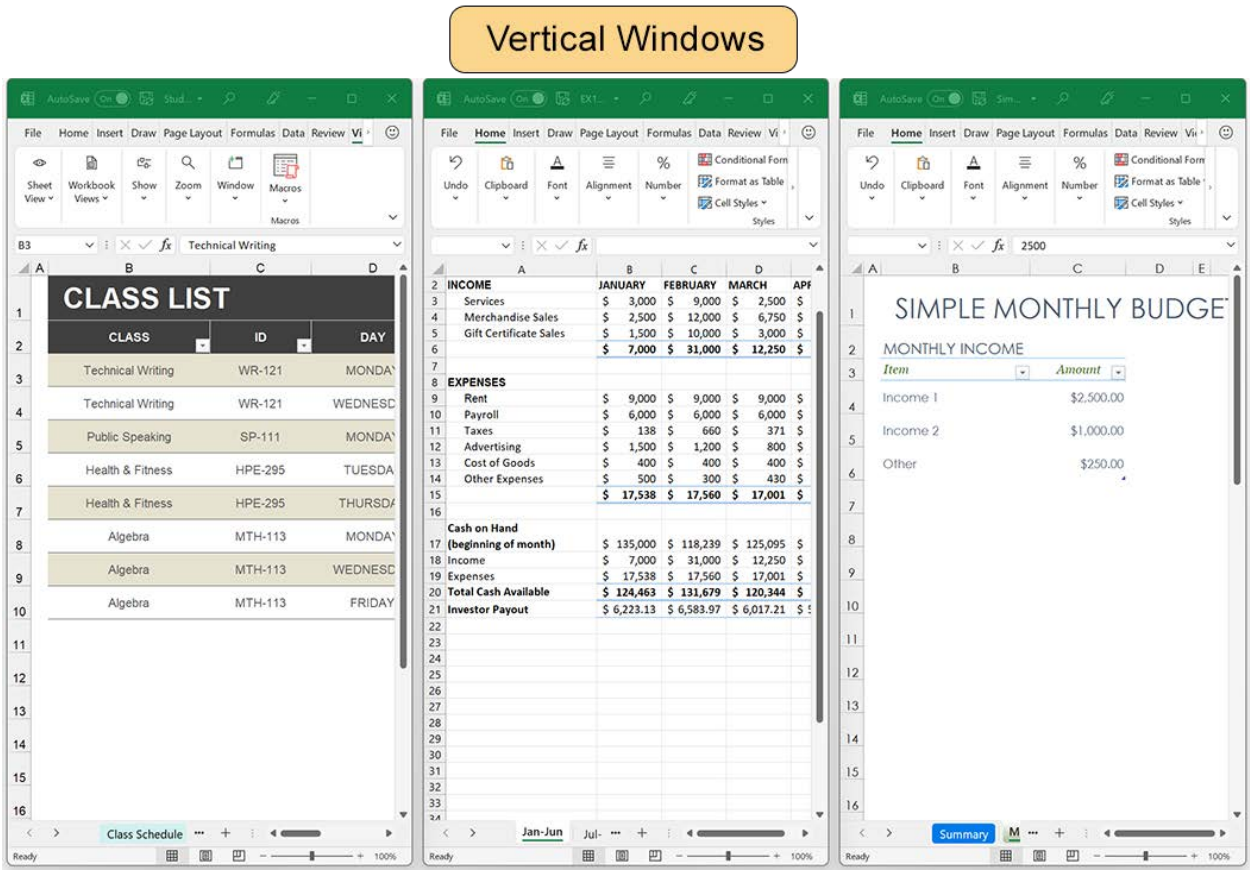



FIGURE EX 1.42

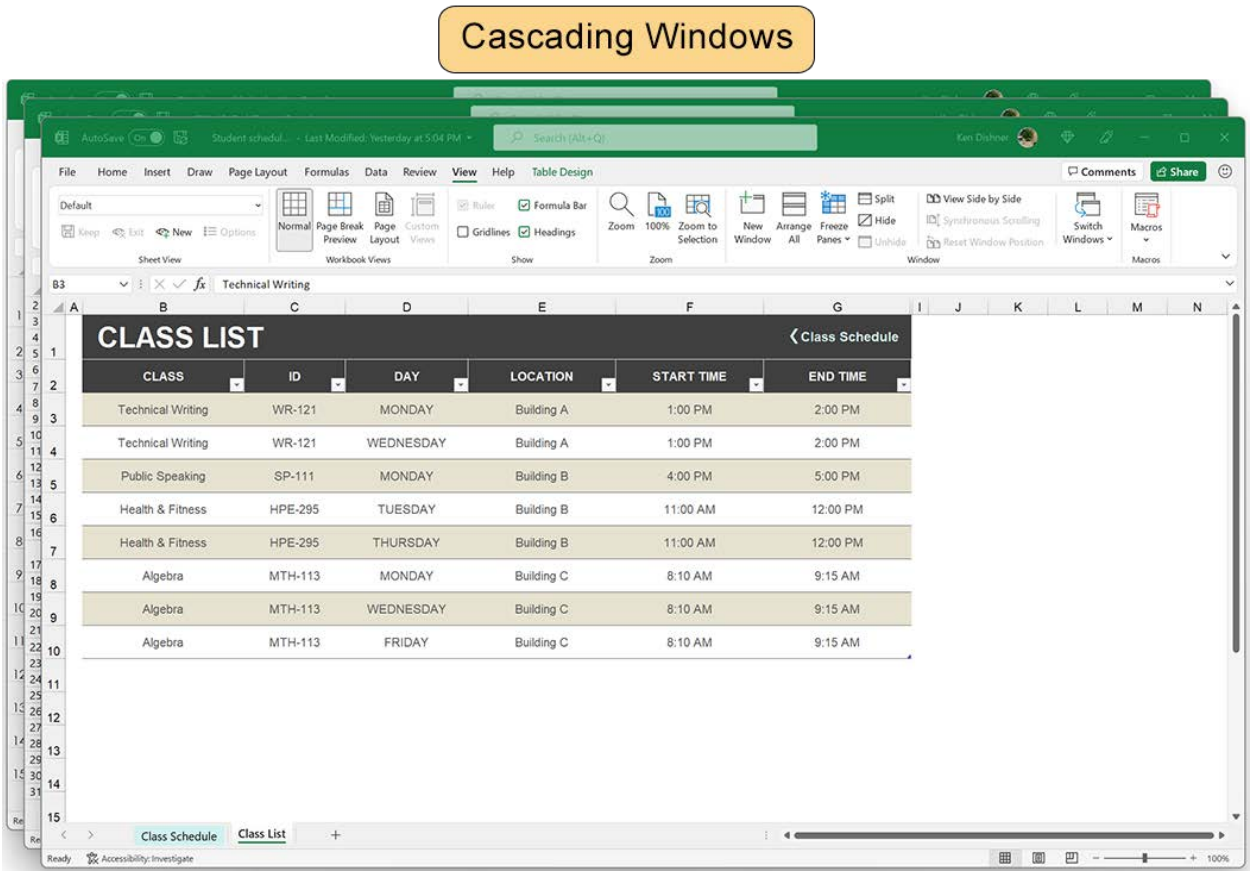



FIGURE EX 1.43

To change the arrangement of workbooks:

1. On the *View* tab, in the *Window* group, click the **Arrange All** button.
2. In the *Arrange Windows* dialog, select an arrangement option:
   - **Tiled**—places the windows in a grid pattern.
   - **Horizontal**—places the windows in a stack one on top of the other.
   - **Vertical**—places the windows in a row next to each other.
   - **Cascade**—places the windows in a staggered, overlapping, diagonal arrangement.
3. Click **OK**.

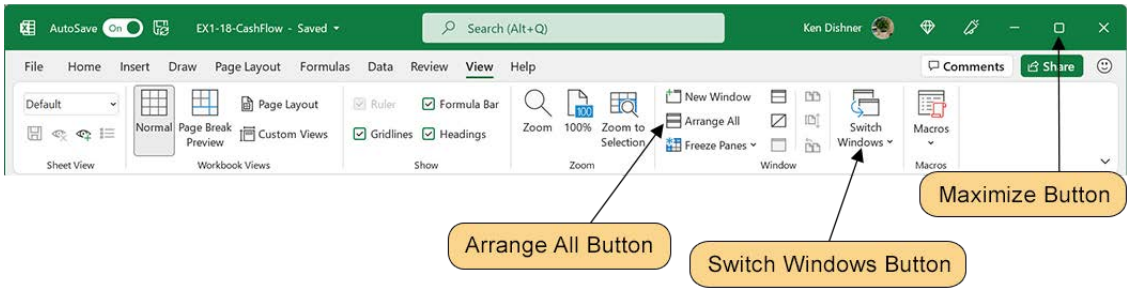



FIGURE EX 1.44

To switch between workbooks, you can:

- Click anywhere in the workbook you want to make active.
- On the *View* tab, in the *Window* group, click the **Switch Windows** button, then click the name of the workbook you want.

To undo the arrangement and put the workbooks back into separate windows, maximize any of the workbooks by clicking the **Maximize** button on the title bar.

## tell me more

If you have two workbooks with similar data, you may want to compare their data row by row. Excel's *Compare Side by Side* feature allows you to compare two workbooks at the same time. When you compare workbooks, the *Synchronous Scrolling* feature is on by default. This feature allows you to scroll both workbooks at once. If you scroll the active workbook, the other workbook will scroll at the same time, allowing you to carefully compare data row by row.

1. Open the workbooks you want to compare.
2. On the *View* tab, in the *Window* group, click the **View Side by Side** button.
3. The two workbooks are displayed one on top of the other.
4. Scroll the active window to scroll both workbooks at once.
5. Click the **View Side by Side** button again to restore the windows to their previous positions.

## let me try Live!

If you do not have the data files from the previous skill open, open the student data file **EX1-18-CashFlow** and a few other Excel files to try this skill on your own:

1. Arrange the Excel windows so they are in a staggered arrangement.
2. Arrange the Excel windows so they are in a row next to each other.
3. If you will be moving on to the next skill in this chapter, close all of the workbooks except the *CashFlow* workbook. If not, save the files as directed by your instructor and close them.

# Skill 1.19 Checking Spelling

In Excel, the *Spelling* command analyzes the current worksheet for spelling errors. The *Spelling* dialog cycles through each spelling error, allowing you to make decisions about how to handle each one.

To check a worksheet for spelling errors:

1. On the *Review* tab, in the *Proofing* group, click the **Spelling** button or use the keyboard shortcut F7.
2. The first spelling error appears in the *Spelling* dialog.
3. Review the spelling suggestion and then select an action:
   - Click **Ignore Once** to make no changes to this instance of the word.
   - Click **Ignore All** to make no changes to all instances of the word.
   - Click **Add to Dictionary** to make no changes to this instance of the word and add it to the spelling checker dictionary, so future uses of this word will not show up as misspellings.
   - Click the correct spelling in the *Suggestions* list, and click **Change** to correct just this instance of the misspelling in your worksheet.
   - Click the correct spelling in the *Suggestions* list, and click **Change All** to correct all instances of the misspelling in your worksheet.

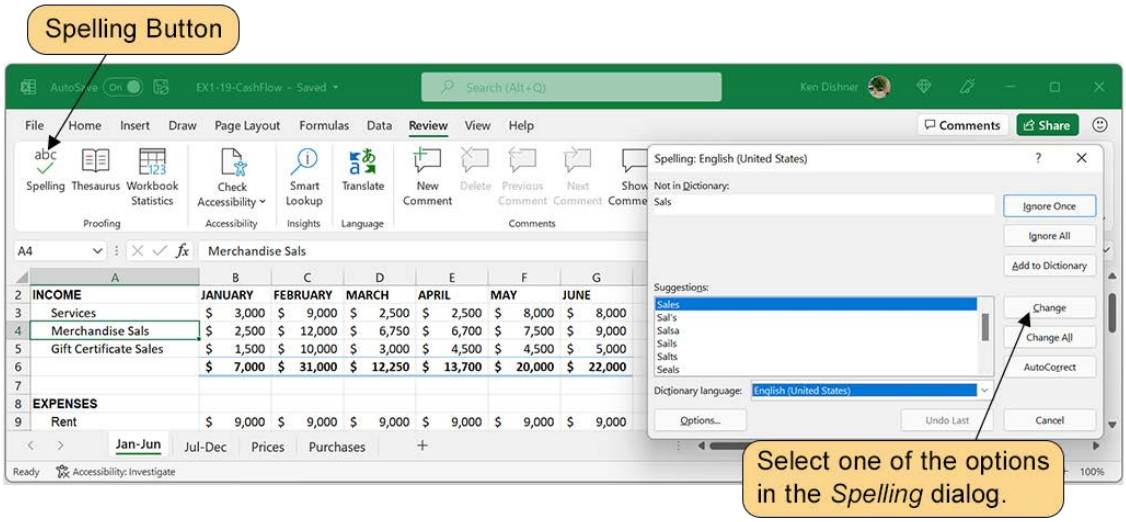



FIGURE EX 1.45

4. After you select an action, the spelling checker automatically advances to the next suspected spelling error.
5. When the spelling checker finds no more errors, it displays a message telling you the check is complete. Click **OK** to close the dialog and return to your worksheet.

## tips & tricks

Whether or not you use the Spelling tool, you should always proofread your files. Spelling checkers are not infallible, especially if you misuse a word yet spell it correctly—for instance, writing "bored" instead of "board."

If you misspell a word often, the next time the spelling checker catches the misspelling, use this trick: Click the correct spelling in the *Suggestions* list and then click the **AutoCorrect** button. Now, when you type the misspelled version of the word, it will be corrected automatically as you type.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-19-CashFlow** and try this skill on your own:

1. Spell check the *Jan-Jun* worksheet and correct any errors you find.
2. If you will be moving on to the next skill in this chapter, leave the workbook open to continue working. If not, save the file as directed by your instructor and close it.

# Skill 1.20 Previewing and Printing a Worksheet

In Excel, all the print settings are combined in a single page along with a preview of how the printed file will look. As you change print settings, the preview updates. To preview and print the current worksheet:

1. Click the **File** tab to open Backstage view.
2. Click **Print**.
3. At the right side of the page is a preview of how the printed file will look. Beneath the preview there is a page count. If there are multiple pages, use the *Next* and *Previous* arrows to preview all the pages in the file. You can also use the scroll bar to the right to scroll through the preview pages.
4. Set the number of copies to print by changing the number in the *Copies* box.
5. Click the **Print** button to send the file to your default printer.

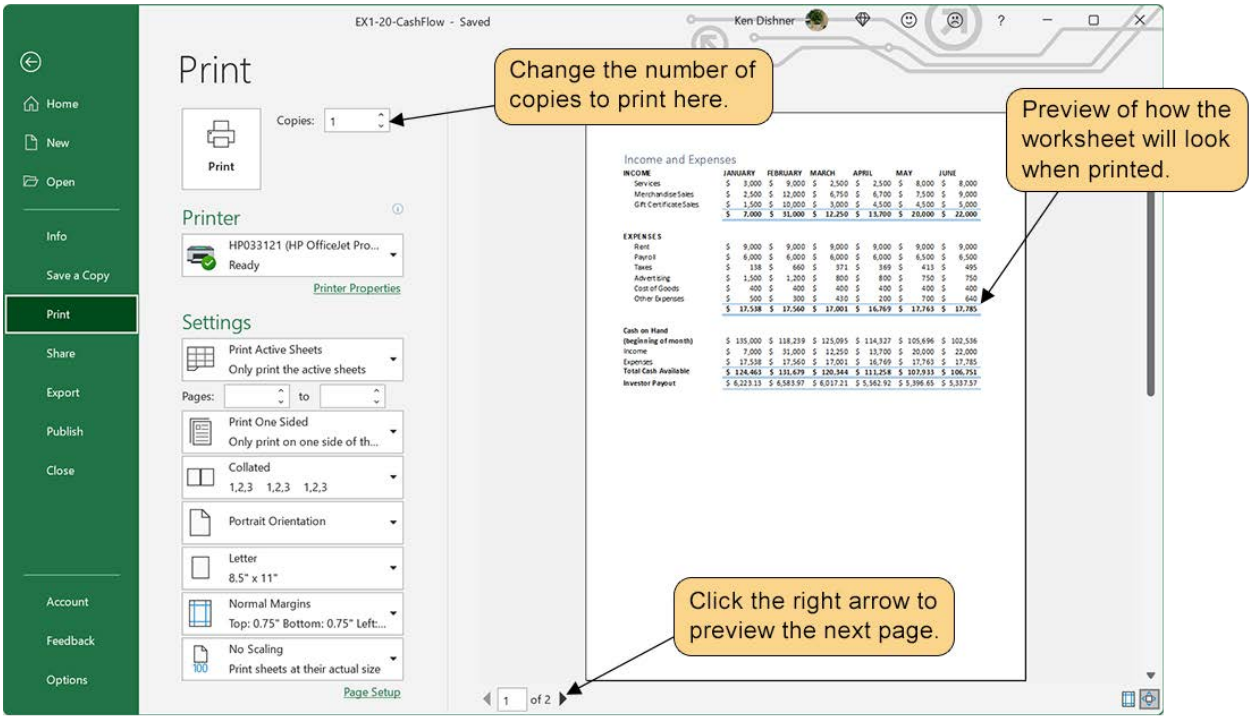



FIGURE EX 1.46

## another method

To open the *Print* page in Backstage view, you can use the keyboard shortcut Ctrl + P.

## let me try Live!

If you do not have the data file from the previous skill open, open the student data file **EX1-20-CashFlow** and try this skill on your own:

1. Preview how the worksheet will look when printed.
2. If you can, print the worksheet and compare the printed page to the preview.
3. Save the file as directed by your instructor and close it.

# key terms

Workbook
Worksheet
Row
Column
Cell
Cell address
Cell range
Formula bar
Name box
Status bar
Vertical scroll bar
Horizontal scroll bar
Row selector
Column selector
Protected View
Message Bar
Trusted Document
Ready mode
Edit mode
General number format
Accounting Number Format
Percent Style format
Comma Style format
Number format
Currency format
Short Date format
Long Date format
AutoFill
Fill Handle tool
Data series
Chart
Data points
Data markers
Data series (chart)
Y axis
X axis
Plot area
Chart area
Chart title
Legend
Formula
Order of Operations (precedence)
Cell reference
Relative reference
Absolute reference
Mixed reference
Function
Argument
AutoSum
Quick Analysis tool
Zoom slider
Template
Tiled window arrangement
Horizontal window arrangement
Vertical window arrangement
Cascade window arrangement

# concept review

1. How many worksheets does a new Excel workbook have?
   a. None
   b. one
   c. two
   d. three
2. The cell D3 refers to the cell at _____.
   a. the intersection of row D and column 3
   b. the first cell on the D3 worksheet
   c. the intersection of column D and row 3
   d. none of the above
3. Which of these dates uses the Long Date format?
   a. Saturday, January 1, 2022
   b. 1/1/2022
   c. January 1, 2022
   d. 01/01/2022
4. Data markers are graphic representations of the values of data points in a chart.
   a. true
   b. false
5. Formulas begin with which character?
   a. $
   b. @
   c. ^
   d. =
6. Which of these cell references is an absolute reference?
   a. B8
   b. B$8
   c. $B$8
   d. none of the above
7. AutoSum is located _____.
   a. on the *Home* tab, in the *Formulas* group
   b. on the *Home* tab, in the *Editing* group
   c. on the *Insert* tab, in the *Formulas* group
   d. on the *Insert* tab, in the *Tables* group

8. The zoom slider is located _____.
    a. on the Ribbon
    b. on the *View* tab, in the *Zoom* group
    c. in the *Zoom* dialog
    d. at the lower right corner of the status bar
9. The keyboard shortcut to begin the spelling checker is _____.
    a. F5
    b. F6
    c. F7
    d. F8
10. Which of these tasks can you perform in Backstage view?
    a. Enable Editing when a workbook is in Protected View.
    b. Preview how a workbook will look when printed.
    c. Create a new workbook from a template.
    d. All of the above.

projects

Data files for projects can be found by logging into your SIMnet account and going to the Library section.

# skill review 1.1

The workbook for this project generates client bills from staff hours in multiple worksheets. In this project, you will complete the worksheet for staff member Jarvis to calculate the daily bill, the total billable hours per week, and the total weekly bill. The worksheet for staff member Stevens has been completed. You may use it for reference as necessary.

Skills needed to complete this project:

- Working in Protected View (Skill 1.3)
- Navigating a Workbook (Skill 1.2)
- Exploring Charts (Skill 1.8)
- Entering and Editing Text and Numbers in Cells (Skill 1.4)
- Applying Number Formats (Skill 1.5)
- Entering Dates and Applying Date Formats (Skill 1.6)
- Inserting Data Using AutoFill (Skill 1.7)
- Understanding Absolute and Relative References (Skill 1.11)
- Entering Simple Formulas (Skill 1.10)
- Calculating Totals with the Quick Analysis Tool (Skill 1.14)
- Using the Recommended Charts Feature (Skill 1.9)
- Previewing and Printing a Worksheet (Skill 1.20)

**IMPORTANT**: If you are a Canadian user, be sure to verify that your browser and Microsoft Office use the same country settings. See here for a Help topic on how to change your settings.

1. Open the start file **EX2021-SkillReview-1-1** and resave the file as:
   **`[your initials]EX-SkillReview-1-1`**
2. If the workbook opens in Protected View, click the **Enable Editing** button in the Message Bar at the top of the workbook so you can modify the workbook.
3. Explore the workbook. If you accidentally make changes while exploring, press Ctrl + Z to undo the change.
   a. Click the worksheet tab labeled *Stevens Hours*.
   b. If necessary, use the vertical scroll bar to scroll down so you can see both weeks of billable hours. (If necessary, use the vertical scroll bar again to return to the top of the worksheet.)

c. Click cell **B2** (the cell displaying the staff member's last name, Stevens). This is the cell at the intersection of column B and row 2.
   i. Note that the column B and row 2 selector boxes highlight.
   ii. Note that the status bar displays Ready, indicating that you are in Ready mode.
   iii. On the *Home* tab, in the *Number* group, look at the *Number Format* box at the top of the group. Note that the format for this cell is *General*.
   iv. Double-click cell **B2** to switch to Edit mode. Note that the status bar now displays *Edit*, and the blinking cursor appears within the cell. If you needed to, you could edit the text directly in the cell.

d. Press Esc to exit Edit mode and return to Ready mode.

e. Press Enter twice to move to cell **B4** (the cell displaying the staff member's billable rate). This cell is formatted with the Accounting Number Format number format.
   i. Look in the *Number Format* box and note that the format for this cell is *Accounting*.
   ii. On the *Home* tab, in the *Styles* group, look in the *Cell Styles* gallery, and note that the cell style *Currency* is highlighted. (If the *Cell Styles* gallery is collapsed on your Ribbon, click the **Cell Styles** button to display it.)

f. Click cell **B8** (the cell displaying the number of hours for Monday, August 1). This cell is formatted with the Comma cell style.
   i. Look in the *Number Format* box and note that the format for this cell is also *Accounting*.
   ii. On the *Home* tab, in the *Styles* group, look in the *Cell Styles* gallery, and note that the cell style *Comma* is highlighted for this cell. (If the *Cell Styles* gallery is collapsed on your Ribbon, click the **Cell Styles** button to display it.)
   iii. Note the style differences between cell **B4** (Accounting Number Format, Currency style) and cell **B8** (Accounting Number Format, Comma style).

g. Click cell **B7** (the cell displaying the date 8/1/2022). This cell is formatted using the Short Date format. Note that the *Number Format* box displays *Date*.

h. Double-click cell **B14**.
   i. Note that the status bar now displays *Edit*, indicating that you are in Edit mode.
   ii. This cell contains a formula to calculate the daily bill for Monday, August 1: **=B12*$B$4**
   iii. Note that cells B12 and B4 are highlighted with colors matching the cell references in the formula.
   iv. Note that the reference to cell B4 is an absolute reference ($B$4).

i. Press Esc to exit Edit mode.

j. Double-click cell **B12**.
   i. Note that once again the status bar displays *Edit*, indicating that you are in Edit mode.
   ii. This cell contains a formula using the SUM function to calculate the total billable hours for Monday, August 1: **=SUM(B8:B11)**
   iii. In this case, the SUM function uses a single argument **B8:B11** to indicate the range of cells to total.
   iv. Note that the cell range **B8:B11** is highlighted with the color matching the argument in the SUM function formula.
   v. Note that the reference to the cell range **B8:B11** uses relative references.

k. Press Esc to exit Edit mode.

l. Press Tab to move to cell **C12**. Look in the formula bar and note that this cell contains a similar formula to the one in cell **B12: =SUM(C8:C11)**

m. Press → to move through cells **D12 through H12**. Note the formula in the formula bar for each cell.

n. Did you notice that the cell references in the formulas in cells **C12 through H12** all use relative references?

4. The *Stevens Hours* worksheet contains a stacked column chart. Review the chart so you can recreate it on the *Jarvis Hours* worksheet.
   a. The stacked column chart to the right of the hours for the week of August 1 represents the hours worked for each client each day.
   b. The column height for each day represents the total hours worked. Each column is divided into segments representing the hours worked for each client.
   c. The number of hours worked is represented on the y axis. The dates are represented along the x axis.
   d. The chart title has been changed to: **Week of 8/1/22**
5. Now you are ready to complete the worksheet for Brian Jarvis. Navigate to the *Jarvis Hours* worksheet by clicking the **Jarvis Hours** worksheet tab.
6. The staff member's last name is spelled incorrectly. Navigate to cell **B2** and edit the text so the last name is spelled correctly (Jarvis- with an *a* instead of an *e*). Use Edit mode.
   a. Double-click cell **B2**.
   b. Edit the text to: `Jarvis`
   c. Press Enter to accept your changes.
7. The billable rate amount is missing. Navigate to cell **B4** and enter the rate. Use Ready mode.
   a. Click cell **B4**.
   b. Type: `180`
   c. Press Enter.
8. Modify the billable rate to use the Accounting Number Format.
   a. Press the ↑ to return to cell **B4**.
   b. On the *Home* tab, in the *Number* group, click the **Accounting Number Format** button.
9. The dates are missing from the timesheet. Enter the first date, August 1, 2022.
   a. Click cell **B7**.
   b. Type: `8/1/2022`
   c. Press Enter.

10. Use Autofill to complete the dates in the timesheet.
    a. Click cell **B7**.
    b. Click the **Fill Handle**, and drag to cell **H7**. Release the mouse button.
11. Change the date format to the 8/1/2022 format.
    a. The cell range **B7:H7** should still be selected. If not, click cell **B7**, press and hold Shift, click cell **H7**, and then release the Shift key.
    b. On the *Home* tab, in the *Number* group, expand the *Number Format* list, and click **Short Date**.
12. Use the Quick Analysis tool to enter total hours for each day.
    a. Select cells **B8:H11**. Click cell **B8**, hold down the left mouse button, and drag the mouse to cell **H11**. Release the mouse button. The cell range B8 through H11 should now appear selected.
    b. The Quick Analysis tool button should appear near the lower right corner of the selected cell range. (If the Quick Analysis tool button is not visible, move your mouse cursor over the selected cell range again, without clicking. This action should make the button appear.)
    c. Click the **Quick Analysis tool** button, and then click **Totals**.
    d. Click **Sum** (the first option).
13. Format the hours billed section to use the Comma Style number format. Be sure to include the total row.
    a. Select cells **B8:H12**. Try another method: Click cell **B8**, press and hold Shift, click cell **H12**, and release the Shift key.
    b. On the *Home* tab, in the *Number* group, click the **Comma Style** button.
14. Enter a formula in cell **B14** to calculate the daily bill for Monday, August 5. The formula should calculate the total billable hours for the day (cell B12) times the billable rate (B4).
    a. Click cell **B14**.
    b. Type: **=**
    c. Click cell **B12**.
    d. Type: *****
    e. Click cell **B4**.
    f. Press F4 to change the cell reference **B4** to an absolute reference **($B$4)**.
    g. Press Enter.
    h. The formula should look like this: **=B12*$B$4**

15. Use AutoFill to copy the formula to the remaining days in the timesheet.
    a. Click cell **B14** again.
    b. Click the **AutoFill handle**. Hold down the left mouse button and drag to cell **H14**. Release the mouse button.
    c. The formulas in cells B14 through H14 should look like this.

| | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 14 | =B12*$B$4 | =C12*$B$4 | =D12*$B$4 | =E12*$B$4 | =F12*$B$4 | =G12*$B$4 | =H12*$B$4 |

    Notice that when the AutoFill copied the formula, it updated the relative reference (B12) to reflect the new column position, but it did not change the absolute reference ($B$4).

16. Now you can calculate the bill total for the week by summing the daily bill amounts. Enter a formula using the SUM function with the cell range **B14:H14** as the argument.
    a. Click cell **B15**.
    b. Type: `=SUM(B14:H14)`
    c. Press Enter.
17. Use the Recommended Charts feature to insert a **stacked column chart** representing hours worked for each day for the week of August 1.
    a. Select cells **A7:H11**. Click cell **A7**, hold down the left mouse button, and drag the mouse to cell **H11**. Release the mouse button. The cell range A7 through H11 should now appear selected.
    b. The Quick Analysis tool button should appear near the lower right corner of the selected cell range. (If the Quick Analysis tool button is not visible, move your mouse cursor over the selected cell range again, without clicking. This action should make the button appear.)
    c. Click the **Quick Analysis tool** button, and then click **Charts**.
    d. Click **Stacked Column** to insert a stacked column chart.
18. Change the chart title.
    a. Click the **Chart Title** placeholder once to select it.
    b. Type: `Week of 8/1/2022`
    c. Press Enter.
19. Preview how the worksheet will look when printed.
    a. Click cell **A1** to deselect the chart.
    b. Click the **File** tab to open Backstage view.
    c. Click **Print** to display the print preview.
    d. Click the left arrow to close the Backstage view.
20. Save and close the workbook.

projects

Data files for projects can be found by logging into your SIMnet account and going to the Library section.

# skill review 1.2

In this project you will create a new workbook to track the cost of books for your college classes. For each book, you will enter the purchase price, the potential sell-back price, and the cost difference. You will calculate totals using AutoSum. You will then create a new workbook from a template, and practice changing the zoom level and arranging the workbooks.

Skills needed to complete this project:

- Entering and Editing Text and Numbers in Cells (Skill 1.4)
- Navigating a Workbook (Skill 1.2)
- Inserting Data Using AutoFill (Skill 1.7)
- Applying Number Formats (Skill 1.5)
- Using the Status Bar (Skill 1.15)
- Using AutoSum to Insert a SUM Function (Skill 1.13)
- Entering Simple Formulas (Skill 1.10)
- Using the Recommended Charts Feature (Skill 1.9)
- Exploring Charts (Skill 1.8)
- Creating a New Workbook Using a Template (Skill 1.17)
- Checking Spelling (Skill 1.19)
- Arranging Workbooks (Skill 1.18)
- Changing the Zoom Level (Skill 1.16)

1. Open the start file **EX2021-SkillReview-1-2** and resave the file as:
   **`[your initials]EX-SkillReview-1-2`**
2. If the workbook opens in Protected View, click the **Enable Editing** button in the Message Bar at the top of the workbook so you can modify it.
3. The new workbook opens with one sheet (***Sheet1***). Cell *A1* is selected.
4. In cell **A1**, type the title for the worksheet: **`Textbooks`**

5. Enter data in the worksheet as follows:

| | A | B | C | D |
|---|---|---|---|---|
| 3 | Book | Cost | Value | Difference |
| 4 | Book1 | 95 | 55 | |
| 5 | Book2 | 110 | 90 | |
| 6 | Book3 | 285 | 135 | |
| 7 | Book4 | 100.95 | 44.50 | |

6. Use AutoFill to add two additional books to the list.
   a. Click cell **A4**, hold down the left mouse button and drag the mouse to cell **A7**. Release the mouse button. The cell range A4 through A7 should now appear selected.
   b. Click the **Fill Handle** (located at the lower right corner of the selected cell range).
   c. Drag down to cell **A9**, and release the mouse button.
   d. Excel adds Book5 and Book6 to the list.
7. Book5 cost $135.00 and can be sold for $65.00. Book6 cost $195.00 and can be sold for $125.00. Add these data to the worksheet.
   a. Click cell **B8** and type: **135**
   b. Press Tab and type: **65**
   c. Click cell **B9** and type: **195**
   d. Press Tab and type: **125**
   e. Press Enter.
8. Modify the **status bar** to display the minimum value.
   a. Right-click anywhere on the **status bar**.
   b. Click **Minimum** to add a checkmark. *Hint:* You may need to click the arrow at the bottom of the status bar menu to scroll through the list.
   c. Click anywhere to dismiss the menu.
9. Use the status bar to check the total value of the books and the minimum value.
   a. Click cell **C4**. Press and hold Shift and click cell **C9**. Release the Shift key.
   b. Look at the status bar and find the *Sum* value (**514.50**).
   c. Look at the status bar and find the *Min* value (**44.50**).

10. Use AutoSum to calculate total cost and total value. The totals should be placed in cells **B10** and **C10**.
    a. Click cell **A10** and type: `Total`
    b. Press Tab.
    c. Cell **B10** should be selected. Press and hold Shift and click cell **C10**. Release the Shift key.
    d. On the *Home* tab, in the *Editing* group, click the **AutoSum** button.
11. Change the number format for the cost and value numbers to the Accounting Number Format.
    a. Click cell **B4**. Press and hold Shift. Click cell **C10**. Release Shift.
    b. On the *Home* tab, in the *Number* group, click the **Accounting Number Format** button.
12. Enter a formula in cell **D4** to calculate the difference between the cost and the value for Book1. The formula will use only relative references because in the next step, you will use AutoFill to copy the formula down the column.
    a. Click cell **D4**.
    b. Type: **=**
    c. Click cell **B4**.
    d. Type: **-**
    e. Click cell **C4**.
    f. Press Enter.
13. Use AutoFill to copy the formula to calculate the difference for books 2 through 6 and the total.
    a. Click cell **D4**.
    b. Click the **AutoFill handle**. Hold down the left mouse button and drag to cell **D10**. Release the mouse button.
14. Use the Quick Analysis tool to insert a pie chart representing the cost of books.
    a. Select cells **A3:B9**. Click cell **A3**, hold down the left mouse button, and drag the mouse to cell **B9**. Release the mouse button. The cell range A3 through B9 should now appear selected.
    b. The Quick Analysis tool button should appear near the lower right corner of the selected cell range. (If the Quick Analysis tool button is not visible, move your mouse cursor over the selected cell range again, without clicking. This action should make the button appear.)
    c. Click the **Quick Analysis tool** button, and then click **Charts**.
    d. Click **Pie** to insert a pie chart.
    e. Observe how each book is assigned a color in the chart legend.
    f. The size of each pie piece represents the cost of each book relative to the total cost of all the books. Book 3 is the most expensive book and is represented by the largest piece of the pie.
15. Change the chart title.
    a. Click the **Cost** chart title once to select it.
    b. Type: `Comparative Cost of Books`
    c. Press Enter.
16. Save the workbook. Do not close it or exit Excel.

17. Create a new file from one of the templates called *Personal Monthly Budget*. **NOTE**: If you are unable to find a *Personal Monthly Budget* template or are unable to complete this step due to your school's computer lab restrictions, download the template from the *Resources* link. Open the template provided and move on to **step 18**.
    a. Click the **File** tab to open Backstage view.
    b. Click **New**.
    c. Open a new file based on one of the *Personal Monthly Budget* templates. (This step may require an active Internet connection.)
        i. A *Personal Monthly Budget* template may appear in the list of templates automatically. If it does not, you will need to search for one. In the *Search online templates* box, type: `personal monthly budget`
        ii. Click one of the template previews.
        iii. Click **Create**.
18. The workbook based on the *Personal Monthly Budget* template that you selected will open. These templates are complex workbooks using many advanced techniques. The good news is that you don't have to understand how this workbook was created in order to use it.
    a. Click the **Personal Monthly Budget** worksheet tab to begin working.
    b. Scroll through the worksheet to review all the budget income and expenses. Edit names and values to reflect your personal budget.
    c. If you think you might like to come back to this workbook later for your personal use, this is a good point to save it. Be sure not to close the file. Use the file name: [Your Initials]Personal Monthly Budget
19. You should still have two workbooks open: the textbooks workbook from the beginning of the project and the *Personal Monthly Budget* workbook based on the template. Arrange the workbooks so you can see both at the same time.
    a. On the *View* tab, in the *Window* group, click the **Arrange All** button.
    b. In the *Arrange Windows* dialog, click the **Vertical** radio button. Click **OK**.
20. The *Personal Monthly Budget* workbook should be active. If not, click the title bar for that window. Review the *Personal Monthly Budget* sheet and change the zoom level to 50% so you can see more of the data at once.
    a. If necessary, click the **Personal Monthly Budget** tab.
    b. On the *View* tab, in the *Zoom* group, click the **Zoom** button.
    c. In the *Zoom* dialog, click the **50%** radio button. Click **OK**.
21. Close both workbooks. If you made changes to the *Personal Monthly Budget* workbook and you plan to continue using it, be sure to save the changes.

projects

Data files for projects can be found by logging into your SIMnet account and going to the Library section.

# challenge yourself 1.3

In this project, you will complete a timesheet for Brian Jarvis, similar to the one you worked on in Skill Review 1.1. You will need to enter and format missing dates, correct a data entry mistake, apply number formatting, and enter formulas to calculate the total billable hours per day, the daily total for each day, and the bill total for the week.

Skills needed to complete this project:

- Working in Protected View (Skill 1.3)
- Navigating a Workbook (Skill 1.2)
- Entering and Editing Text and Numbers in Cells (Skill 1.4)
- Inserting Data Using AutoFill (Skill 1.7)
- Entering Dates and Applying Date Formats (Skill 1.6)
- Calculating Totals with the Quick Analysis Tool (Skill 1.14)
- Applying Number Formats (Skill 1.5)
- Understanding Absolute and Relative References (Skill 1.11)
- Entering Simple Formulas (Skill 1.10)
- Using the Recommended Charts Feature (Skill 1.9)
- Exploring Charts (Skill 1.8)
- Previewing and Printing a Worksheet (Skill 1.20)

**IMPORTANT**: If you are a Canadian user, be sure to verify that your browser and Microsoft Office use the same country settings. See here for a Help topic on how to change your settings.

1. Open the start file **EX2021-ChallengeYourself-1-3** and resave the file as: **`[your initials]EX-ChallengeYourself-1-3`**
2. If the workbook opens in Protected View, enable editing so you can make changes to the workbook.
3. If necessary, scroll to the bottom of the worksheet so you can see the empty timesheet beginning on row 17.
4. The dates are missing from the timesheet. Enter the date **`8/1/2022`** in cell **B18**.
5. Use AutoFill to complete the dates in cells **C18:H18**.
6. Change the date format for **B18:H18** to the date format similar to **14-Mar**.
7. The hours reported for the Proctor client on Friday (cell F22) are incorrect. Change the number in cell **F22** to: **`5`**
8. Use the Quick Analysis tool to enter total hours for each day. Use the cell range **B19:H22**. The daily totals should be inserted into the range **B23:H23**.

9. Format the hours billed section (cells **B19:H23**) to use the Comma Style number format. Be sure to include the total row.
10. Enter a formula in cell **B25** to calculate the daily bill for Monday, August 1. The formula should calculate the total billable hours for the day (cell **B23**) times the billable rate (**B4**). Be sure to use an absolute cell reference for the billable rate.
11. Use AutoFill to copy the formula to the remaining days in the timesheet (cells **C25:H25**).
12. Calculate the bill total for the week by summing the daily bill amounts. In cell **B26**, enter a formula using the SUM function. The function argument should be the range of cells representing the daily bill totals (**B25:H25**).
13. Apply the **Currency** number format to cells **B25:H25** and cell **B26**.
14. Use the Recommended Charts feature to insert a **line chart** representing hours worked for each day for the week of August 1. Select cells **A18:H22** for the chart data.
15. Change the chart title to: **`Week of August 1`**
16. Preview how the worksheet will look when printed. If the print preview shows only the chart, return to the worksheet and click anywhere to deselect the chart. Now the print preview should show the entire worksheet.
17. Save and close the workbook.

projects

Data files for projects can be found by logging into your SIMnet account and going to the Library section.

# challenge yourself 1.4

In this project you will work with a college budget spreadsheet. You will change a few values in the budget, modify number formats, and calculate totals and the difference between expected income and expenses. You will then create a new budget workbook from a template, and practice changing the zoom level and arranging the workbooks.

Skills needed to complete this project:

- Working in Protected View (Skill 1.3)
- Entering and Editing Text and Numbers in Cells (Skill 1.4)
- Navigating a Workbook (Skill 1.2)
- Using AutoSum to Insert a SUM Function (Skill 1.13)
- Calculating Totals with the Quick Analysis Tool (Skill 1.14)
- Using the Status Bar (Skill 1.15)
- Applying Number Formats (Skill 1.5)
- Understanding Absolute and Relative References (Skill 1.11)
- Entering Simple Formulas (Skill 1.10)
- Checking Spelling (Skill 1.19)
- Using the Recommended Charts Feature (Skill 1.9)
- Exploring Charts (Skill 1.8)
- Creating a New Workbook Using a Template (Skill 1.17)
- Arranging Workbooks (Skill 1.18)
- Changing the Zoom Level (Skill 1.16)

1. Open the start file **EX2021-ChallengeYourself-1-4** and resave the file as: **`[your initials]EX-ChallengeYourself-1-4`**
2. If the workbook opens in Protected View, enable editing so you can make changes to the workbook.
3. Make the following changes to the *Budget* worksheet:
   a. Change the *Electric* item to **`Utilities`** (cell **A12**).
   b. Change the Insurance value from *90* to **`130`** (cell **B19**).
   c. Update the text in cell **D6** to: **`Quarter expenses`**

4. The worksheet is missing formulas to calculate totals. Enter formulas using the **SUM** function to calculate the following totals. Use any of the methods you learned in this chapter.
    a. Enter a formula in cell **B7** to calculate the total monthly income.
    b. Enter a formula in cell **B24** to calculate the total monthly expenses.
    c. Enter a formula in cell **E16** to calculate the total quarter expenses.
    d. Use the **status bar** to verify that the formula is calculating the correct total for each cell range.
5. Cell **E18** displays the number of months in the quarter. Change the number format in this cell to the **Number** format with no numbers showing after the decimal (so the number appears as **3** instead of **$3.00**).
6. The number format in the *Quarter Expenses* section does not match the number format in the other sections of the worksheet. Change the number format for cells **E11:E16** to the **Accounting Number Format**.
7. Review the formulas in the *Discretionary Income* section.
    a. Cells **E4:E6** should contain references to the cells where you just entered the formulas to calculate totals. Add the appropriate formula to cell **E6** to reference the value in cell **E16** (the total quarter expenses).
    b. The quarter is three months long, so the formulas in cells **E4** and **E5** should multiply the total monthly income and total monthly expenses by three. Correct the formulas in cells **E4** and **E5**. Use an absolute reference to the value in cell **E18** (the number of months in the quarter).
8. Use spelling checker to find and correct any spelling errors in the *Budget* (*Hint*: There is one spelling error on this worksheet.)
9. Use the Recommended Charts feature to insert a **clustered column chart** representing the monthly expenses. Select cells **A10:B23** for the chart data.
10. Change the chart title to: `Monthly Expenses`
11. Save the workbook. Do not close it or exit Excel.
12. Create a new file from a template called *Personal Expenses Calculator*. If you do not see this template, search for it using the search phrase *personal expenses*. **NOTE**: If you are unable to find the *Personal Expenses Calculator* template or are unable to complete this step due to your school's computer lab restrictions, download the template from the *Resources* link. Open the template and move on to **step 13**.
13. Explore the worksheets in this workbook.
14. If you think you might like to come back to this workbook later for your personal use, this is a good point to save it. Be sure not to close the file. Use the file name: `[Your Initials]PersonalExpenses`
15. You should still have two workbooks open: the college budget workbook from the beginning of the project and the personal expenses workbook based on the template. Arrange the workbooks so you can see both at the same time.
    a. Try different arrangements until you find the one that works best for you.
    b. Practice moving back and forth between the two workbooks.

16. Make the personal budget workbook active and navigate to the Dashboard worksheet. Modify the zoom to **80%**.
17. Close both workbooks. If you made changes to the personal budget workbook and you plan to continue using it, be sure to save the changes.

projects

Data files for projects can be found by logging into your SIMnet account and going to the Library section.

## on your own 1.5

For Spring Break, you've decided to take a seven-day road trip. Use this Excel workbook to calculate the number of miles you will drive each day and the gas cost for each day. Use the techniques you've learned in this chapter to calculate the total miles and the total gas cost. Don't forget to end the trip at the same location you started! You may want to use the Internet to look up mileage, MPG (miles per gallon), and gas price information.

Skills needed to complete this project:

- Navigating a Workbook (Skill 1.2)
- Working in Protected View (Skill 1.3)
- Entering and Editing Text and Numbers in Cells (Skill 1.4)
- Entering Dates and Applying Date Formats (Skill 1.6)
- Inserting Data Using AutoFill (Skill 1.7)
- Understanding Absolute and Relative References (Skill 1.11)
- Entering Simple Formulas (Skill 1.10)
- Calculating Totals with the Quick Analysis Tool (Skill 1.14)
- Using AutoSum to Insert a SUM Function (Skill 1.13)
- Applying Number Formats (Skill 1.5)
- Using the Recommended Charts Feature (Skill 1.9)
- Exploring Charts (Skill 1.8)
- Checking Spelling (Skill 1.19)

1. Open the start file **EX2021-OnYourOwn-1-5** and resave the file as:
   **[your initials]EX-OnYourOwn-1-5**
2. If the workbook opens in Protected View, click the **Enable Editing** button in the Message Bar at the top of the workbook so you can modify the workbook.
3. Complete the *Trip Details* section of the *Spring Break* worksheet:
   a. Enter the dates of your road trip. Use a date format that includes the day of the week.
   b. Enter a start and end location for each day. Remember—the starting location for each day should be the same as the end location for the previous day. If you use a formula with a relative reference rather than retyping the location name for each start location, you can use AutoFill to complete the start location column. Consider using a formula to ensure that the final end location is the same as the first start location.
   c. Look up and enter the miles between each location. Use an appropriate number format for the *Number of Miles* column. (Hint: Use *mapquest.com* or *maps.google.com* to look up the mileage between locations.)

4. Enter your car information including the MPG (miles per gallon). If you don't know your MPG, the government website *www.fueleconomy.gov* has excellent information on average MPG for a variety of car makes, models, and years.
5. Enter the average gas price in your area (or the area of your road trip). Again, the *www.fueleconomy.gov* website has links to this type of information.
6. Enter a formula to calculate the gas cost per mile for your car (gas price per gallon/your car's MPG).
7. Now that you have the gas cost per mile for your car, you can figure the cost of the road trip. Enter a formula to figure the gas cost per day (the number of miles * your gas cost per mile) for the first day of the trip. Be sure to use absolute and relative references as appropriate, so you can use AutoFill to copy the formula to the rest of the cells in the *Gas Cost per Day* column.
8. Apply appropriate number formats to all the cells in the workbook that display costs. *Hint:* The Accounting Number Format is best for costs that appear in a column. For costs that appear on their own, you may want to use the Currency Style format.
9. Use the Recommended Charts feature to insert a chart representing the number of miles driven per day. Change the chart title.
10. Don't forget to spell check the workbook.
11. Save and close the workbook.

projects

# fix it 1.6

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The workbook for this project tracks how many miles you walked each day for the week of May 1, 2022, through May 7, 2022. Your goal for each day is to walk at least four miles. Use the skills learned in this chapter to fix the workbook.

Skills needed to complete this project:

- Navigating a Workbook (Skill 1.2)
- Working in Protected View (Skill 1.3)
- Entering and Editing Text and Numbers in Cells (Skill 1.4)
- Entering Dates and Applying Date Formats (Skill 1.6)
- Inserting Data Using AutoFill (Skill 1.7)
- Applying Number Formats (Skill 1.5)
- Understanding Absolute and Relative References (Skill 1.11)
- Entering Simple Formulas (Skill 1.10)
- Calculating Totals with the Quick Analysis Tool (Skill 1.14)
- Using AutoSum to Insert a SUM Function (Skill 1.13)
- Using the Recommended Charts Feature (Skill 1.9)
- Exploring Charts (Skill 1.8)
- Checking Spelling (Skill 1.19)

1. Open the start file **EX2021-FixIt-1-6** and resave the file as:
   `[your initials]EX-FixIt-1-6`
2. If the workbook opens in *Protected View*, click the **Enable Editing** button in the *Message Bar* at the top of the workbook so you can modify the workbook.
3. The worksheet is missing a title. Type this title in cell A1: `Exercise Log`
4. The daily goal should be 3, not 30. Correct the value in cell **D2**.
5. The dates are missing from cells **A6:A11**. Use AutoFill to complete the dates for the rest of the week.
6. The exercise log would be more useful if the date showed the day of the week in addition to the date. Change the date format for cells **A5:A11** so the date displays in the **long date** format: **Sunday, May 1, 2022**. If your version of Excel does not include the day of the week in the long date format, use the long date format anyway.
7. The mileage for each day should use the Comma Style number format. Correct the number format in cells **C5:C11**.
8. Use one of the skills you learned in this chapter to enter formulas using the **SUM** function in cells **B12** and **C12** to calculate the weekly total minutes and miles.

9. The formulas in the *Under/Over Goal* column are not quite right. Fix the formula in cell **D5** to use an absolute reference where appropriate, and then use AutoFill to replace the formulas in cells **D6:D11**.
10. The worksheet is missing a chart. Use the Recommended Charts feature to insert a line chart representing how many minutes you walked each day. Title the chart: **`Minutes per Day`**
11. There may be spelling errors. Be sure to use spelling checker before you finish the project.
12. Preview how the worksheet will look when printed.
13. Save and close the workbook.