

Basic Skills Using Excel

LEARNING OUTCOMES

1. Describe how to open, close, and save an Excel workbook.
2. Explain how to insert and delete an Excel worksheet.
3. Describe how to insert, delete, merge, and split cells in an Excel worksheet.
4. Explain how to set up a worksheet in Excel for printing.
5. Describe how to insert and delete rows and columns in an Excel worksheet.
6. Explain how to create and edit formulas in Excel using the formula bar.
7. Describe how to create a chart using Excel.

Introduction to Excel

Microsoft Excel is a spreadsheet program that enables you to enter, manipulate, calculate, and chart data. An Excel file is referred to as a *workbook*, which is a collection of worksheets. Each *worksheet* is comprised of rows and columns of data that you can perform calculations on. It is these calculations that make Excel such a powerful tool.

You can use Excel for a wide variety of purposes, from calculating payments for a personal loan, to creating a personal budget, to tracking employee sales and calculating bonuses for your business.

This plug-in introduces the basics of using Excel. It is designed to show you the nuts and bolts, along with a few fancy features, to get you off to a good start using the program. However, you should review the CD, *MISource*, which accompanies this text for additional material, animated tutorials, and simulated practice files that go beyond what we cover in the text. Figure T2.1 displays all the tasks and lessons that are provided on the *MISource* CD. This plug-in will focus on the following six areas:

1. Workbooks and worksheets.
2. Working with cells and cell data.
3. Printing worksheets.
4. Formatting worksheets.
5. Formulas.
6. Working with charts and graphics.

MISource CD Microsoft Excel Lessons	
Introduction to Excel <ul style="list-style-type: none"> ■ Introduction to Excel 2003 ■ Opening and closing workbooks ■ Creating workbooks ■ Using templates ■ Creating folders for saving workbooks ■ Saving a workbook in a new format ■ Using the research tool 	Printing Worksheets <ul style="list-style-type: none"> ■ Setting up the page for printing ■ Setting up margins for printing ■ Setting up the sheet for printing ■ Setting and clearing the print area ■ Previewing a print area ■ Printing selections, worksheets, and workbooks
Managing Workbooks <ul style="list-style-type: none"> ■ Inserting worksheets ■ Deleting worksheets ■ Hiding and unhiding worksheets ■ Moving and copying worksheets ■ Formatting worksheets ■ Splitting and arranging workbooks ■ Arranging and hiding/unhiding 	Analyzing Data <ul style="list-style-type: none"> ■ Using Autofilter ■ Creating and sorting lists ■ Adding functions to formulas using the Autosum button ■ Entering formulas ■ Creating and editing formulas using the formula bar ■ Entering a range in a formula by dragging ■ Using absolute and relative references ■ Using the insert function feature ■ Creating formulas using the SUM function ■ Creating formulas using the MIN and MAX functions ■ Creating formulas using the DATE or NOW function ■ Creating formulas using the PMT function ■ Creating formulas using the IF function
Working with Cells and Cell Data <ul style="list-style-type: none"> ■ Inserting cells ■ Deleting cells ■ Merging and splitting cells ■ Cutting, copying and pasting cells ■ Moving selected cells using drag-and-drop ■ Entering text in cells ■ Using the fill handle tool editing text in cells ■ Clearing cell content ■ Finding and replacing cell content ■ Using go to ■ Finding and replacing formatting in cells ■ Changing the look of cells ■ Using format painter ■ Applying number formats ■ Applying styles 	Working with Charts and Graphics <ul style="list-style-type: none"> ■ Creating a chart using the chart wizard ■ Modifying charts ■ Moving a chart ■ Adding graphics ■ Modifying graphic properties ■ Positioning graphics

(Continued)

FIGURE T2.1
MISource Excel
Lessons



FIGURE T2.1

(Continued)

MISource CD Microsoft Excel Lessons	
Formatting Worksheets <ul style="list-style-type: none">■ Inserting rows and columns■ Deleting rows and columns■ Hiding and unhiding rows and columns■ Freezing and unfreezing rows and columns modifying row heights■ Modifying column widths■ Changing alignment■ Applying an autoformat■ Changing worksheet orientation■ Adding headers and footers	Workgroup Collaboration <ul style="list-style-type: none">■ Using Web page preview■ Saving worksheets as Web pages■ Inserting and editing hyperlinks■ Adding comments■ Editing comments

Workbooks and Worksheets

Opening a file retrieves it from storage and displays it on your computer screen. To open an existing workbook:

1. Click the **Open** button on the standard toolbar.
2. The *Open* dialog box appears; make sure the location in the **Look in:** box is correct.
3. Select the **workbook** name in the large list box.
4. Click the **Open** button in the dialog box (see Figure T2.2).

Closing a workbook removes it from your computer screen and stores the last saved version for future use. If you have not saved your latest changes, Excel prevents you from losing work by displaying a dialog box that asks if you want to save the changes you made before closing. You must click one of the three options in the dialog box before Excel will close the workbook.

To close a workbook and save your latest changes:

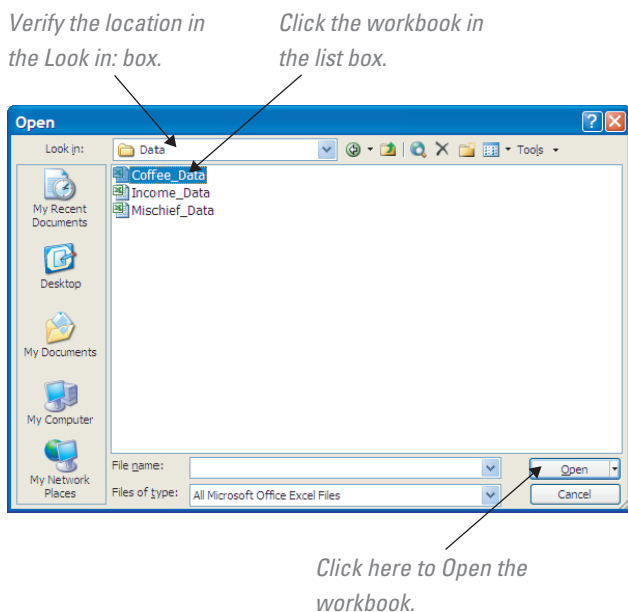
1. Click **Close Window** on the menu bar. Be careful not to click the **Close** button above the **Close Window** button; they look the same, but the **Close** button will exit the application.
2. Click **Yes** in the dialog box.

When the *Open* dialog box appears, the last location you used appears as the default location in the box. If this is not the location of the workbook you want, click the **up one level button** to the right of the **Look in:** box until the correct location is displayed (you may have to double-click a different folder or drive). Another method is to click the **arrow** to open the drop-down list, which displays different drives. Next, click the desired drive and double-click folders until you see your workbook name in the large list box.

If you have made no changes since the last time you saved the workbook, it will close immediately. If changes have been made, Excel displays a dialog box asking if you want to save the changes you made before closing. Click **Yes** to save the changes. Click **No** to

FIGURE T2.2

Opening a Workbook



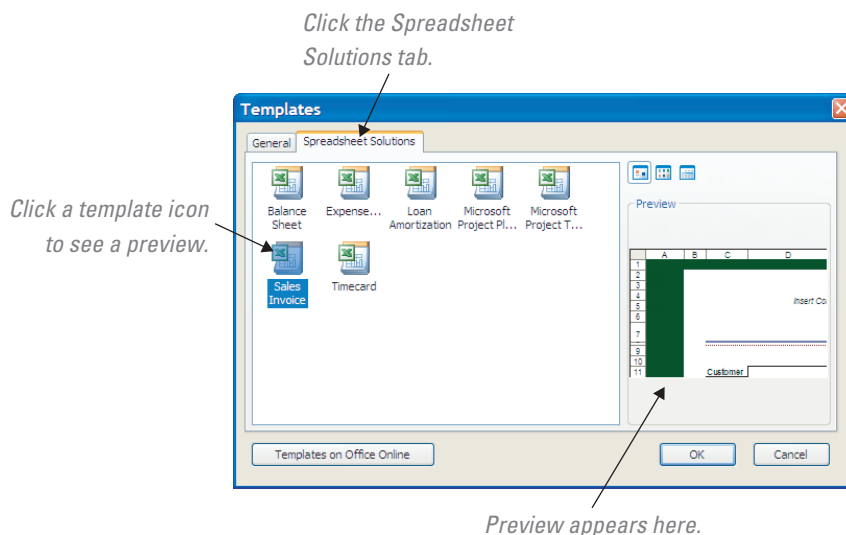


FIGURE T2.3
Workbook Template

close the workbook without saving your latest changes. Click **Cancel** to keep the workbook open.

CREATING WORKBOOKS USING TEMPLATES

A template is a file with predefined settings that you can use as a starting point for your workbook. An Excel template makes creating a new workbook easy and results in a professional appearance. Some examples of workbook templates are Balance Sheet, Sales Invoice, and Loan Amortization.

To create a workbook using a template:

1. Click **New...** on the File menu.
2. Click **On my computer...** in the Templates area of the New Workbook task pane.
3. Click the **Spreadsheet Solutions** tab in the Templates dialog box.
4. Click a **template icon** to see a preview in the right pane (see Figure T2.3).
5. Click **OK**.

SAVING A WORKBOOK

Sometimes when you are saving a workbook, you will want to create a new folder, where you can later save other, similar workbooks. You can create this new folder at the same time you save the workbook.

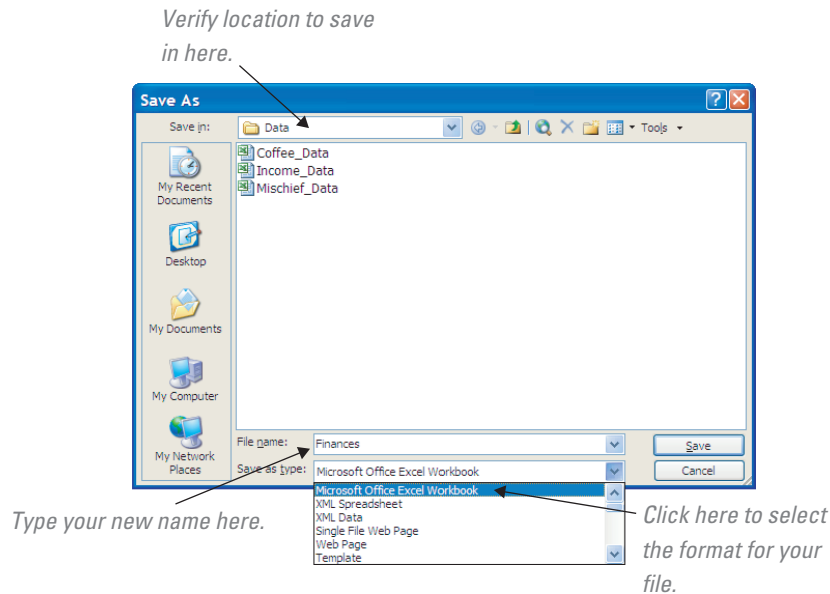
To create a new folder:

1. Click **Save As...** on the File menu.
2. Click the **Create New Folder** button to the right of the Save in: box.
3. Enter the name for the new folder in the dialog box that appears.
4. Click **OK**.
5. Enter the name for the file in the File name: box.
6. Click the **Save** button.

You can also use the Save As dialog box to save the workbook with a new name (refer to Figure T2.4):

1. Click **Save As...** on the File menu.
2. Click in the **File name:** box.
3. Type in the new **file name**.
4. Click the **Save** button in the *Save As* dialog box.

FIGURE T2.4
Saving a Workbook



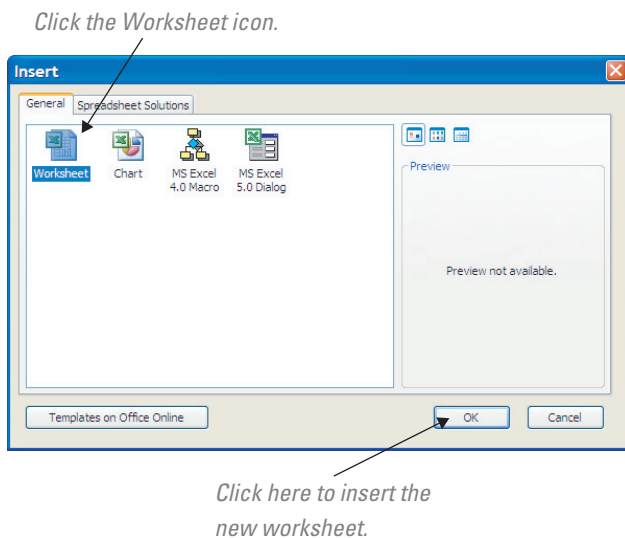
INSERTING AND DELETING WORKSHEETS

When you create a new workbook, it contains three worksheets. However, a workbook can contain as many worksheets as you need.

To add a worksheet:

1. Right-click on any **Sheet tab**.
2. Select **Insert...** from the shortcut menu.
3. To insert a simple worksheet, click the **Worksheet** icon in the dialog box.
4. To insert a formatted worksheet, click the **Spreadsheet Solutions** tab, and click any of the template icons.
5. Click **OK** (see Figure T2.5).

FIGURE T2.5
Inserting a New Worksheet



You can insert more than one worksheet at once. First, select the number of worksheets you want to add. Next, right-click and select **Insert...** Click the **Worksheet** icon, and click **OK**.

Sometimes you may need only one worksheet in your workbook. Limiting the worksheets in your workbook to those that contain information can make your workbook appear organized and professional.

To delete a worksheet:

1. Right-click on a **Sheet tab**.
2. Select **Delete** from the menu.

You can delete more than one worksheet at once. First, select all the sheet tabs you want to remove by holding the **CTRL** key down and clicking on the **Sheet(s) tabs** you wish to delete. Next, **right-click** and select **Delete**. If a worksheet contains data, Excel will display a dialog box, warning that the sheet may contain data and asking if you are sure you want to permanently remove it from your workbook.

Working with Cells and Cell Data

INSERTING AND DELETING CELLS

You may find you want to add some extra space or more information into the middle of your worksheet. To do this, you must insert a new cell. This new cell can be left blank, or you can enter information into the cell. When you insert a new cell, you have the option to shift the existing data to the right or down, allowing you to place the new cell exactly where you want it.

To insert a cell:

1. Select **Cells...** from the Insert menu.
2. Click the **Shift cells right** or **Shift cells down** radio button (see Figure T2.6).
3. Click **OK**.

You can customize your workbook and change the layout of data by deleting cells. Deleting cells not only deletes the information and formatting in the cell, but it also shifts the layout of the workbook. By deleting an empty cell, you shift all the surrounding cells as well.

To delete a cell:

1. Select **Delete...** from the Edit menu.
2. Click the **Shift cells left** or **Shift cells up** radio button (see Figure T2.7).
3. Click **OK**.

Pressing the *Delete* key on the keyboard will delete the contents of the cell but not the cell itself.

MERGING AND SPLITTING CELLS

Merging and splitting cells is one way to control the appearance of your worksheet. Titles of worksheets are typically centered across the top of the columns of information. Excel allows you to merge and center cells to create a title that appears centered in one cell across the top of your workbook. Excel also allows you to reverse this action by splitting the cell. Splitting a cell converts a merged cell back to several cells, with the information displayed in the uppermost left cell.

To center and merge cells:

1. Select the **cells** you want to merge, making sure the text you want centered is in the uppermost left cell.
2. Click the **Merge and Center** button on the Formatting toolbar.

To split merged cells:

1. Select the **merged cell** you want to split into several cells.
2. Click the **Merge and Center** button on the Formatting toolbar (see Figure T2.8).

When you select cells to be merged, Excel will center only the data in the uppermost left cell. All other data will be lost.

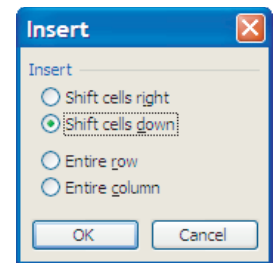


FIGURE T2.6

Inserting a New Cell

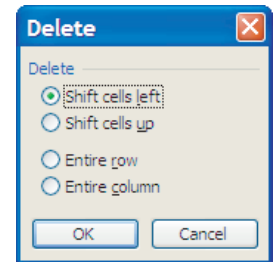


FIGURE T2.7

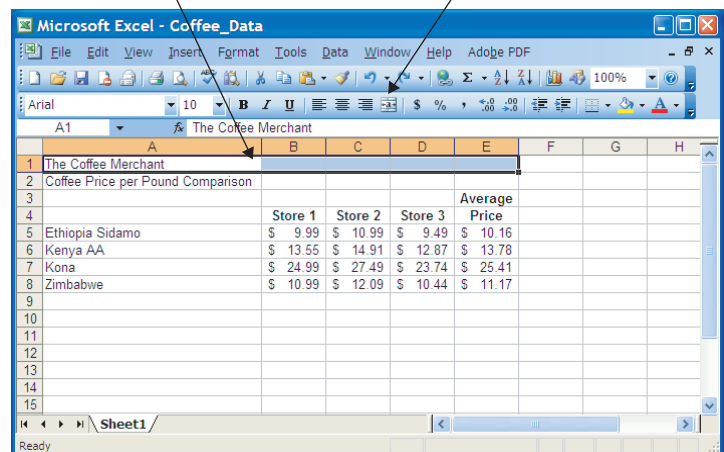
Deleting a Cell

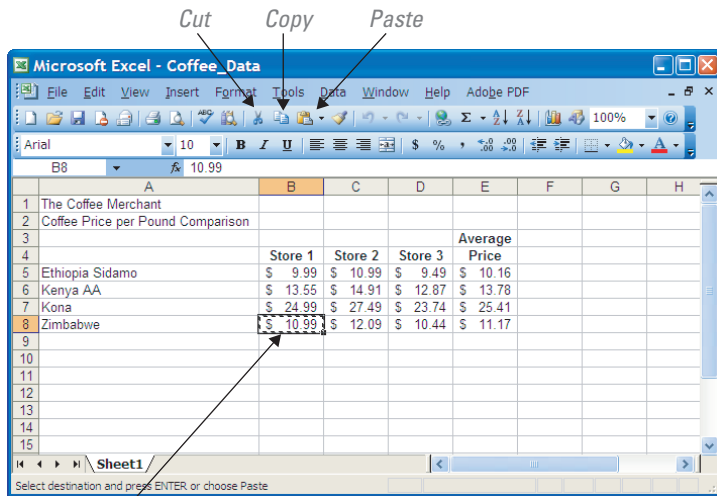
FIGURE T2.8

Merging Cells

Select the cells you want to merge and center.

Click the Merge and Center button.





A cell that you have copied displays a dotted line around it.

FIGURE T2.9

Copying and Pasting Cells

CUTTING, COPYING, AND PASTING CELLS

The Cut, Copy, and Paste commands are used to move data and other items within a workbook and between applications. Data that is cut is removed from the document and placed on the Clipboard for later use. The Copy command places a duplicate of the selected data on the Clipboard without changing the workbook. The Paste command is used to insert items from the Clipboard into a workbook.

To cut or copy data within a workbook:

1. Select the **cell** or **cells** you want to cut or copy.
2. Click the appropriate toolbar button:
 - a. **Cut** or
 - b. **Copy**
 - c. The cell appears with a flashing dotted line around it.

3. Place the cursor where you want to insert data from the Clipboard.
4. Click the **Paste** toolbar button (see Figure T2.9).

When you cut or copy items, they are placed on the Clipboard. The Clipboard can store up to 24 items for use in the current document or any other application. You can view the contents of the Clipboard at any time by opening the **Edit** menu and selecting **Office Clipboard...** The icons in the Clipboard identify the type of document from which each item originated (Word, Excel, Paint, etc.). A short description of an item will appear when you select it or move the cursor over its icon.

ENTERING TEXT IN CELLS

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 add text to your workbook:

1. Click in the **cell** in which you want to add text.
2. Type the **text**.
3. Click **outside** the cell to accept your entry.

APPLYING NUMBER FORMATS

Formatting your numbers changes the appearance of the data in your worksheet, but does not change its value. The formatted number is displayed in the cell, and the actual value is displayed in the formula bar. Excel provides several numeric formats for you to use in your workbook, including currency, percentage, date, time, and accounting.

To format numbers:

1. Select the **cells** you want to format.
2. Click **Cells...** on the Format menu, and click the **Number** tab.
3. In the **Category:** list, click the format you want to use (see Figure T2.10).

Under each number category, you can choose pre-defined formatting or create and edit formats of your own.

The Formatting toolbar allows you to add default number styles. Select the cell you want to format, and then do one of the following:

- To add the default currency style, click the **Currency Style** button.
- To add the default percent style, click the **Percent Style** button.
- To add the default comma style, click the **Comma Style** button.

APPLYING STYLES

A style is the combination of effects that can be applied at one time. Styles can include formatting such as character effects, background color, typefaces, and number formatting. Excel comes with predefined styles including Currency, Comma, and Percent styles, but also gives you the ability to create your own styles in the Style dialog box.

To apply a basic style:

1. Select the **cells** you want to format.
2. Click **Style...** on the Format menu.
3. Click the **arrow** next to the Style name box and select the **style** you want (see Figure T2.11).
4. Review the **effects** included in the style (click the **Modify...** button to make any changes to the style).
5. Click **OK**.

Printing Worksheets

SETTING UP THE PAGE FOR PRINTING

You may find that your worksheet is too wide to print on one sheet of paper, even with landscape orientation. Excel allows you to adjust how your worksheet will print. In the dialog box, you can adjust the scale of your worksheet, making it smaller and forcing it to fit on one page, or you can print your worksheet across multiple pages by changing the *Fit to:* options.

To set up a page to print:

1. Click **Page Setup...** on the File menu.
 - To print your information on one page, adjust the **Scaling** option.
 - To print your information across multiple pages, change the **Fit to:** options.
2. Click the **Print Preview** button to see what your printed worksheet will look like (see Figure T2.12).

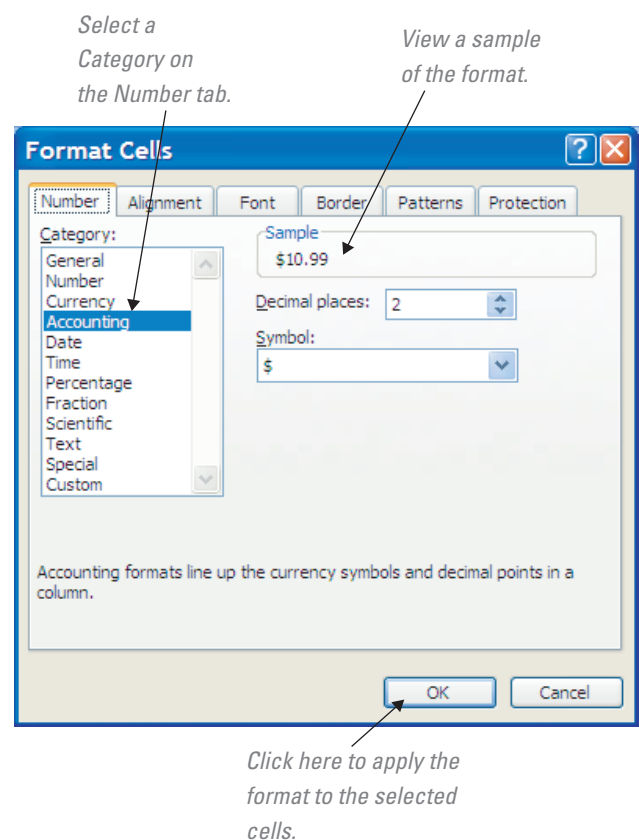


FIGURE T2.10
Applying Number
Formats

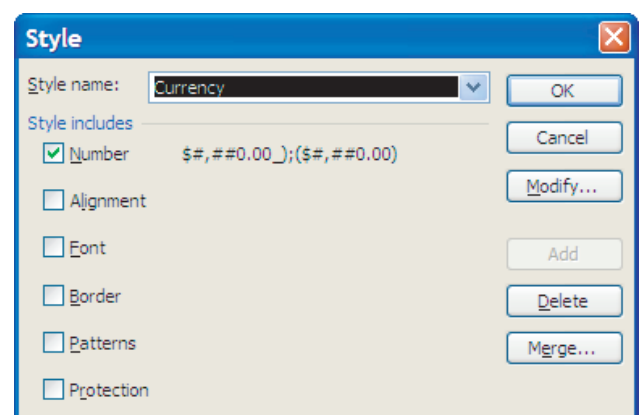
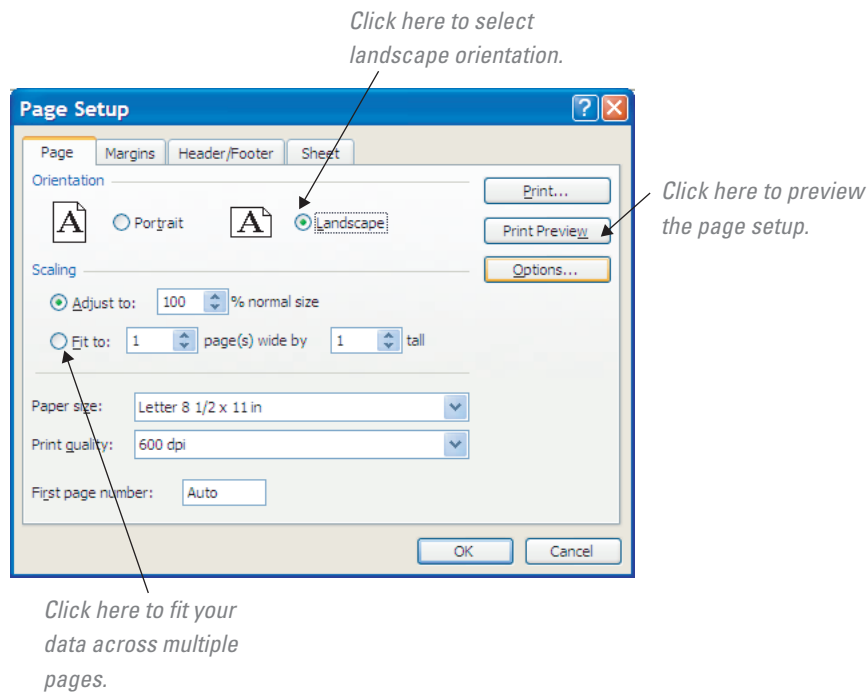


FIGURE T2.11
Applying Styles

FIGURE T2.12

Page Setup



SETTING MARGINS FOR PRINTING

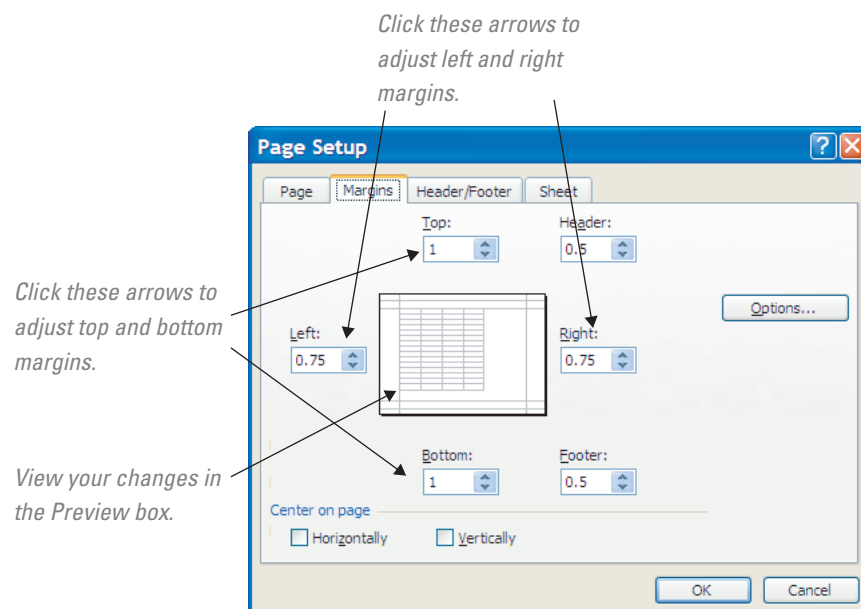
Margins are the blank spaces at the top, bottom, left, and right of a printed page. Excel's default margins are typically 1 inch for the top and bottom, and 0.75 inches for the left and right. Using the Page Setup dialog box, you can easily adjust these margins.

To adjust the margins for a document:

1. Click **Page Setup...** on the File menu.
2. Click the **Margins** tab.
3. Click the **arrows** to adjust the top, bottom, left, and right margins.
4. The **Preview** box shows you which part of the page you are changing (See Figure T2.13).

FIGURE T2.13

Setting Up Margins for Printing



The Margins tab also allows you to adjust just the placement of the header and footer. Further, you can choose to horizontally and/or vertically center the information on the printed page.

PREVIEWING A PRINT AREA

The *Print Preview* window shows you a reduced version of your worksheet as it will appear when printed. Save time and printing by always checking your layout in Print Preview before you print. Use this view to see how your information fits on each page and to verify such things as placement of page numbers, headers, and column and row labels.

To preview your worksheet before printing it:

1. Click the **Print Preview** button on the standard toolbar.
2. When the Print Preview window opens, scroll the window to view the pages.
3. Notice that the mouse pointer has changed to a magnifying glass. Click on a portion of the document to see it full-size (see Figure T2.14).
4. Click again to reverse the magnification.
5. Click the **Next** and **Previous** buttons to view the pages of your workbook.
6. To return to Normal view, click **Close** on the Print Preview toolbar.

You can adjust page breaks, page setup, margins, headers and footers, and other page options from the Print Preview window. You can also print the worksheet from the Print Preview window by clicking the Print button to bring up the Print dialog box.

PRINTING SELECTIONS, WORKSHEETS, AND WORKBOOKS

Printing a print area and printing your worksheet or workbook operate the same way as other Microsoft Office applications. Use the *Print dialog box* to check your print settings before printing. Be sure your printer's name is displayed in the section, and select the number of pages you want to print in the Print range section. Remember, if you have set a Print Area, then only that part of your worksheet will print.

To check your print settings and print:

1. Click **Print...** on the File menu.
2. Verify that the correct printer name is displayed in the Printer section.
3. Verify that **All** is selected in the Page range section (see Figure T2.15).
4. Click **OK**.

In the Print dialog box, you can also specify to print the selection, the entire workbook, or just the active worksheet.

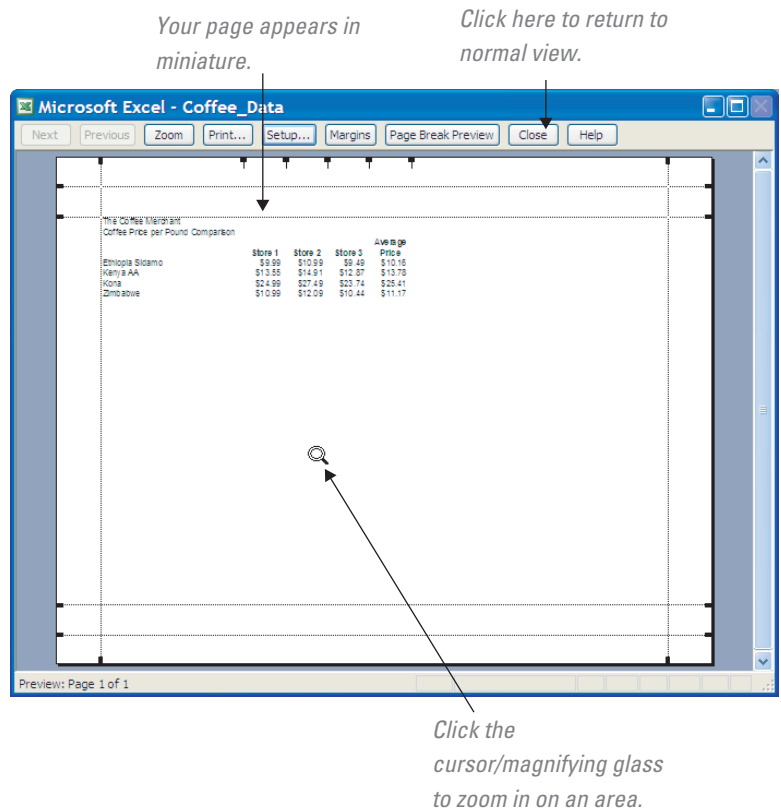
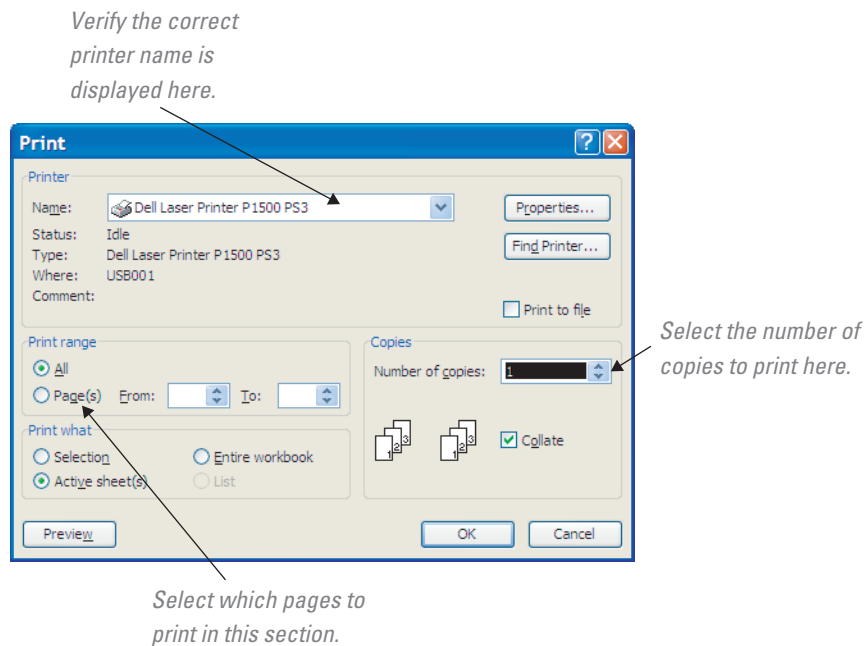


FIGURE T2.14
Previewing a Print Area

FIGURE T2.15
Preparing to Print



Formatting Worksheets

INSERTING ROWS AND COLUMNS

You may need to add rows or columns of new information into the middle of your workbook.

To insert a row:

1. Place your cursor in a cell in the **row below** where you want the new row.
2. Click **Rows** on the Insert menu.

To insert a column:

1. Place your cursor in a cell in the **column to the right** of where you want the new column.
2. Click **Columns** on the Insert menu (see Figure T2.16).

When you insert a row or column, a smart tag will appear. Click the smart tag to choose formatting options—**Same as left**, **Same as right**, or **Clear Formatting**.

DELETING ROWS AND COLUMNS

When you delete a row or column, you are removing all of those cells from your workbook. Once you have deleted the row or column, it disappears and the rest of the columns and rows move to replace it.

To delete a row or column:

1. Select the **row** or **column** you want to delete.
2. Click **Delete** on the Edit menu (see Figure T2.17).

Be careful. If you delete a row or column containing data, that data will be lost.

MODIFYING ROW HEIGHTS

When you first enter data in your workbook, Excel automatically sets the rows of your worksheet according to preferences. You may want to make rows a different height from this default setting.

FIGURE T2.16
Inserting a Row or Column

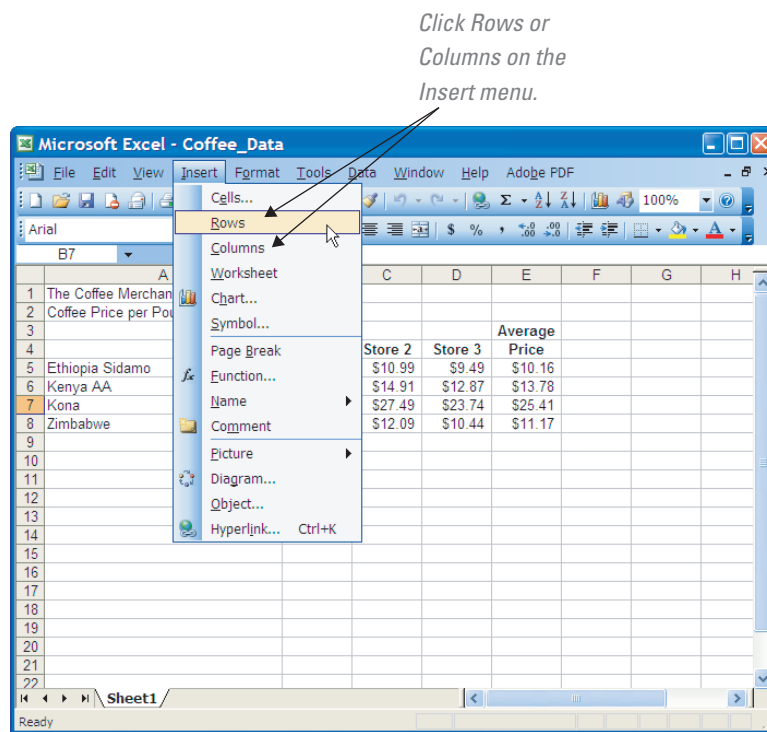
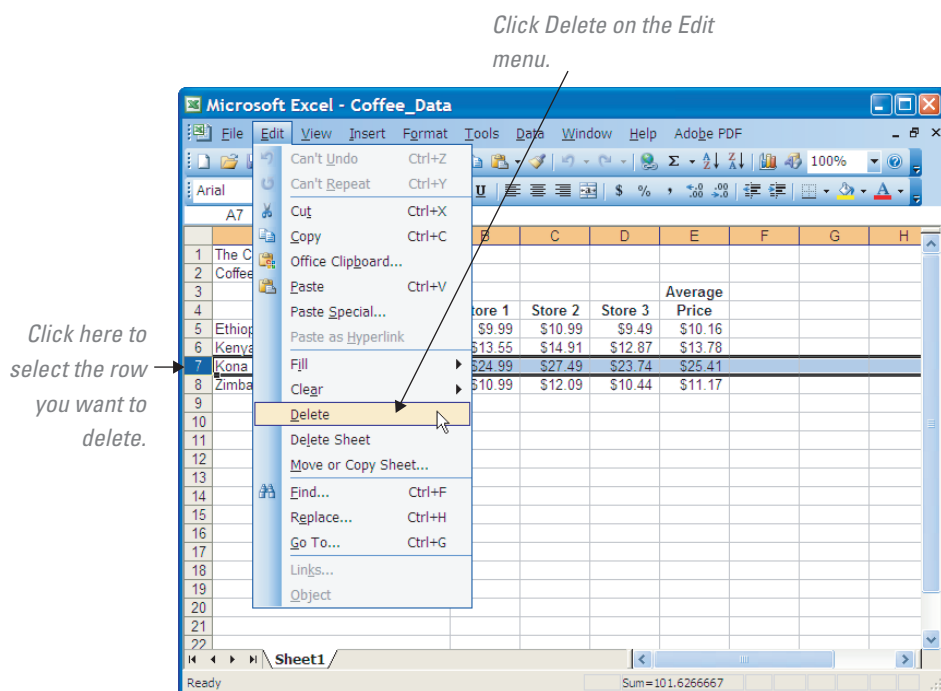


FIGURE T2.17
Delete a Row or Column



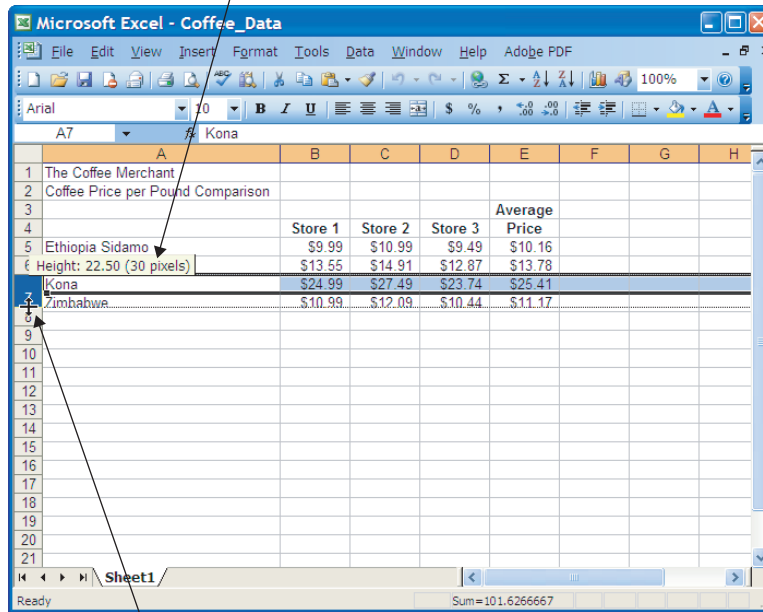
To modify row heights:

1. Select the **row** or **rows** you want to change.
2. Drag the **boundary** until the row is the height you want (see Figure T2.18).

If you want to change all the rows in your worksheet to the same height, click the *Select All* button (the gray box above Row 1 and to the left of Column A) and then drag the *boundary* line (this is the physical line that separates each column and row). Double-click the boundary (or select from Row on the Format menu) to make the row automatically fit the contents.

FIGURE T2.18
Modifying Row Heights

As you drag, a tooltip indicates the current height.



When the cursor changes to this shape, drag down to desired height.

FIGURE T2.19
Modifying Column Widths

MODIFYING COLUMN WIDTHS

When you first enter data in your workbook, Excel automatically sets the widths of the columns. As you type data into multiple columns, you may find that Excel does not display all the text in a cell. You can change the widths of columns in your workbook so that all your information is displayed.

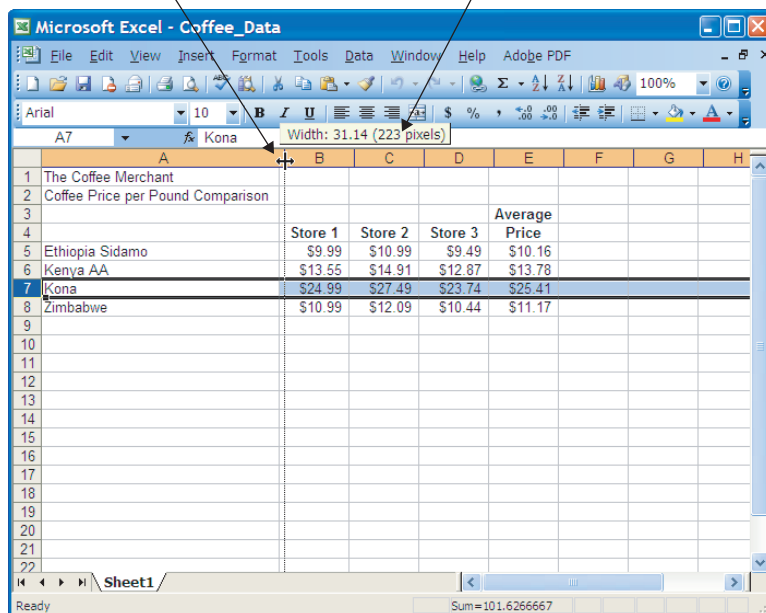
To modify column widths:

1. Select the **column** or **columns** you want to change.
2. Drag the **boundary** until the column is the width you want (see Figure T2.19).

To change all the columns in your worksheet to the same width, point to **Column** on the **Format** menu, then click **Standard Width...** or click the **Select All** button (the gray box above Row 1 and to the left of Column A) and then drag the boundary. To make the column automatically fit the contents of the selected cell, double-click the **boundary** to the right of the column (or select **AutoFit Selection** from **Column** on the **Format** menu).

What the cursor changes to this shape, drag across to desired width.

As you drag, a tooltip indicates the current width.



Formulas

ENTERING FORMULAS

A formula is an equation that performs calculations between cells in a worksheet or table. A formula always begins with an equal sign. A simple formula may contain cell references and operators.

To enter a formula:

1. Click the **cell** in which you want to enter the formula.
2. Type = (an equal sign).
3. Type the **formula**.
4. Click **outside** the cell or press **Enter** (see Figure T2.20).

If a formula has more than one operator, Excel will perform mathematical operations in this order:

- Exponentiation
- Multiplication and division
- Addition and subtraction

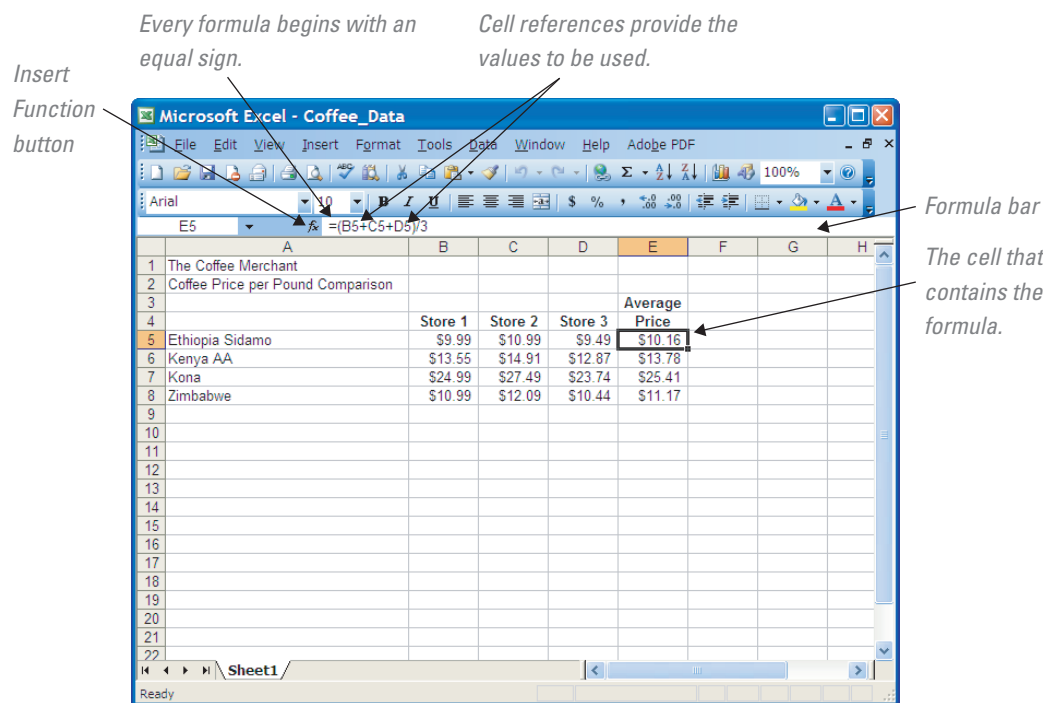
Adding parentheses around an operation will override this order, forcing Excel to perform calculations within the parentheses first.

USING THE FORMULA BAR

To enter a formula in the formula bar:

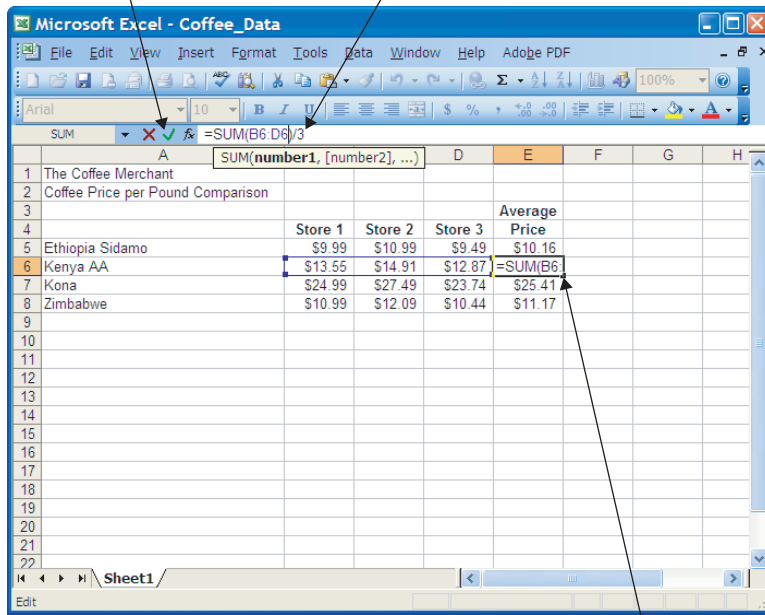
1. Select the **cell** in which you want to add the formula.
2. In the formula bar, type an **equal sign (=)**.

FIGURE T2.20
Entering a Formula



Click the Enter Formula button when you are done.

Click inside the formula bar to edit the formula.



Select the cell with the formula you want to edit.

FIGURE T2.21

Using The Formula Bar

3. Enter the formula (including any functions, operators, references, and/or constants).
4. Click the **Enter Formula** button (see Figure T2.21).

Formulas can be complex equations. Often when you first enter a formula, you will not get the result you intended. This may be because a cell reference has changed, or because the operations are being performed in an undesired order. Use the Formula Bar when you need to edit a formula.

To edit a formula using the Formula Bar:

1. Select the **cell** containing the formula you want to change.
2. Click inside the **Formula Bar**.
3. Click and drag to highlight the **part of the formula** you want to change.
4. Make the changes to the **formula**.
5. Click the **Enter Formula** button.

USING ABSOLUTE AND RELATIVE REFERENCES

Cell references can be relative, absolute, or mixed. A *relative reference* is a reference that adjusts to the new location in the worksheet when the formula is copied. An *absolute reference* is a reference whose location remains constant when the formula is copied. A *mixed reference* is a reference that contains both a relative and an absolute reference. Figure T2.22 displays an example of each.

To enter an absolute or relative reference:

1. Type the **name of the cell**.
2. To enter an absolute reference, type a **\$**, the **column name**, another **\$**, and the **row name** (e.g., **\$A\$1**).
3. To enter a mixed reference, type a **relative reference** and an **absolute reference** in the cell reference.

By default, formulas use relative references. If you want your formula to have an absolute reference, you must change the reference to absolute.

FIGURE T2.22

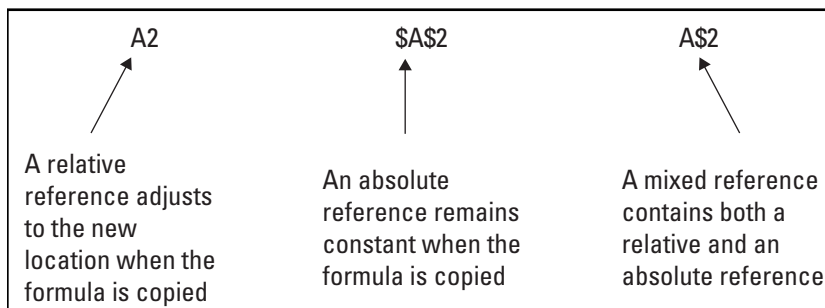
Using Absolute and Relative References

USING THE SUM FUNCTION

The SUM mathematical function is used to add several cells together. Instead of writing a formula with several references separated by a plus sign, you can sum a range of cells. A SUM function looks like this: **=SUM(A3:A6)**.

To use the SUM Function:

1. Select the **cell** in which you want to enter the function.
2. Click the **Insert Function** button (refer back to Figure T2.20).
3. Click **SUM** from the list of **Most Recently Used** or **Math & Trig** functions and click **OK**.



4. Enter the **range of cells** that you want to add.
5. Click **OK** (see Figure T2.23).

When you click an *argument* box, a description of the argument appears below the description of the function. An *argument* is a name for a value, expression, or cell reference that is passed to the function for its use in calculating an answer. In addition, as you enter arguments, the dialog box will display the results of your formula.

If the SUM function is not in your list of most recently used functions, click the **arrow** next to the **Or select a category:** box, click **Math & Trig**, and select **SUM** from that list of functions.

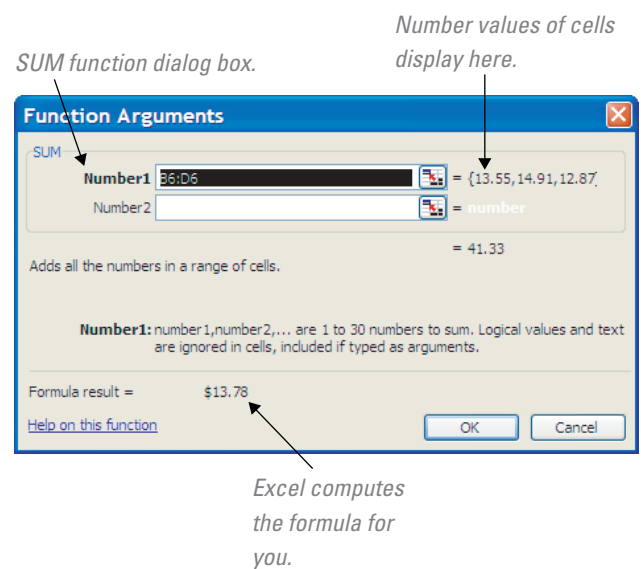


FIGURE T2.23
Using the SUM Function

USING THE MIN AND MAX FUNCTIONS

The *MIN (minimum) statistical function* will give you the smallest value in a range of values. The *MAX (maximum) statistical function* will give you the largest value in a range of values. These functions look like this:

MIN function: =MIN(A3:A6)

MAX function: =MAX(A3:A6)

To use the MIN and MAX functions:

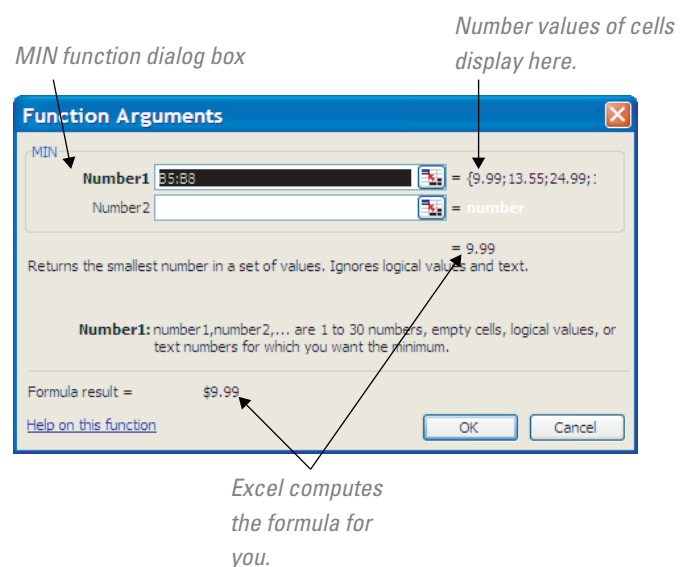
1. Select the **cell** in which you want to enter the function.
2. Click the **Insert Function** button.
3. Click **MIN** or **MAX** from the list of **Most Recently Used** or **Statistical** functions and click **OK**.
4. If necessary, enter the **range of cells**.
5. Click **OK** (see Figure T2.24).

If the MIN or MAX functions are not in your list of most recently used functions, click the **arrow** next to the **Or select a category:** box, click **Statistical**, and select **MIN** or **MAX** from that list of functions.

When you click an argument box, a description of the argument appears below the description of the function.

Also, as you enter arguments, the dialog box will display the results of your formula. By default, Excel will enter a range of contiguous cells for you.

FIGURE T2.24
Using the MIN and MAX Function



USING THE DATE OR NOW FUNCTION

Use the Date & Time function or the NOW function to insert the date and time into your workbook. The date and time will be displayed at all times, but will only be updated when the worksheet is calculated. The NOW function looks like this:

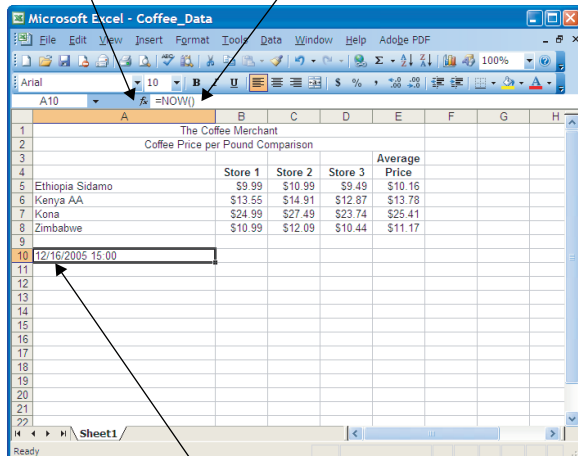
=NOW()

To use the NOW function:

1. Select the **cell** in which you want to enter the function.
2. Click the **Insert Function** button.

Click here to open the NOW dialog box.

The NOW function takes no arguments.



Results of the NOW function display here.

FIGURE T2.25

Using the NOW() Function

3. Click **NOW** from the list of **Most Recently Used** or **Date & Time** functions and click **OK**.
4. The NOW function takes no arguments.
5. Click **OK** (see Figure T2.25).

The NOW function uses the computer's system clock to determine the date and time.

Working with Charts and Graphics

CREATING A CHART USING THE CHART WIZARD

A *chart* is a visual representation of data from your workbook. Charts add a visual element to your workbook and help convey the information in a simple, easy to understand manner (see Figure T2.26). The *Chart Wizard* in Excel walks you through the steps of converting the data in your workbook into a chart.

To use the Chart Wizard:

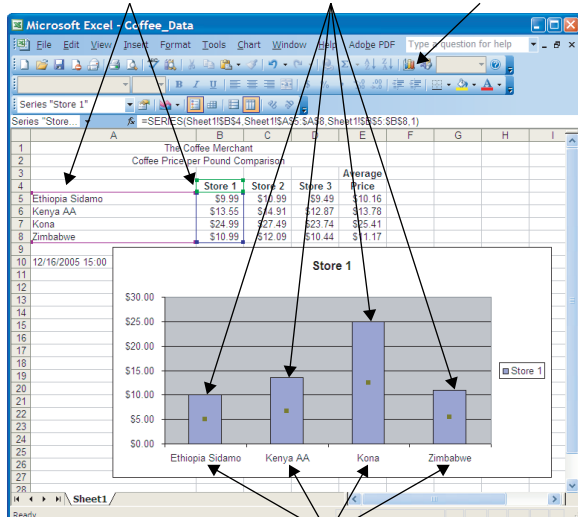
1. Select the **data** you want to display in your chart.
2. Click the **Chart Wizard** button on the Standard toolbar.
3. Select the **chart type** and click **Next**.
4. Select the **data range** for your chart and click **Next**.
5. Add or modify the chart options and click **Next**.
6. Place the **chart**, either in a new worksheet or in an existing worksheet.
7. Click the **Back** button to go back to earlier screens in the wizard and make any adjustments you want.
8. When you are satisfied with your chart, click **Finish**.

FIGURE T2.26

An Excel Chart

The wizard allows you to add titles, legends, labels, and other information to your chart. You can create a chart on its own or as part of a worksheet. To place a chart in its own worksheet, click the **As new sheet in:** option in the Chart Wizard.

Cells A5 : A8 and B4 : B8 are selected. Cells B5 : B8 display as bars in the chart. Chart Wizard Button.



Cells A5 : A8 display as bar titles.

MODIFYING CHARTS

When you modify a chart, you can change any of the options that belong to that chart type. Modifying a chart allows you to change the text of the chart and how it appears on the chart. This includes titles, legends, axes, data labels, and data tables (refer to Figure T2.27).

To change chart elements:

1. Select the **chart** you want to modify and select **Chart Options...** from the Chart menu.
 - Select the **Titles** tab to add or change the title of the chart and the titles for the axes.
 - Select the **Axes** tab to change the display of the axes for the chart.
 - Select the **Gridlines** tab to change the display of the gridlines in the chart.

- Select the **Legend** tab to change the position of the legend for the chart.
- Select the **Data Labels** tab to add or remove labels from the chart.
- Select the **Data Table** tab to show the numeric data in the chart.

- The **Preview** box shows how your chart will look. When you are satisfied with the look of your chart, click **OK**.

Excel offers many different types of charts to display your data and makes it easy to change from one chart type to another.

To change the chart type:

1. Select the **chart** you want to change.
2. Select **Chart Type...** from the Chart menu.
3. Click a **chart type** to see the different chart subtypes.
4. Click a **chart subtype** to select it.
5. Click the **Press and Hold to View Sample** button to see how your data will appear in the chart.
6. Click **OK** to change your chart.

To delete a chart, select the chart and press the **Delete** key or point to **Clear** on the Edit menu and select **All**.

MOVING A CHART

When you create a chart, Excel places the chart in the middle of the worksheet. However, the chart may be covering data that you want to view. You can move a chart by selecting it and then dragging it anywhere on the worksheet.

To move a chart by dragging:

1. Select the **chart** you want to move.
2. Click in the **chart area**.
3. With your left mouse depressed, drag the **chart** to the new location on the worksheet.
4. Release the **mouse button**.

ADDING GRAPHICS

A graphic is a drawing or illustration that can be added to your workbooks. You can add drawing objects such as AutoShapes from the Drawing toolbar. You can also insert clip art and other graphic files into your workbook. These images are embedded objects, meaning they become part of the new document.

To add a graphic to a workbook:

1. Place your **cursor** where you want the graphic to appear.
2. On the Insert menu, point to **Picture** and select an **option** (refer to Figure T2.28):
 - a. **Clip Art...** opens the Clip Art task pane, allowing you to search hundreds of clips to use in your workbook.
 - b. **From File...** allows you to insert a picture created in another program.
 - c. **From Scanner or Camera...** allows you to insert a picture directly from a scanner or digital camera.

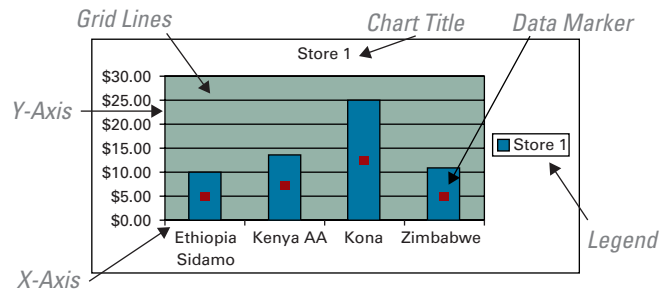
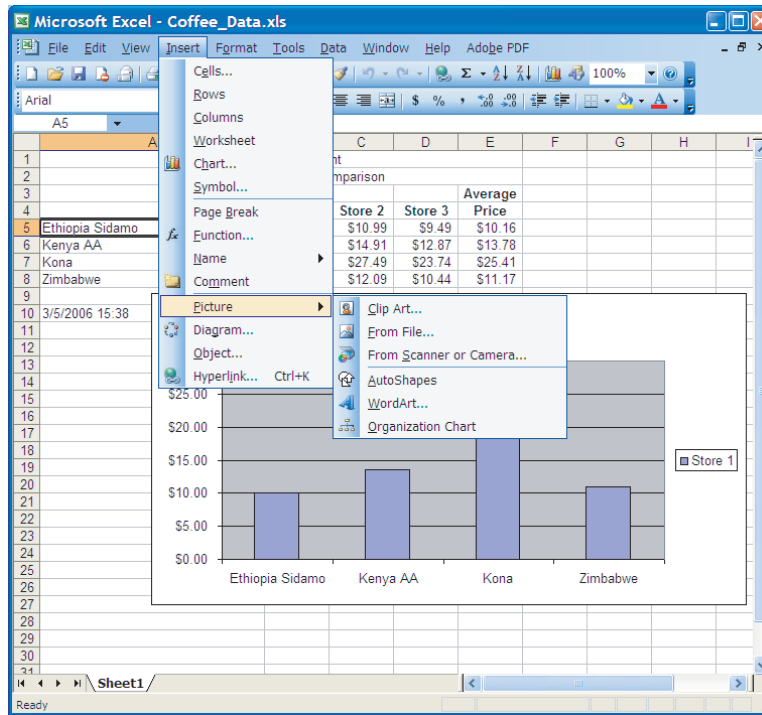


FIGURE T2.27
Modifying Charts

FIGURE T2.28
Adding Graphics



- d. **AutoShapes** inserts predefined banners, arrows, and callouts as drawing objects.
- e. **WordArt...** inserts text effects as drawing objects.
- f. **Organization Chart** inserts a flowchart that you can add text to and modify.

The Clip Art task pane allows you to search for different kinds of clips from many different sources. There are several ways to narrow your search:

- Click the **Search in:** arrow to limit the search to your files, office files, or Web files.
- Click the **Results should be:** arrow to specify the exact type of media clip to search for.
- Click the **Organize clips...** link at the bottom of the task pane to browse through specific collections and organize the clips you use most frequently.

* PLUG-IN SUMMARY

Microsoft Excel is a general-purpose electronic spreadsheet used to organize, calculate, and analyze data. The tasks you can perform with Excel range from preparing a simple invoice to managing an accounting ledger for a business.

Six areas in Excel were covered in this plug-in:

1. Workbooks and worksheets.
2. Working with cells and cell data.
3. Printing worksheets.
4. Formatting worksheets.
5. Formulas.
6. Working with charts and graphics.

* MAKING BUSINESS DECISIONS

1. Stock Watcher

Mark Martin has created a basic stock watcher worksheet that he uses to report on gains or losses from when he purchased the stock and the last recorded date and price. Mark has given you a snapshot of his spreadsheet (see Figure T2.29) that you can use to recreate this spreadsheet for yourself. Here are some basic steps to follow:

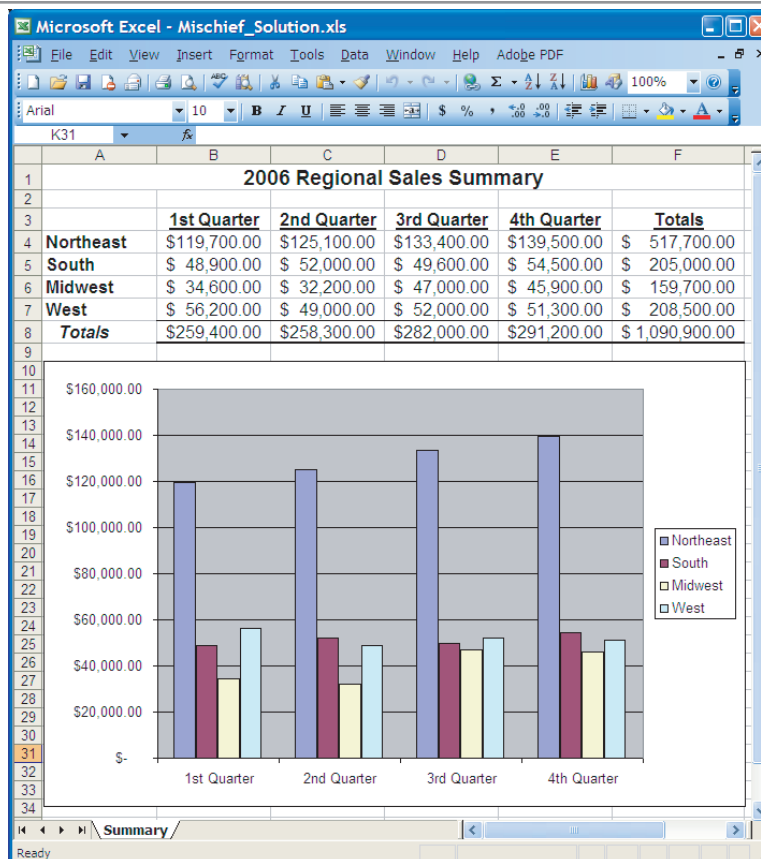
1. Create a new workbook.
2. Enter all the information provided in Figure T2.29.
3. Apply the currency format to the respective columns.
4. The date should be entered as a function. **Hint:** Use the NOW() function.
5. Enter a formula for Gain/Loss (%) column. **Hint:** You should subtract the **Last** column from the **Purchase** column, and then divide by the Purchase column.
6. Format for percent in the Gain/Loss (%) column.

Company	Ticker	Purchase	Last	Date	Gain/Loss (%)
ABC Truck Parts	abct	\$ 25.00	\$ 27.50	3/5/2006	10.0%
Tasty Juice, Inc.	juce	\$ 7.50	\$ 7.50	3/5/2006	0.0%
FastChips Memory	fchp	\$ 67.00	\$ 39.50	3/5/2006	-41.0%
Internet Celebration	webc	\$ 12.50	\$ 75.00	3/5/2006	500.0%
Bouncy Balls, Ltd	bbbb	\$ 18.00	\$ 19.50	3/5/2006	8.3%
XYZ Steel	xstl	\$ 38.00	\$ 47.00	3/5/2006	23.7%

FIGURE T2.29
Stock Watcher
Data

FIGURE T2.30

Total Mischief Spreadsheet



2. Total Mischief

Mischief, Inc., is a regional pet toy supplier that tracks its business sales in a spreadsheet. The owner, Lisa Derrick, has provided you with a skeleton worksheet, T2_TotalMischief_Data.xls, with the totals for each quarter by sales region. Lisa needs you to total each column and row, and then provide her with a clustered column chart of each region by quarter. See Figure T2.30 for a sample of what Lisa would like you to do.

3. Recycling Can

For the past 10 years, five Colorado cities have held a recycling contest to see which city does the best job of recycling plastic, glass, and aluminum. Those participating in this year's contest are Arvada, Centennial, Lakewood, Highlands Ranch, and Parker.

To make the contest fair for both large and small cities, the winning city will be the one that recycles the largest number of cans per capita—the number of cans recycled divided by the number of city residents.

You have been asked to help the coordinator, Jill Slater, to compile the numbers in an Excel worksheet and create the formulas to compute the total recycling by city each month, total recycling for all cities each month, and the per capita recycling value that determines the contest winner. In addition, Jill wants to know a few statistics about the monthly recycling efforts, including the minimum, average, and maximum number of cans recycled. Jill has provided you with sample data, T2_RecyclingCans_Data.xls. Figure T2.31 shows a sample of what Jill would like to see as a completed worksheet.

4. MusicPlayerz Sales Projections

MusicPlayerz is a wholesale MP3 distributor headquartered in Morrison, Colorado. Corporate buyers for the retail stores contract with MusicPlayerz to supply and ship MP3s to warehouses scattered throughout the western United States. MusicPlayerz chief procurement

Microsoft Excel - RecyclingCan_Solution.xls

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	A	B	C	D	E	F	G
1		0.02 per can					
2							
3							
4							
5							
6	City	Population	Jan	Feb	Mar	Total	Per Capita
7	Arvada	15,855	10,505	24,556	12,567	47,628	3.00
8	Centennial	28,951	24,567	21,777	26,719	73,063	2.52
9	Lakewood	142,547	102,376	105,876	121,987	330,239	2.32
10	Highlands Ranch	2,801,561	2,714,664	2,503,344	1,999,877	7,217,885	2.58
11	Parker	1,689,908	1,523,665	1,487,660	1,002,545	4,013,870	2.38
12	Total		4,375,777	4,143,213	3,163,695	11,682,685	
13	Minimum		10,505	21,777	12,567		
14	Average		875,155	828,643	632,739		
15	Maximum		2,714,664	2,503,344	1,999,877		
16							
17	Potential Revenue		\$ 87,516	\$ 82,864	\$ 63,274		

Recycling Contest Sheet2 Sheet3

Ready

FIGURE T2.31
Recycling Can Contest
Worksheet

officer, Julianne Beekman, oversees the purchase and distribution operations for all divisions from the Morrison office.

MusicPlayerz also maintains a small Web site from which it sells to consumers. While the online store is not a large part of the revenue stream, it is an essential and growing part of MusicPlayerz's business. Julianne developed a sales report for the coming year, using the previous year's figures as the basis of the projection. Julianne wants to investigate sales predictions based on the assumption that next year's wholesale sales will increase by 10 percent for each product included in the projection.

Julianne has asked you to complete the worksheet she has provided you, T2_MusicPlayerz_Data.xls, for her presentation at the annual board meeting next month. You will have to calculate the following:

- Projected 2007 sales (this is 10 percent more than 2006 figures)
- Gross sales (this is the projected 2007 sales times the price)
- Profit
- Percent of sales.

Figure T2.32a shows a sample of what Julianne would like to see as a completed worksheet.

Microsoft Excel - MusicPlayerz_Solution.xls

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	A	B	C	D	E	F	G	H
1								
2								
3								
4	Fruit	Cost	Price	Actual 2006 Sales	Projected 2007 Sales	Gross Sales	Profit	% of Sales
5	Creative Zen Nano	\$ 59.00	\$ 69.99	121,000	133,100	\$ 9,315,669	\$ 1,462,769	8.8%
6	Apple iPod Shuffle 512MB	52.99	69.99	159,200	175,120	12,256,649	2,977,040	17.9%
7	Sandisk e140 Series 1GB	74.99	89.99	98,000	107,800	9,700,922	1,617,000	9.7%
8	Sony Walkman Bean 512MB	74.99	89.99	100,700	110,770	9,968,192	1,661,550	10.0%
9	iRiver Jukebox w/Color Display 512MB	82.99	99.99	97,067	106,774	10,676,302	1,815,153	10.9%
10	Apple iPod nano 1GB	131.99	149.99	197,000	216,700	32,502,833	3,900,600	23.5%
11	Creative Labs Zen Micro 6GB	177.99	189.99	101,970	112,167	21,310,608	1,346,004	8.1%
12	Toshiba Silver 20GB	181.99	199.99	92,000	101,200	20,238,988	1,821,600	11.0%
13	Totals			966,937	1,063,631	\$ 125,970,164	\$ 16,601,716	100.0%
14								
15								
16								

Projected Sales

Ready

FIGURE T2.32
MusicPlayerz Sales
Projection Worksheet