

Step-by-Step Tasks in Full Color

Includes

- Workshops ▶
- MCAS Exam Prep ▶
- More than 500
Essential Excel Tasks ▶

Microsoft®

Excel® 2010

.....on Demand

What you need, when you need it!

que

Steve Johnson, Perspection, Inc.

Microsoft® Excel 2010 On Demand

Copyright © 2010 by Perspection, Inc.

All rights reserved. No part of this book shall be reproduced, stored in a retrieval system, or transmitted by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from the publisher. No patent liability is assumed with respect to the use of the information contained herein. Although every precaution has been taken in the preparation of this book, the publisher and author assume no responsibility for errors or omissions. Nor is any liability assumed for damages resulting from the use of the information contained herein.

Library of Congress Cataloging-in-Publication Data is on file

ISBN-13: 978-0-7897-4277-3

ISBN-10: 0-7897-4277-2

Printed and bound in the United States of America

First Printing: June 2010

13 12 11 10 4 3 2 1

Que Publishing offers excellent discounts on this book when ordered in quantity for bulk purchases or special sales.

For information, please contact: U.S. Corporate and Government Sales
1-800-382-3419 or corpsales@pearsontechgroup.com

For sales outside the U.S., please contact: International Sales
1-317-428-3341 or International@pearsontechgroup.com

Trademarks

All terms mentioned in this book that are known to be trademarks or service marks have been appropriately capitalized. Que cannot attest to the accuracy of this information. Use of a term in this book should not be regarded as affecting the validity of any trademark or service mark.

Microsoft and the Microsoft Office logo are registered trademarks of Microsoft Corporation in the United States and/or other countries.

Warning and Disclaimer

Every effort has been made to make this book as complete and as accurate as possible, but no warranty or fitness is implied. The authors and the publishers shall have neither liability nor responsibility to any person or entity with respect to any loss or damage arising from the information contained in this book.

Publisher

Paul Boger

Associate Publisher

Greg Wiegand

Acquisitions Editor

Loretta Yates

Managing Editor

Steve Johnson

Author

Steve Johnson

Technical Editor

Beth Teyler

Page Layout

James Teyler

Interior Designers

Steve Johnson

Marian Hartsough

Photographs

Tracy Teyler

Indexer

Katherine Stimson

Proofreader

Beth Teyler

Team Coordinator

Cindy Teeters

Contents

<i>Introduction</i>	<i>xvii</i>
1 Getting Started with Excel	1
Starting Excel	2 New!
Viewing the Excel Window	3
Using the Ribbon	4 New!
Choosing Commands	5 New!
Working with Toolbars	6 New!
Choosing Dialog Box Options	8
Using the Status Bar	9
Creating a Blank Workbook	10
Creating a Workbook Using a Template	11
Opening an Existing Workbook	12
Converting an Existing Workbook	14
Using Task and Window Panes	15
Moving Around the Workbook	16
Arranging Windows	18
Getting Help While You Work	20
Saving a Workbook	22
Saving a Workbook with Different Formats	24
Checking Compatibility	26
Checking Accessibility	27 New!
Documenting Workbook Properties	28
Switching Views	29
Recovering a Workbook	30 New!
Maintaining and Repairing Office	32
Getting Updates on the Web	33
Closing a Workbook and Quitting Excel	34
2 Basic Workbook Skills	35
Making Label Entries	36
Selecting Cells	37
Selecting Rows, Columns, and Special Ranges	38

Entering Labels on a Worksheet	40
Entering Values on a Worksheet	42
Entering Values Quickly with AutoFill	44
Editing Cell Contents	46
Clearing Cell Contents	47
Understanding How Excel Pastes Data	48
Storing Cell Contents	49
Copying Cell Contents	50 New!
Moving Cell Contents	52 New!
Inserting and Deleting Cell Contents	54
Finding and Replacing Cell Contents	56
Correcting Cell Contents with AutoCorrect	58 New!
Inserting Information the Smart Way	60 New!
Checking Spelling	62
Changing Proofing Options	63
Using Custom Dictionaries	64
Inserting Symbols	66
Finding the Right Words	67
Inserting Research Material	68
Translating Text to Another Language	69
Undoing and Redoing an Action	70

3 Working with Formulas and Functions **71**

Understanding Formulas	72
Creating a Simple Formula	74
Creating a Formula Using Formula AutoComplete	76
Editing a Formula	78 New!
Understanding Cell Referencing	80
Using Absolute Cell References	81
Using Mixed Cell References	82
Using 3-D Cell References	83
Naming Cells and Ranges	84
Entering Named Cells and Ranges	86
Managing Names	88
Simplifying a Formula with Ranges	90
Displaying Calculations with the Status Bar	91
Calculating Totals with AutoSum	92
Performing One Time Calculations	94
Converting Formulas and Values	96
Correcting Calculation Errors	97
Correcting Formulas	98

Auditing a Worksheet	100
Locating Circular References	101
Performing Calculations Using Functions	102
Creating Functions	103
Creating Functions Using the Library	104 New!
Calculating Multiple Results	105
Using Nested Functions	106
Using Constants and Functions in Names	108

4 **Modifying Worksheets and Workbooks** **109**

Selecting and Naming a Worksheet	110
Inserting and Deleting a Worksheet	111
Moving and Copying a Worksheet	112
Hiding and Unhiding Worksheets and Workbooks	114
Selecting a Column or Row	116
Hiding and Unhiding a Column or Row	117
Inserting a Column or Row	118
Deleting a Column or Row	119
Adjusting Column Width and Row Height	120
Freezing and Unfreezing a Column or Row	122
Splitting a Worksheet into Panes	123
Showing and Hiding Workbook Elements	124
Zooming the View In and Out	125
Creating Custom Views	126
Saving a Workspace Layout	127
Creating a Template	128
Opening a Template	129
Changing a Template	130

5 **Formatting a Worksheet** **131**

Formatting Numbers	132
Formatting Text	134
Applying Conditional Formatting	136
Applying Specialized Conditional Formatting	138
Creating Conditional Formatting	140
Clearing Conditional Formatting	141
Managing Conditional Formatting	142
Finding Conditional Formatting	143
Creating Sparkline Formatting	144 New!
Changing Data Alignment	146
Controlling Text Flow	148

Changing Data Color	149
Adding Color and Patterns to Cells	150
Adding Custom Colors	151
Adding Borders to Cells	152
Formatting Tabs and Background	154
Copying Cell Formats	155
Understanding Color Themes	156
Viewing and Applying a Theme	157 New!
Creating Theme Colors	158
Choosing Theme Fonts	160
Choosing Theme Effects	162
Creating a Custom Theme	163
Choosing a Custom Theme	164
Applying and Creating Cell Styles	166
Modifying a Cell Style	168
Finding and Replacing Cell Formatting	170

6 Viewing and Printing Worksheets and Workbooks 171

Setting Up the Page	172
Adjusting Page Margins	174
Adding Headers and Footers	176
Inserting Page Breaks	178
Customizing Worksheet Printing	180
Setting the Print Area	182
Previewing a Worksheet	183 New!
Printing a Worksheet and Workbook	184 New!
Creating a PDF Document	185
Creating an XPS Document	186

7 Inserting and Modifying Graphics 187

Locating and Inserting Clip Art	188 New!
Inserting Media Clips	189
Accessing Clip Art on the Web	190
Organizing Clips into Categories	192
Adding and Removing Clips	194
Inserting a Picture	195
Inserting a Picture Screen Shot	196 New!
Adding an Artistic Style to a Picture	197 New!
Adding a Quick Style to a Picture	198
Applying a Shape to a Picture	199 New!
Applying a Border to a Picture	200

Applying Picture Effects	201
Modifying Picture Size	202
Compressing a Picture	204 New!
Correcting a Picture	205 New!
Recoloring a Picture	206 New!
Cropping and Rotating a Picture	208 New!
Removing a Picture Background	210 New!
Creating WordArt Text	211
Formatting WordArt Text	212
Applying WordArt Text Effects	214
Modifying WordArt Text Position	215
Creating SmartArt Graphics	216 New!
Using the Text Pane with SmartArt Graphics	218
Modifying a SmartArt Graphic	220
Resizing a SmartArt Graphic	221
Formatting a SmartArt Graphic	222
Formatting a Shape in a SmartArt Graphic	224
Adding Pictures to a SmartArt Graphic	226 New!
Creating an Organization Chart	227
Modifying an Organization Chart	228

8

Drawing and Modifying Shapes

229

Drawing and Resizing Shapes	230
Inserting Multiple Shapes	232
Adding Text to a Shape	233
Drawing Lines and Arrows	234
Creating and Editing Freeforms	236
Copying and Moving Objects	237 New!
Adding a Quick Style to a Shape	238
Adding a Quick Style to Shape Text	239
Applying Color Fills	240
Applying Picture Fills	242
Applying Texture Fills	243
Applying Gradient Fills	244 New!
Applying Shape Effects	246
Adding 3-D Effects to a Shape	248
Adding 3-D Rotation Effects to a Shape	250
Creating Shadows	251
Aligning and Distributing Objects	252
Connecting Shapes	254

Selecting Objects Using the Selection Pane	255
Changing Stacking Order	256
Rotating and Flipping a Shape	257
Grouping and Ungrouping Shapes	258
Adding a Shape to the Clip Organizer	260

9 Creating and Modifying Charts 261

Understanding Chart Terminology	262
Choosing the Right Type of Chart	263
Creating a Chart	264
Editing a Chart	266
Moving and Resizing a Chart	268
Selecting Chart Elements	269
Changing a Chart Type	270
Changing a Chart Layout and Style	272 New!
Formatting Chart Elements	274 New!
Changing Chart Gridlines and Axes	276
Changing Chart Titles	278
Changing Chart Labels	280
Pulling Out a Pie Slice	282
Formatting Chart Data Series	283
Formatting Chart Text	284
Formatting Line and Bar Charts	285
Changing the Chart Background	286
Enhancing a Chart	287
Editing Chart Data	288 New!
Adding and Deleting a Data Series	290
Saving a Chart Template	292
Managing Chart Templates	294

10 Analyzing Worksheet Data 295

Understanding Tables	296
Creating a Table	297
Formatting a Table	298
Creating or Modifying a Table Style	299
Formatting Table Elements	300
Creating Calculations in a Table	301
Working with Tables	302
Removing Table Rows and Columns	304
Entering Data in a Table Using a Drop-Down List	305
Sorting Data in a Table	306

Displaying Parts of a Table with AutoFilter	308	New!
Creating Custom Searches	309	
Analyzing Data Using a PivotTable or PivotChart	310	
Updating a PivotTable or PivotChart	311	
Modifying a PivotTable	312	New!
Formatting a PivotTable	313	
Working with PivotTable Data	314	New!
Using Slicers to Filter a PivotTable	316	New!
Charting a PivotTable	318	New!
Creating Groups and Outlines	320	
Converting Text to Columns	321	
Adding Data Validation to a Worksheet	322	
Creating a Drop-Down List	323	
Exporting a Table to a SharePoint List	324	

11 Building More Powerful Worksheets **325**

Using Data Analysis Tools	326	
Using the Euro Conversion	327	
Looking at Alternatives with Data Tables	328	
Asking “What If” with Goal Seek	329	
Creating Scenarios	330	
Using Solver	332	New!
Using Lookup and Reference Functions	334	
Using Text Functions	336	
Summarizing Data Using Subtotals	337	
Summarizing Data Using Functions	338	
Using Date & Time Functions	340	
Using Logical Functions	342	
Using Financial Functions	343	
Using Math Functions	344	
Using Statistical Functions	345	New!
Using Information Functions	346	
Using Compatibility Functions	347	New!

12 Protecting and Securing a Workbook **349**

Inspecting Workbooks	350	
Protecting a Worksheet	352	
Locking and Unlocking Worksheet Cells	354	
Adding Security Encryption to a Workbook	355	
Adding Password Protection to a Workbook	356	
Adding a Digital Signature	358	

Adding a Signature Line	360
Avoiding Harmful Attacks	362
Using the Trust Center	364 New!
Selecting Trusted Publishers and Locations	365
Setting Document Related Security Options	366 New!
Setting Add-in Security Options	368
Setting ActiveX Security Options	369
Setting Macro Security Options	370
Changing Message Bar Security Options	371
Setting Privacy Options	372
Setting External Content Security Options	374
Working with Office Safe Modes	376
Marking a Workbook as Read-Only	378

13 **Reviewing and Sharing Workbook Data** **379**

Sharing Workbooks	380
Creating and Reading a Cell Comment	382
Editing and Deleting a Cell Comment	383
Tracking Changes	384
Sending a Workbook for Review Using E-Mail	386
Sending a Workbook by Internet Fax	387
Working with XML	388 New!
Creating an XML Data Map	390
Exporting and Saving Data in XML	392
Sharing Information Between Programs	394
Exporting and Importing Data	396 New!
Linking and Embedding Files	398 New!
Consolidating Data	400
Linking Data	402
Getting External Data	403
Managing Connections	404
Getting Query Data from a Database	406
Getting Data from Microsoft Access	408
Getting Text Data	410

14 **Publishing Data on the Web** **411**

Opening a Workbook as a Web Page	412
Previewing a Web Page	413
Creating a Hyperlink	414
Formatting a Hyperlink	416
Changing Web Page Options	417

Saving a Worksheet as a Web Page	418
Publishing a Web Page	420
Copying a Web Table to a Worksheet	421
Creating Refreshable Web Queries	422
Getting Data from Web Queries	423
Saving Web Queries	424
Accessing Office Information on the Web	425
Getting Documents from the Web	426

15 Tools for Working More Efficiently 427

Getting General Excel Options	428
Setting New Workbook Options	429
Setting Editing Options	430 New!
Setting Image and Chart Options	432 New!
Setting Display View Options	433 New!
Setting Workbook and Worksheet Display Options	434 New!
Setting Advanced Options	436 New!
Setting Formula Options	437
Changing Advanced Document Properties	438
Changing Research Options	439
Customizing the Way You Create Objects	440
Accessing Commands Not in the Ribbon	441
Managing Pictures	442
Using Multiple Languages	444 New!

16 Expanding Excel Functionality 445

Viewing and Managing Add-ins	446
Loading and Unloading Add-ins	448
Enhancing a Workbook with VBA	450
Viewing the Visual Basic Editor	452
Setting Developer Options	453
Understanding How Macros Automate Your Work	454
Recording a Macro	455 New!
Creating a Macro	456
Running a Macro	457
Controlling a Macro	458
Adding a Digital Signature to a Macro Project	460
Assigning a Macro to a Toolbar	461
Saving a Workbook with Macros	462
Opening a Workbook with Macros	463
Inserting ActiveX Controls	464

Using ActiveX Controls	466
Setting ActiveX Control Properties	467
Adding VBA Code to an ActiveX Control	468
Playing a Movie Using an ActiveX Control	469
Changing the Document Information Panel	470

17 Working Together on Office Documents **471**

Getting Started with Office Web Apps	472	New!
Setting Up to Use Office Web Apps	474	New!
Saving and Opening Documents with Windows Live	476	New!
Comparing the Desktop App to Web App	478	New!
Accessing Documents on Windows Live	480	New!
Working with Folders on Windows Live	482	
Setting Folder Permissions on Windows Live	484	
Creating Office Documents on Windows Live	485	New!
Working with Documents on Windows Live	486	
Downloading Documents from Windows Live	488	
Downloading or Saving Documents in Office Web Apps	490	New!
Collaborating with Documents on Windows Live	492	New!
Working with SharePoint Workspaces	494	New!
Sharing Documents in a Groove Workspace	496	New!
Inviting Others to a Groove Workspace	497	New!
Saving a Document to a SharePoint Server	498	New!
Using Office Mobile 2010	500	New!

W Workshops: Putting It All Together **501**

Project 1: Creating a Drop-Down List	501
Project 2: Adding a Form Control	503
Project 3: Adding Conditional Formatting	504
Project 4: Creating a VBA Script	506
Project 5: Creating a VBA Interface	508
Want More Projects	513

<i>New Features</i>	515	New!
<i>Microsoft Certified Applications Specialist</i>	521	
<i>Index</i>	529	

Introduction

Welcome to *Microsoft Excel 2010 On Demand*, a visual quick reference book that shows you how to work efficiently with Microsoft Excel. This book provides complete coverage of basic to advanced Excel skills.

How This Book Works

You don't have to read this book in any particular order. We've designed the book so that you can jump in, get the information you need, and jump out. However, the book does follow a logical progression from simple tasks to more complex ones. Each task is presented on no more than two facing pages, which lets you focus on a single task without having to turn the page. To find the information that you need, just look up the task in the table of contents or index, and turn to the page listed. Read the task introduction, follow the step-by-step instructions in the left column along with screen illustrations in the right column, and you're done.

What's New

If you're searching for what's new in Excel 2010, just look for the icon: **New!**. The new icon appears in the table of contents and throughout this book so you can quickly and easily identify a new or improved feature in Excel 2010. A complete description of each new feature appears in the New Features guide in the back of this book.

Keyboard Shortcuts

Most menu commands have a keyboard equivalent, such as Ctrl+P, as a quicker alternative to using the mouse. A complete list of keyboard shortcuts is available on the Web at www.perspection.com.



How You'll Learn

How This Book Works

What's New

Keyboard Shortcuts

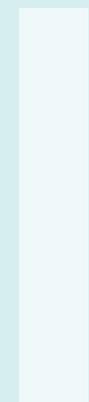
Step-by-Step Instructions

Real World Examples

Workshops

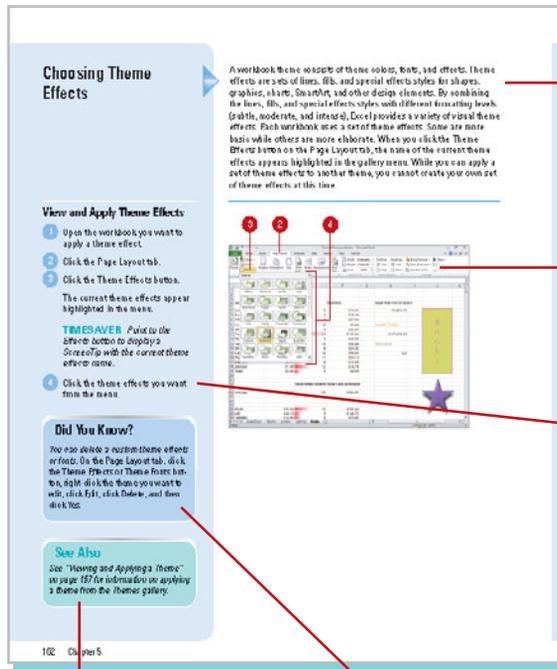
Microsoft Certified Applications Specialist

Get More on the Web



Step-by-Step Instructions

This book provides concise step-by-step instructions that show you “how” to accomplish a task. Each set of instructions includes illustrations that directly correspond to the easy-to-read steps. Also included in the text are time-savers, tables, and sidebars to help you work more efficiently or to teach you more in-depth information. A “Did You Know?” provides tips and techniques to help you work smarter, while a “See Also” leads you to other parts of the book containing related information about the task.



Easy-to-follow introductions focus on a single concept.

Illustrations match the numbered steps.

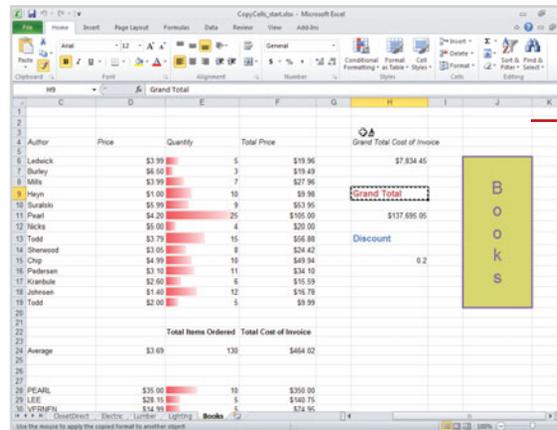
Numbered steps guide you through each task.

See Also points you to related information in the book.

Did You Know? alerts you to tips, techniques and related information.

Real World Examples

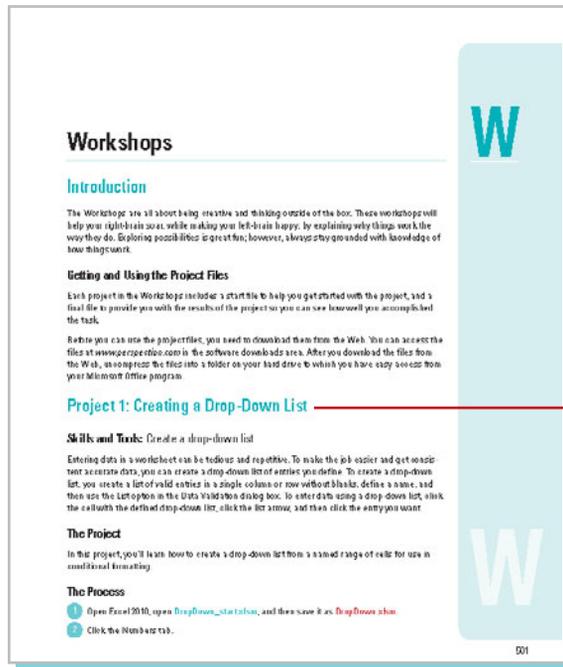
This book uses real world examples files to give you a context in which to use the task. By using the example files, you won't waste time looking for or creating sample files. You get a start file and a result file, so you can compare your work. Not every topic needs an example file, such as changing options, so we provide a complete list of the example files used throughout the book. The example files that you need for project tasks along with a complete file list are available on the Web at www.perspection.com.



Real world examples help you apply what you've learned to other tasks.

Workshops

This book shows you how to put together the individual step-by-step tasks into in-depth projects with the Workshops. You start each project with a sample file, work through the steps, and then compare your results with a project results file at the end. The Workshop projects and associated files are available on the Web at www.perspection.com.



The Workshops walks you through in-depth projects to help you put Microsoft Excel to work.

Microsoft Certified Applications Specialist

This book prepares you for the Microsoft Certified Applications Specialist (MCAS) exam for Microsoft Excel 2010 program. Each MCAS certification exam has a set of objectives, which are organized into broader skill sets. To prepare for the certification exam, you should review and perform each task identified with a MCAS objective to confirm that you can meet the requirements for the exam. Information about the MCAS program is available in the back of this book. The MCAS objectives and the specific pages that cover them are available on the Web at www.perspection.com.



Logo indicates a task fulfills one or more MCAS certification objectives.

Get More on the Web

In addition to the information in this book, you can also get more information on the Web to help you get up to speed faster with Excel 2010. Some of the information includes:

Transition Helpers

- ◆ **Only New Features.** Download and print the new feature tasks as a quick and easy guide.

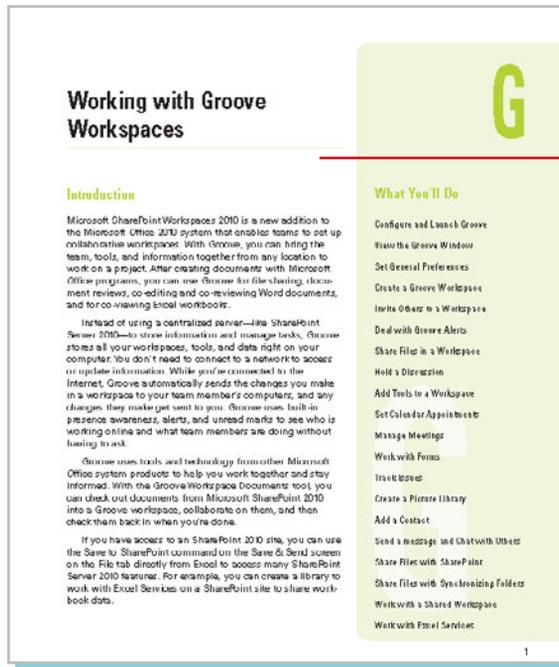
Productivity Tools

- ◆ **Keyboard Shortcuts.** Download a list of keyboard shortcuts to learn faster ways to get the job done.

More Content

- ◆ **Photographs.** Download photographs and other graphics to use in your Office documents.
- ◆ **More Content.** Download new content developed after publication. For example, you can download a complete chapter on Groove or SharePoint Workspaces.

You can access these additional resources on the Web at www.perspection.com.



Additional content is available on the Web. You can download a chapter on Groove or SharePoint workspaces.

Working with Formulas and Functions

Introduction

Once you enter data in a worksheet, you'll want to add formulas to perform calculations. Microsoft Excel can help you get the results you need. Formulas can be very basic entries to more complex ones. The difficulty of the formula depends on the complexity of the result you want from your data. For instance, if you are simply looking to total this month's sales, then the formula would add your sales number and provide the result. However, if you were looking to show this month's sales, greater than \$100.00 with repeat customers, you would take a bit more time to design the formula.

Because Microsoft Excel automatically recalculates formulas, your worksheets remain accurate and up-to-date no matter how often you change the data. Using absolute cell references anchors formulas to a specific cell. Excel provides numerous built-in functions to add to your worksheet calculations. Functions, such as AVERAGE or SUM, allow you to perform a quick formula calculation.

Another way to make your formulas easier to understand is by using name ranges in them. Name ranges—a group of selected cells named as a range—can help you understand your more complicated formulas. It is a lot easier to read a formula that uses name ranges, then to look at the formula and try to decipher it. Excel offers a tool to audit your worksheet. Looking at the “flow” of your formula greatly reduces errors in the calculation. You can see how your formula is built, one level at a time through a series of arrows that point out where the formula is pulling data from. As you develop your formula, you can make corrections to it.

What You'll Do

Understand Formulas

Create and Edit Formulas

Understand Cell Referencing

Use Absolute Cell References

Use Mixed and 3-D Cell References

Name Cells and Ranges

Enter and Manage Names

Simplify a Formula with Ranges

Display Calculations with the Status Bar

Calculate Totals with AutoSum

Perform One Time Calculations

Convert Formulas and Values

Correct Calculation Errors

Correct Formulas

Audit a Worksheet

Locate Circular References

Perform Calculations Using Functions

Create Functions and Nested Functions

Calculate Multiple Results

Use Constants and Functions in Names

Understanding Formulas

Introduction

A formula calculates values to return a result. On an Excel worksheet, you can create a formula using constant values (such as 147 or \$10.00), operators (shown in the table), references, and functions. An Excel formula always begins with the equal sign (=).

A **constant** is a number or text value that is not calculated, such as the number 147, the text "Total Profits", and the date 7/22/2010. On the other hand, an **expression** is a value that is not a constant. Constants remain the same until you or the system change them. An **operator** performs a calculation, such as + (plus sign) or - (minus sign). A cell **reference** is a cell address that returns the value in a cell. For example, A1 (column A and row 1) returns the value in cell A1 (see table below).

Cell Reference Examples

Reference	Meaning
A1	Cell in column A and row 1
A1:A10	Range of cells in column A and rows 1 through 10
A1:F1	Range of cells in row 1 and columns A through F
1:1	All cells in row 1
1:5	All cells in rows 5 through 10
A:A	All cells in column A
A:F	All cells in columns A through F
Profits!A1:A10	Range of cells in column A and rows 1 through 10 in worksheet named Profits

A **function** performs predefined calculations using specific values, called arguments. For example, the function SUM(B1:B10) returns the sum of cells B1 through B10. An

argument can be numbers, text, logical values such as TRUE or FALSE, arrays, error values such as #NA, or cell references. Arguments can also be constants, formulas, or other functions, known as **nested functions**. A function starts with the equal sign (=), followed by the function name, an opening parenthesis, the arguments for the function separated by commas, and a closing parenthesis. For example, the function, AVERAGE(A1:A10, B1:B10), returns a number with the average for the contents of cells A1 through A10 and B1 through B10. As you type a function, a ToolTip appears with the structure and arguments needed to complete the function. You can also use the Insert Function dialog box to help you add a function to a formula.

Perform Calculations

By default, every time you make a change to a value, formula, or name, Excel performs a calculation. To change the way Excel performs calculations, click the Formulas tab, click the Calculation Options button, and then click the option you want: Automatic, Automatic Except Data Tables, or Manual. To manually recalculate all open workbooks, click the Calculate Now button (or press F9). To recalculate the active worksheet, click the Calculate Sheet button (or press Shift+F9).

Precedence Order

Formulas perform calculations from left to right, according to a specific order for each operator. Formulas containing more than one operator follow precedence order: exponentiation, multiplication and division, and then addition and subtraction. So, in the formula $2 + 5 * 7$, Excel performs multiplication first and addition next for a result of 37. Excel calculates operations within parentheses first. The result of the formula $(2 + 5) * 7$ is 49.

Types of Operators

Operator	Meaning	Example
Arithmetic		
= (plus sign)	Addition	2+7
- (minus sign)	Subtraction Negative	7-2 -2
* (asterisk)	Multiplication	2*7
/ (forward slash)	Division	7/2
% (percent)	Percent	70%
^ (caret)	Exponentiation	2^7
Comparison		
= (equal sign)	Equal to	A2=B7
> (greater than sign)	Greater than	A2>B7
< (less than sign)	Less than	A2<B7
>= (greater than or equal to sign)	Greater than or equal to	A2>=B7
<= (less than or equal to sign)	Less than or equal to	A2<=B7
<> (not equal to sign)	Not equal to	A2<>B7
Text concatenation		
& (ampersand)	Connects, or concatenates, two values to produce one continuous text value	"Total"&"Profit"
Reference		
: (colon)	Range operator, which produces one reference to all the cells between two references	A1:A10
, (comma)	Union operator, which combines multiple references into one reference	SUM(A1:A10,B1:B10)
(space)	Intersection operator, which produces one reference to cells common to the two references	A1:A10 B1:B10

Creating a Simple Formula

Enter a Formula

- 1 Click the cell where you want to enter a formula.
- 2 Type = (an equal sign). If you do not begin with an equal sign, Excel will display, not calculate, the information you type.
- 3 Enter the first argument. An argument can be a number or a cell reference.

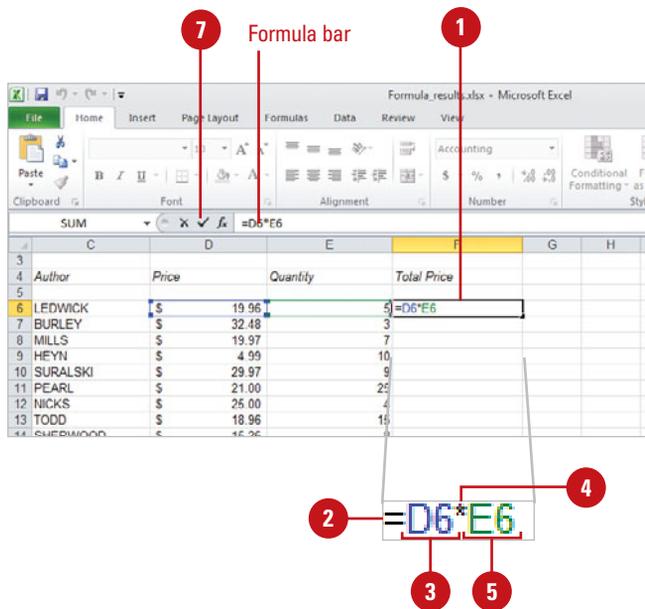
TIMESAVER To avoid typing mistakes, click a cell to insert its cell reference in a formula rather than typing its address.

- 4 Enter an arithmetic operator.
- 5 Enter the next argument.
- 6 Repeat steps 4 and 5 as needed to complete the formula.
- 7 Click the **Enter** button on the formula bar, or press Enter.

Notice that the result of the formula appears in the cell (if you select the cell, the formula itself appears on the formula bar).

TIMESAVER To wrap text in a cell, press **Alt+Enter**, which manually inserts a line break.

A **formula** calculates values to return a result. On an Excel worksheet, you can create a formula using values (such as 147 or \$10.00), arithmetic operators (shown in the table), and cell references. An Excel formula always begins with the equal sign (=). The equal sign, when entered, automatically formats the cell as a formula entry. The best way to start a formula is to have an argument. An **argument** is the cell references or values in a formula that contribute to the result. Each function uses function-specific arguments, which may include numeric values, text values, cell references, ranges of cells, and so on. To accommodate long, complex formulas, you can resize the formula bar to prevent formulas from covering other data in your worksheet. By default, only formula results are displayed in a cell, but you can change the view of the worksheet to display formulas instead of results.



For Your Information

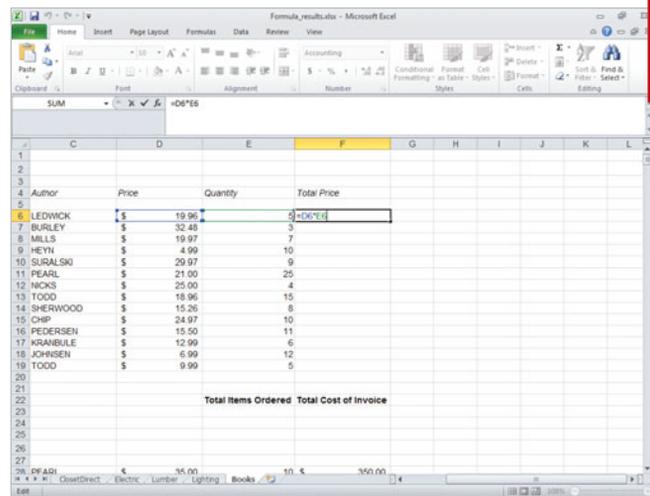
Understanding Order of Precedence

Formulas containing more than one operator follow the order of precedence: exponentiation, multiplication and division, and then addition and subtraction. So, in the formula $5 + 2 * 3$, Excel performs multiplication first and addition next for a result of 11. Excel calculates operations within parentheses first. The result of the formula $(5 + 2) * 3$ is 21.

Resize the Formula Bar

- ◆ To switch between expanding the formula box to three or more lines or collapsing it to one line, click the double-down arrow at the end of the formula bar. You can also press Ctrl+Shift+U.
- ◆ To precisely adjust the height of the formula box, point to the bottom of the formula box until the pointer changes to a vertical double arrow, and then drag up or down, and then click the vertical double arrow or press Enter.
- ◆ To automatically fit the formula box to the number of lines of text in the active cell, point to the formula box until the pointer changes to a vertical double arrow, and then double-click the vertical arrow.

Double-down arrow



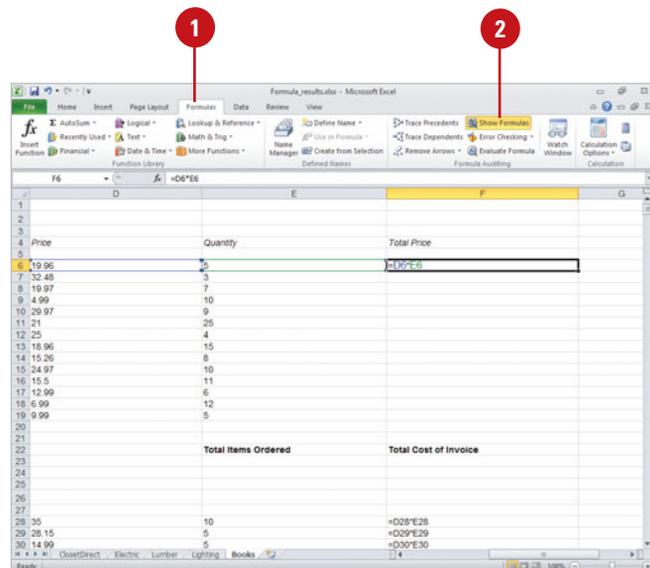
Display Formulas in Cells

- 1 Click the **Formulas** tab.
 - 2 Click the **Show Formulas** button.
- TIMESAVER** Press Ctrl+='.
- 3 To turn off formula display, click the **Show Formulas** button again.

Did You Know?

Pointing to cells reduces errors. When building formulas, pointing to a cell rather than typing its address ensures that the correct cell is referenced.

You can print formulas. Click the Formulas tab, click the Show Formulas button to show formulas, click the File tab, click Print, and then click Print.



Creating a Formula Using Formula AutoComplete

Enter Items in a Formula Using Formula AutoComplete

- 1 Click the cell where you want to enter a formula.
- 2 Type = (an equal sign), and beginning letters or a display trigger to start Formula AutoComplete.

For example, type *su* to display all value items, such as SUBTOTAL and SUM.

The text before the insertion point is used to display the values in the drop-down list.

- 3 As you type, a drop-down scrollable list of valid items is displayed.

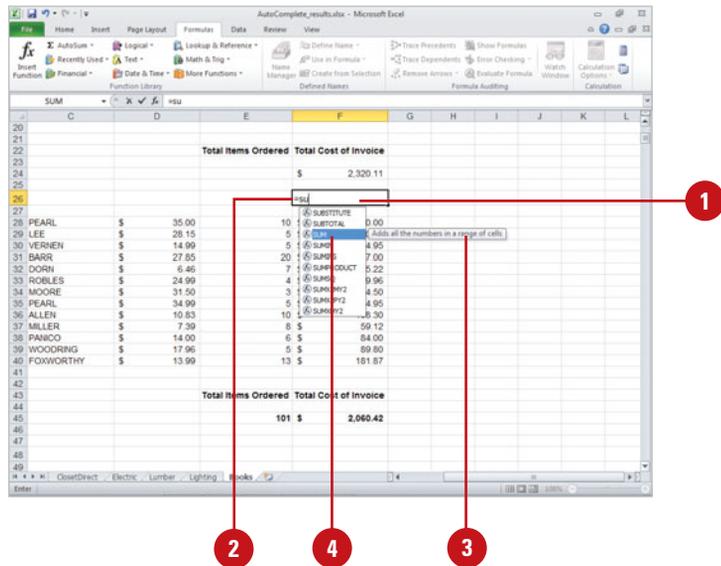
Icons represent the type of entry, such as a function or table reference, and a ScreenTip appears next to a selected item.

- 4 To insert the selected item in the drop-down list into the formula, press Tab or double-click the item.

Did You Know?

You can turn on Formula AutoComplete. Click the File tab, click Options, click Formulas in the left pane, select the Formula AutoComplete check box, and then click OK.

To minimize typing and syntax errors, you can create and edit formulas with Formula AutoComplete. After you type an = (equal sign) and begin typing to start a formula, Excel displays a dynamic drop-down list of valid functions, arguments, defined names, table names, special item specifiers—including [(open bracket), , (comma), : (colon)—and text string that match the letters you type. An argument is the cell references or values in a formula that contribute to the result. Each function uses function-specific arguments, which may include numeric values, text values, cell references, ranges of cells, and so on.



Use the Keyboard to Navigate

Using the keyboard, you can navigate the Formula AutoComplete drop-down list to quickly find the entry you want.

- ◆ Refer to the table for keyboard shortcuts for navigating the Formula AutoComplete drop-down list.

Keys For Navigating AutoComplete List

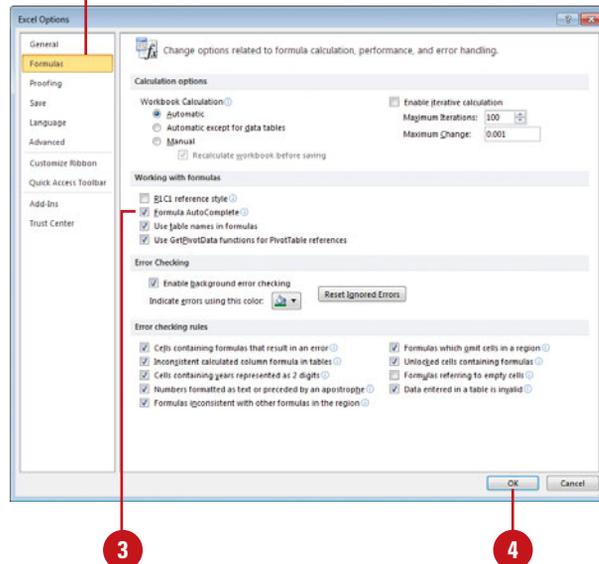
Press This Key	To Move
Left arrow	Move the insertion point to the left
Right arrow	Move the insertion point to the right
Up arrow	Move the selection up one item
Down arrow	Move the selection down one item
End	Select the last item
Home	Select the first item
Page Down	Move down one page and select a new item
Page Up	Move up one page and select a new item
Esc	Close the drop-down list
Alt+Down arrow	Turn on or off Formula AutoComplete

Turn on Formula AutoComplete

- 1 Click the **File** tab, and then click **Options**.
- 2 In the left pane, click **Formulas**.
- 3 Select the **Formula AutoComplete** check box.
- 4 Click **OK**.

Did You Know?

Some items don't appear on the Formula AutoComplete drop-down list. Defined names that you create for enumerated constants, such as the ones used in the SUBTOTAL function, and Cube function connections do not appear in the Formula AutoComplete drop-down list, but you can still type them.

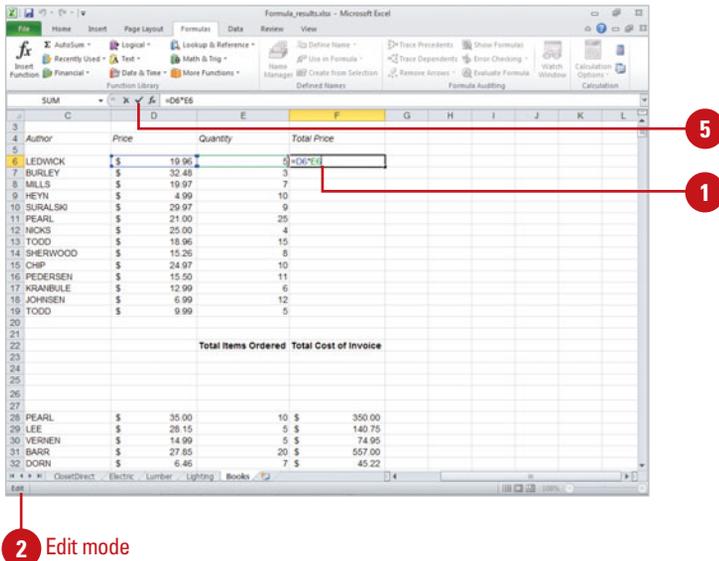


Editing a Formula

Edit a Formula Using the Formula Bar

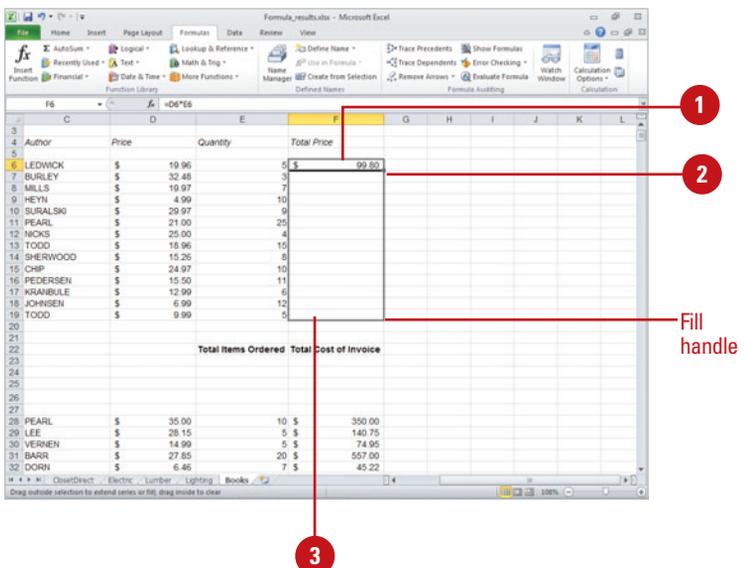
- 1 Select the cell that contains the formula you want to edit.
- 2 Press F2 to change to Edit mode.
- 3 If necessary, use the Home, End, and arrow keys to position the insertion point within the cell contents.
- 4 Use any combination of Backspace and Delete to erase unwanted characters, and then type new characters as needed.
- 5 Click the **Enter** button on the formula bar, or press Enter.

You can edit formulas just as you do other cell contents, using the formula bar or working in the cell. You can select, cut, copy, paste, delete, and format cells containing formulas just as you do cells containing labels or values. Using **AutoFill**, you can quickly copy formulas to adjacent cells. If you need to copy formulas to different parts of a worksheet, use the Paste command or Paste Options button.



Copy a Formula Using AutoFill

- 1 Select the cell that contains the formula you want to copy.
- 2 Position the pointer (fill handle) on the lower-right corner of the selected cell.
- 3 Drag the mouse down until the adjacent cells where you want the formula pasted are selected, and then release the mouse button.



Copy and Paste a Formula

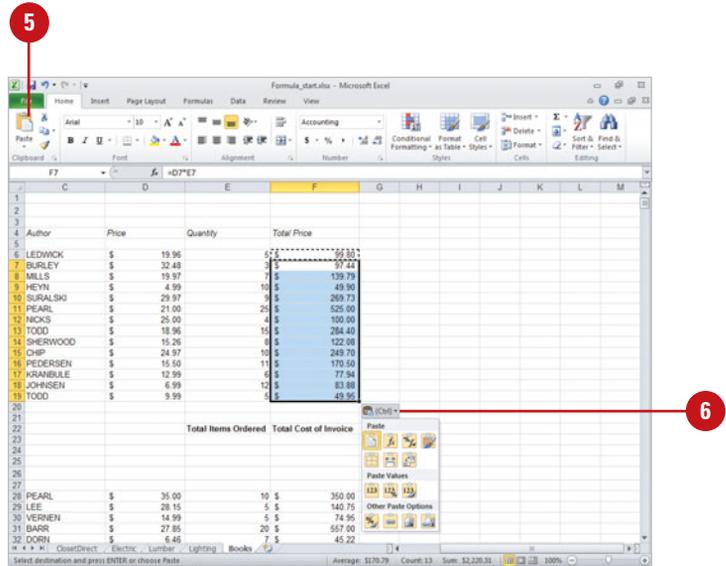
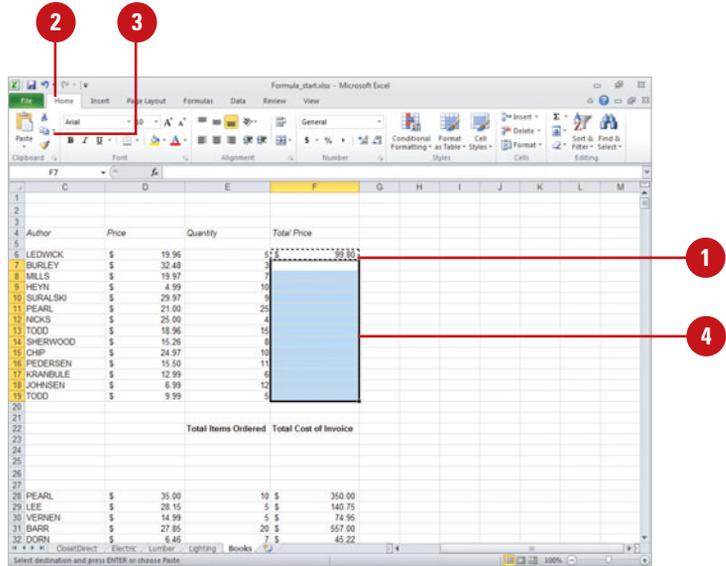
- 1 Select the cell that contains the formula you want to copy.
- 2 Click the **Home** tab.
- 3 Click the **Copy** button.
- 4 Select one or more cells where you want to paste the formula.
- 5 Click the **Paste** button or click the **Paste** button arrow, point to an option to display a live preview (**New!**) of the paste, and then click to paste the item.
- 6 Click the **Paste Options** button, point to an option for the live preview (**New!**), and then select the option you want.

If you don't want to paste this selection anywhere else, press Esc to remove the marquee.

Did You Know?

You can use Paste Special to copy only formulas. Select the cells containing the formulas you want to copy, click the Copy button on the Home tab, click where you want to paste the data, click the Paste button arrow, click Paste Special, click the Formulas button, and then click OK.

You can use keyboard commands to recalculate formulas. Press F9 to recalculate formulas that have changed since the last calculation in all open workbooks. Press Shift+F9 to recalculate formulas in the active workbook. Press Ctrl+Alt+F9 to recalculate all formulas in all open workbooks, regardless of whether formulas have changed. Press Ctrl+Shift+Alt+F9 to recheck dependent formulas in all open workbooks, regardless of whether formulas have changed.



Understanding Cell Referencing

Each cell, the intersection of a column and row on a worksheet, has a unique address, or **cell reference**, based on its column letter and row number. For example, the cell reference for the intersection of column D and row 4 is D4.

Cell References in Formulas

The simplest formula refers to a cell. If you want one cell to contain the same value as another cell, type an equal sign followed by the cell reference, such as =D4. The cell that contains the formula is known as a **dependent cell** because its value depends on the value in another cell. Whenever the cell that the formula refers to changes, the cell that contains the formula also changes.

Depending on your task, you can use **relative cell references**, which are references to cells relative to the position of the formula, **absolute cell references**, which are cell references that always refer to cells in a specific location, or **mixed cell references**, which use a combination of relative and absolute column and row references. If you use macros, the R1C1 cell references make it easy to compute row and column positions.

Relative Cell References

When you copy and paste or move a formula that uses relative references, the references in the formula change to reflect cells that are in the same relative position to the formula. The formula is the same, but it uses the new cells in its calculation. Relative addressing eliminates the tedium of creating new formulas for each row or column in a worksheet filled with repetitive information.

Absolute Cell References

If you don't want a cell reference to change when you copy a formula, make it an absolute reference by typing a dollar sign (\$) before each part of the reference that you don't want to change. For example, \$A\$1 always refers to cell A1. If you copy or fill the formula down columns or across rows, the absolute reference doesn't change. You can add a \$ before the column letter and the row number. To ensure accuracy and simplify updates, enter constant values (such as tax rates, hourly rates, and so on) in a cell, and then use absolute references to them in formulas.

Mixed Cell References

A mixed reference is either an absolute row and relative column or absolute column and relative row. You add the \$ before the column letter to create an absolute column or before the row number to create an absolute row. For example, \$A1 is absolute for column A and relative for row 1, and A\$1 is absolute for row 1 and relative for column A. If you copy or fill the formula across rows or down columns, the relative references adjust, and the absolute ones don't adjust.

3-D References

3-D references allow you to analyze data in the same cell or range of cells on multiple worksheets within a workbook. A 3-D reference includes the cell or range reference, preceded by a range of worksheet names. For example, =AVERAGE(Sheet1:Sheet4!A1) returns the average for all the values contained in cell A1 on all the worksheets between and including Sheet 1 and Sheet 4.

Using Absolute Cell References

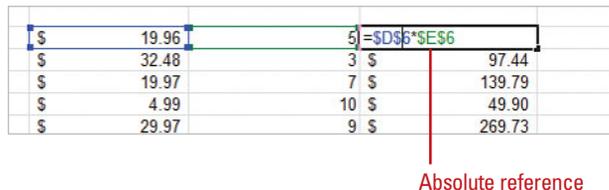
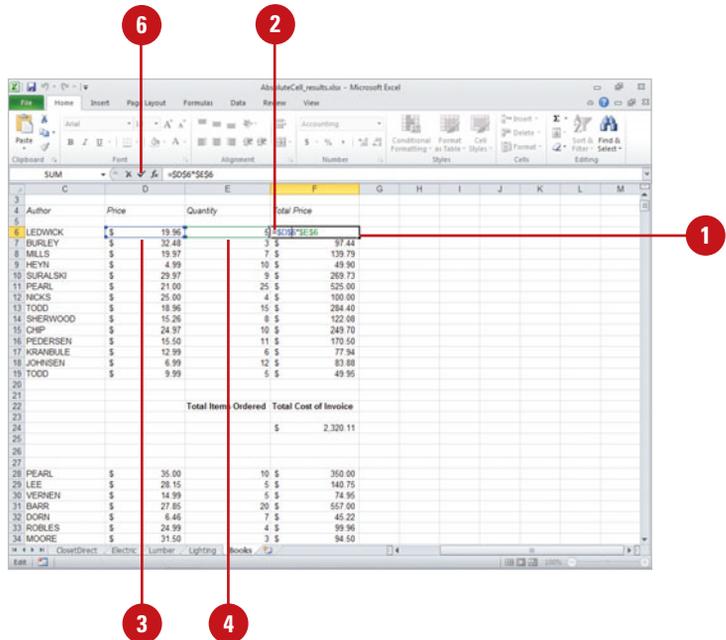
Create an Absolute Reference

- 1 Click a cell where you want to enter a formula.
 - 2 Type = (an equal sign) to begin the formula.
 - 3 Select a cell, and then type an arithmetic operator (+, -, *, or /).
 - 4 Select another cell, and then press the F4 key to make that cell reference absolute.
- You can continue to press F4 to have Excel cycle through the different reference types.
- 5 If necessary, continue entering the formula.
 - 6 Click the **Enter** button on the formula bar, or press Enter.

Did You Know?

You can change an absolute reference back to a relative reference. In the cell with the absolute formula, repeatedly press F4 until all the dollar signs are removed from the reference. You press F4 to cycle through all the reference types. For example, if you enter A1 to start a formula, press F4 to display \$A\$1. Press again to display A\$1. Press again to display \$A1. Press it again to display A1.

When you want a formula to consistently refer to a particular cell, even if you copy or move the formula elsewhere on the worksheet, you need to use an absolute cell reference. An absolute cell reference is a cell address that contains a dollar sign (\$) in the row or column coordinate, or both. When you enter a cell reference in a formula, Excel assumes it is a relative reference unless you change it to an absolute reference. If you want part of a formula to remain a relative reference, remove the dollar sign that appears before the column letter or row number.

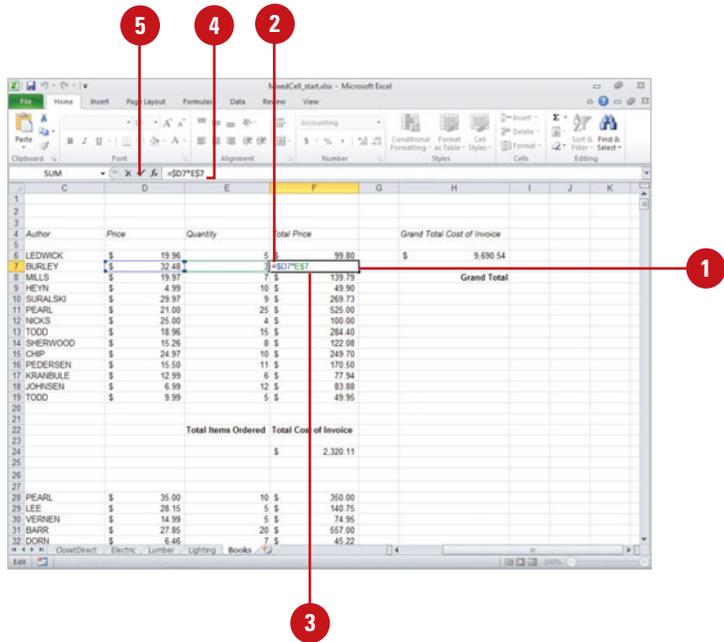


Using Mixed Cell References

Create a Mixed Reference

- 1 Click a cell where you want to enter a formula.
- 2 Type = (an equal sign) to begin the formula.
- 3 Select the cells you want to use and then complete the formula.
- 4 Click the insertion point in the formula bar, and then type \$ before the column or row you want to make absolute.
- 5 Click the **Enter** button on the formula bar, or press Enter.

A mixed cell reference is either an absolute column and relative row or absolute row and relative column. When you add the \$ before the column letter you create an absolute column or before the row number you create an absolute row. For example, \$A1 is absolute for column A and relative for row 1, and A\$1 is absolute for row 1 and relative for column A. If you copy or fill the formula across rows or down columns, the relative references adjust, and the absolute ones don't adjust.



Price	Quantity	Total Price
\$ 19.96	5	\$ 99.80
\$ 32.48	3	<code>=D7*E\$7</code>
\$ 19.97	7	\$ 139.79
\$ 4.99	10	\$ 49.90
\$ 29.97	9	\$ 269.73
\$ 21.00	25	\$ 525.00

Mixed reference

Using 3-D Cell References

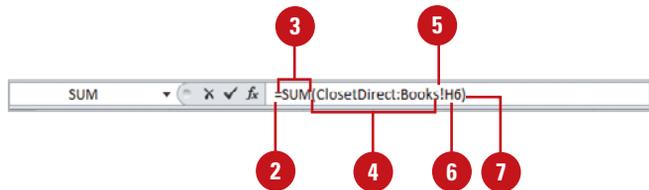
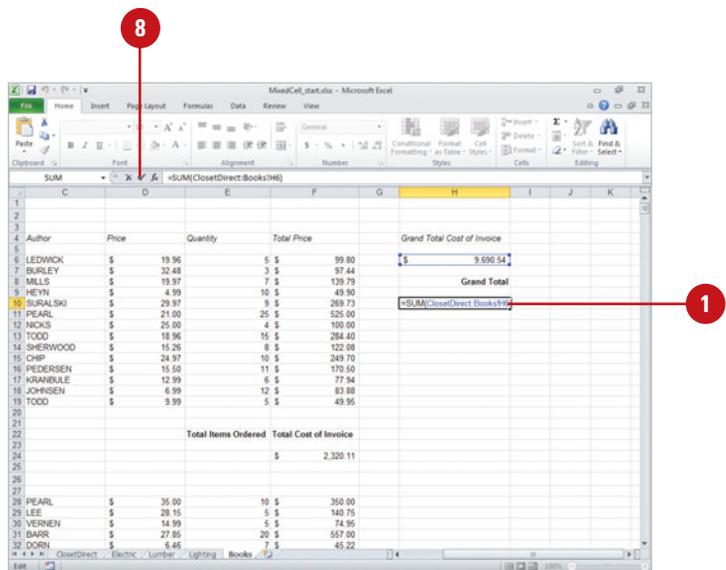
Create a 3-D Cell Reference

- 1 Click a cell where you want to enter a formula.
- 2 Type = (an equal sign) to begin the formula.
- 3 Type the function you want to use followed by a ((left bracket).
- 4 Type the first worksheet name, followed by a : (colon), and then the last worksheet name in the range.
- 5 Type ! (exclamation).
- 6 Type or select the cell or cell range you want to use in the function.
- 7 Type) (right bracket).
- 8 Click the **Enter** button on the formula bar, or press Enter.

See Also

See "Performing Calculations Using Functions" on page 102 and "Creating Functions" on page 103 for information on creating and using functions.

If you want to analyze data in the same cell or range of cells on multiple worksheets within a workbook, use a mixed 3-D reference. For example, `=SUM(Sheet3:Sheet6!A1:A10)` returns the sum for all the values contained in the range of cells A1 through A10 on all the worksheets between and including Sheet 3 and Sheet 6. 3-D references work with the following functions: AVERAGE, AVERAGEA, COUNT, COUNTA, MAX, MAXA, MIN, MINA, PRODUCT, STDEV, STDEVA, STDEVPA, VAR, VARA, VARP, and VARPA. However, 3-D references cannot be used with array formulas, the intersection operator (a single space), or the implicit intersection. If you move, insert, or copy sheets between the ones included in the range, Excel adds the values from the sheets in the calculations. If you move or remove sheets between the ones included in the range, Excel removes the values from the calculation.



Naming Cells and Ranges

Name a Cell or Range Using the Name Box

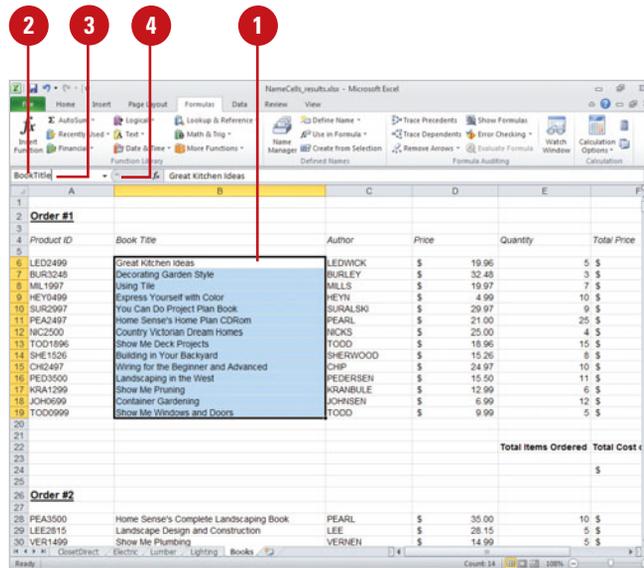
- 1 Select the cell or range, or nonadjacent selections you want to name.
- 2 Click the Name box on the formula bar.
- 3 Type a name for the range.

A range name can include up to 255 characters, uppercase or lowercase letters (not case sensitive), numbers, and punctuation, but no spaces or cell references.

By default, names use absolute cell references.

- 4 To adjust the width of the Name box, point between the Name box and the Formula box until the pointer changes to a horizontal double arrow, and then drag left or right.
- 5 Press Enter. The range name will appear in the Name box whenever you select the range in the workbook.

To make working with ranges easier, Excel allows you to name them. The name BookTitle, for example, is easier to remember than the range reference B6:B21. Named ranges can be used to navigate large worksheets. Named ranges can also be used in formulas instead of typing or pointing to specific cells. When you name a cell or range, Excel uses an absolute reference for the name by default, which is almost always what you want. You can see the absolute reference in the Refers to box in the New Name dialog box. There are two types of names you can create and use: defined name and table name. A **defined name** represents a cell, a range of cells, formula or constant, while a **table name** represents an Excel table, which is a collection of data stored in records (rows) and fields (columns). You can define a name for use in a worksheet or an entire workbook, also known as **scope**. To accommodate long names, you can resize the name box in the formula bar. The worksheet and formula bar work together to avoid overlapping content.

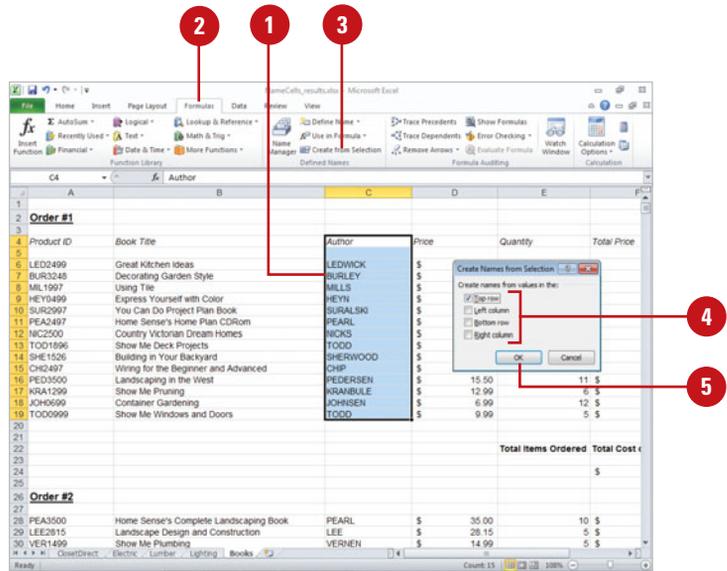


Let Excel Name a Cell or Range

- 1 Select the cells, including the column or row header, you want to name.
- 2 Click the **Formulas** tab.
- 3 Click the **Create from Selection** button.
- 4 Select the check box with the position of the labels in relation to the cells.

Excel automatically tries to determine the position of the labels, so you might not have to change any options.

- 5 Click **OK**.

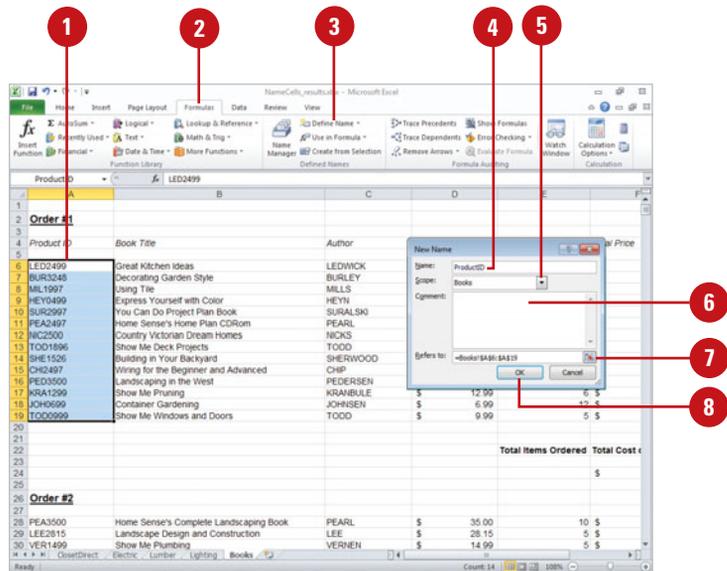


Name a Cell or Range Using the New Name Dialog Box

- 1 Select the cell or range, or nonadjacent selections you want to name.
- 2 Click the **Formulas** tab.
- 3 Click the **Define Name** button.
- 4 Type a name for the reference.
- 5 Click the **Scope** list arrow, and then click **Workbook** or a specific worksheet.
- 6 If you want, type a description of the name.

The current selection appears in the Refer to box.

- 7 Click the **Collapse Dialog** button, select different cells and click the **Expand Dialog** button, or type = (equal sign) followed by a constant value or a formula.
- 8 Click **OK**.



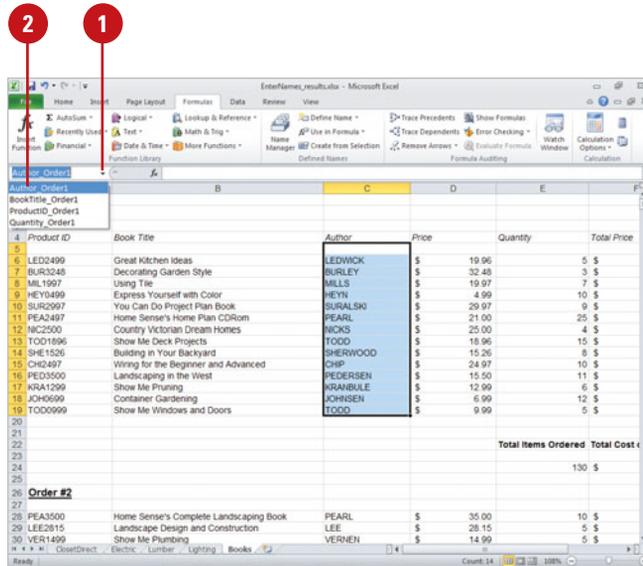
Entering Named Cells and Ranges

After you define a named cell or range, you can enter a name by typing, using the Name box, using Formula AutoComplete, or selecting from the Use in Formula command. As you begin to type a name in a formula, Formula AutoComplete displays valid matches in a drop-down list, which you can select and insert into a formula. You can also select a name from a list of available from the Use in Formula command. If you have already entered a cell or range address in a formula or function, you can apply a name to the address instead of re-creating it.

Enter a Named Cell or Range Using the Name Box

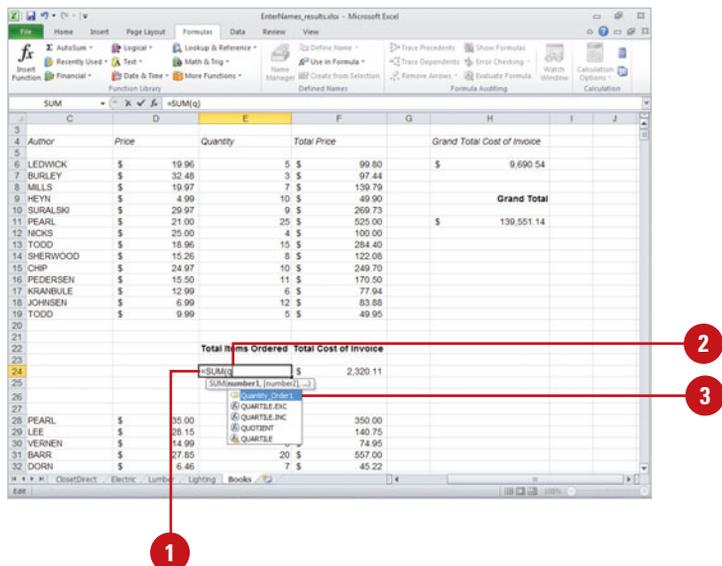
- 1 Click the **Name box** list arrow on the formula bar.
- 2 Click the name of the cell or range you want to use.

The range name appears in the Name box, and all cells included in the range are highlighted on the worksheet.



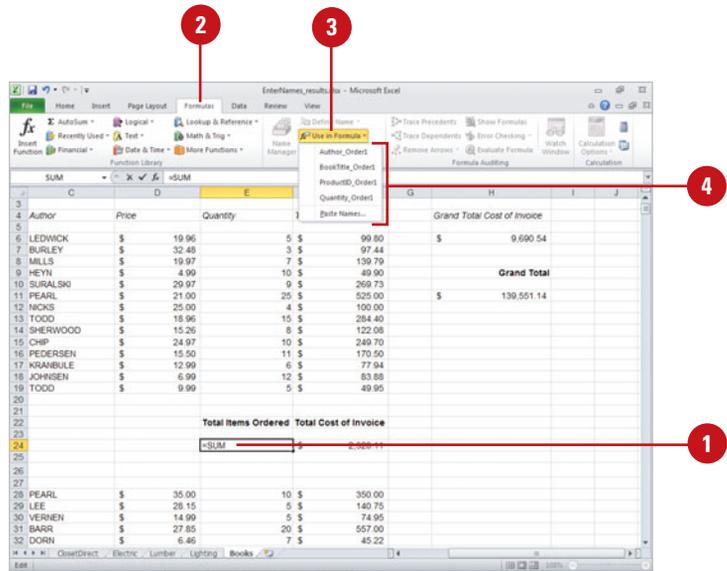
Enter a Named Cell or Range Using Formula AutoComplete

- 1 Type = (equal sign) to start a formula, and then type the first letter of the name.
- 2 To insert a name, type the first letter of the name to display it in the Formula AutoComplete drop-down list.
- 3 Scroll down the list, if necessary, to select the name you want, and then press Tab or double-click the name to insert it.



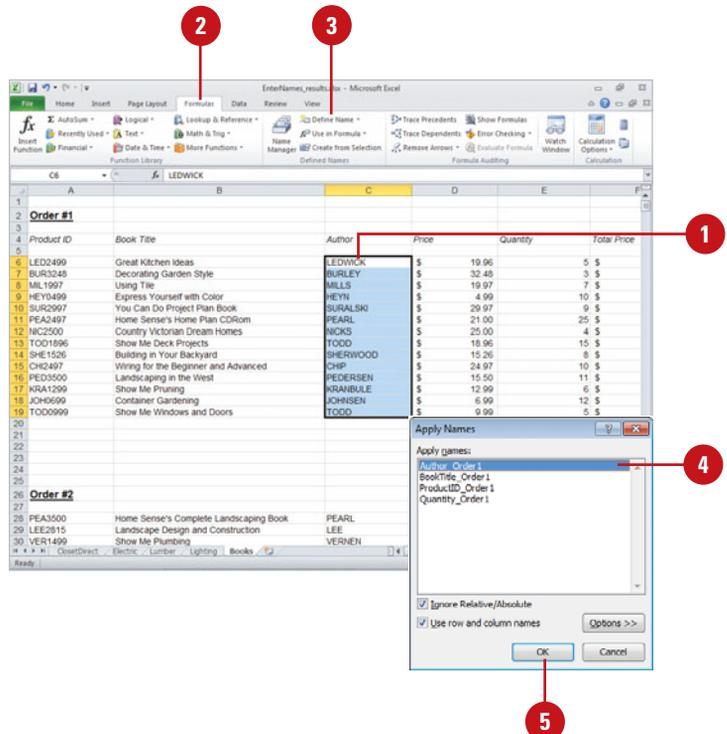
Enter a Named Cell or Range from the Use in Formula Command

- 1 Type = (equal sign) to start a formula.
- 2 Click the **Formulas** tab.
- 3 When you want to insert a name, click the **Use in Formula** button.
- 4 Use one of the following menu options:
 - ◆ Click the name you want to use.
 - ◆ Click **Paste Names**, select a name, and then click **OK**.



Apply a Name to a Cell or Range Address

- 1 Select the cells in which you want to apply a name.
- 2 Click the **Formulas** tab.
- 3 Click the **Define Name** button on the arrow, and then click **Apply Names**.
- 4 Click the name you want to apply.
- 5 Click **OK**.



Did You Know?

Should I select the Use row and column names option? When you select this option, Excel uses the range row and column headings to refer to the range you've selected (if a cell does not have its own name, but is part of a named range).

Managing Names

Organize and View Names

- 1 Click the **Formulas** tab.
- 2 Click the **Name Manager** button.

TROUBLE? You cannot use the Name Manager dialog box while you're editing a cell. The Name Manager doesn't display names defined in VBA or hidden names.

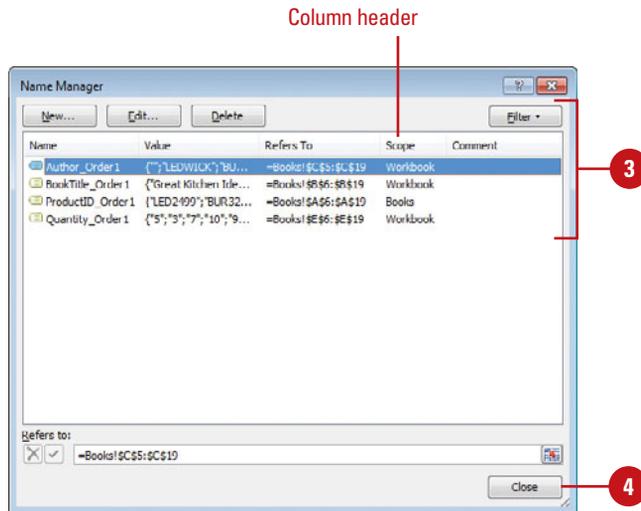
- 3 Use one of the following menu options:
 - ◆ **Resize columns.** Double-click the right side of the column header to automatically size the column to fit the largest value in that column.
 - ◆ **Sort names.** Click the column header to sort the list of names in ascending or descending order.
 - ◆ **Filter names.** Click the Filter button, and then select the filter command you want. See table for filter option details.

- 4 Click **Close**.

Did You Know?

What happens when you zoom in on a name range? When you zoom the view of the worksheet to 39 percent or less, Excel adds a blue border around the labels you have created. The blue border does not print.

The Name Manager makes it easy to work with all the defined names and table names in a workbook from one location. You can display the value and reference of a name, specify the scope—either worksheet or workbook level—of a name, find names with errors, and view or edit name descriptions. In addition, you can add, change, or delete names, and sort and filter the names list. You can also use table column header names in formulas instead of cell references.



Name Manager Filter Options

Option	Result
Names Scoped to Worksheet	Displays names local to a worksheet
Names Scoped to Workbook	Displays names global to a workbook
Names with Errors	Displays names with values that contain errors (such as #NAME, #VALUE, etc.)
Names without Errors	Displays names without errors
Defined Names	Displays names defined by you or by Excel
Table Names	Displays table names

Change a Name

- 1 Click the **Formulas** tab.
- 2 Click the **Names Manager** button.
- 3 Click the name you want to change.
- 4 Click **Edit**.
- 5 Type a new name for the reference in the Name box.
- 6 Change the reference. Enter a range or use the **Collapse** button to select one.
- 7 Click **OK**.
- 8 In the Refers to area, make any changes you want to the cell, formula, or constant represented by the name.

To cancel unwanted changes, click the **Cancel** button or press Esc, or to save changes, click the **Commit** button or press Enter.

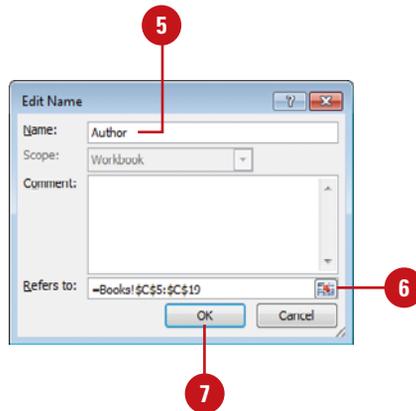
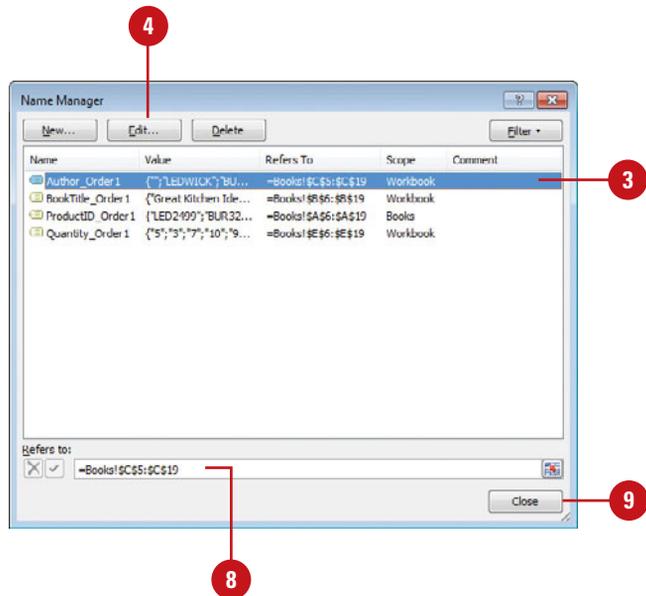
- 9 Click **Close**.

Did You Know?

You can delete a name range. Click the Formulas tab, click the Name Manager button, select the names you want to delete, click Delete or press Delete, click OK to confirm, and then click Close.

What happens when you change a label reference? If you change the name of a reference label, Excel automatically makes the change to every formula in which the name is used.

You can label names that are relative. When you use a label name in a formula or function, Excel sees it as a relative reference. You can copy the formula to other cells, or use AutoFill to copy it and the reference changes.

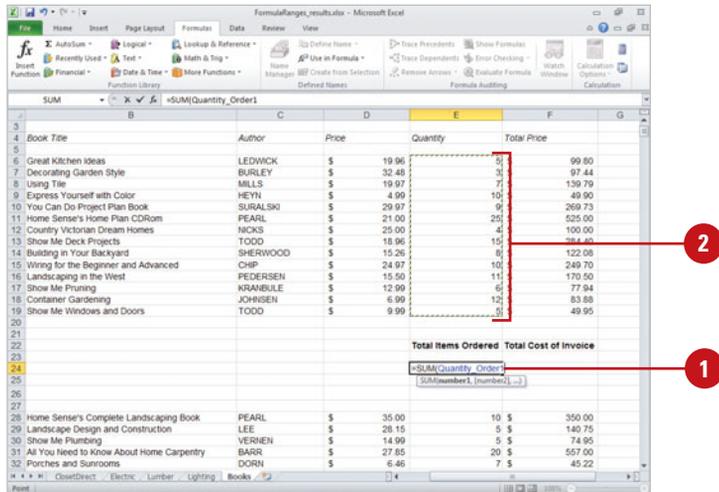


Simplifying a Formula with Ranges

Use a Range in a Formula

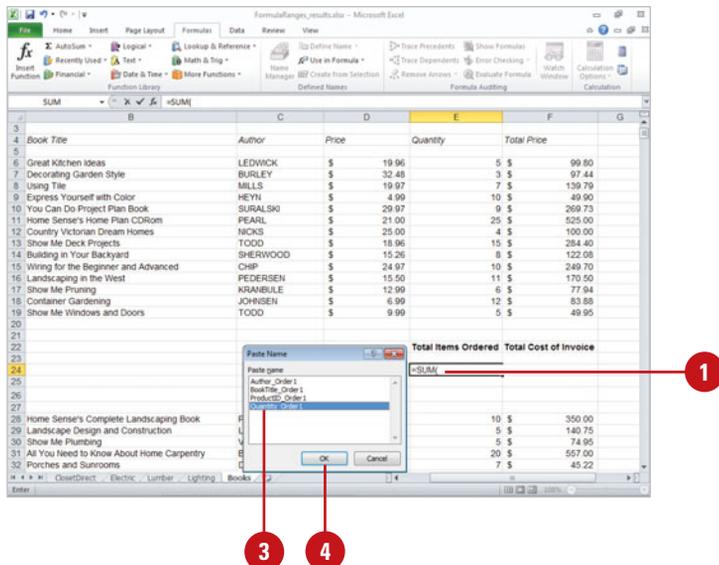
- 1 Put your cursor where you would like the formula. Type an equal sign (=) followed by the start of a formula, such as `=SUM(`.
- 2 Click the first cell of the range, and then drag to select the last cell in the range. Excel enters the range address for you.
- 3 Complete the formula by entering a close parentheses, or another function, and then click the **Enter** button.

You can simplify formulas by using ranges and range names. For example, if 12 cells on your worksheet contain monthly budget amounts, and you want to multiply each amount by 10%, you can insert one range address in a formula instead of inserting 12 different cell addresses, or you can insert a range name. Using a range name in a formula helps to identify what the formula does; the formula `=TotalOrder*0.10`, for example, is more meaningful than `=SUM(F6:F19)*0.10`.



Use a Range Name in a Formula

- 1 Put your cursor where you would like the formula. Type an equal sign (=) followed by the start of a formula, such as `=SUM(`.
- 2 Press F3 to display a list of named ranges.
 - ◆ You can also click the **Use in Formula** button on the Formulas tab, and then click **Paste**.
- 3 Click the name of the range you want to insert.
- 4 Click **OK**.
- 5 Complete the formula by entering a close parentheses, or another function, and then click the **Enter** button.



Displaying Calculations with the Status Bar

Calculate a Range Automatically

- 1 Select the range of cells you want to calculate.

The sum, average, and count of the selected cells appears on the status bar by default.

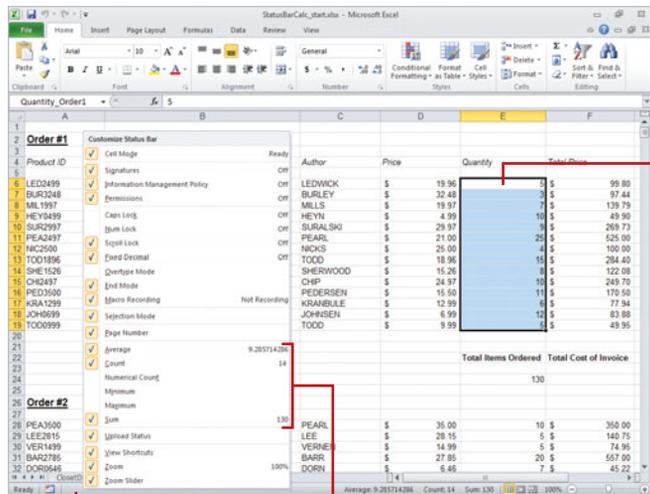
- 2 If you want to change the type of calculations that appear on the Status bar, right-click anywhere on the Status bar to display a shortcut menu.

The shortcut menu displays all the available status information you can track. The right side of the menu displays the current values for the different calculations.

- 3 Click to toggle (on or off) the available types of calculations.

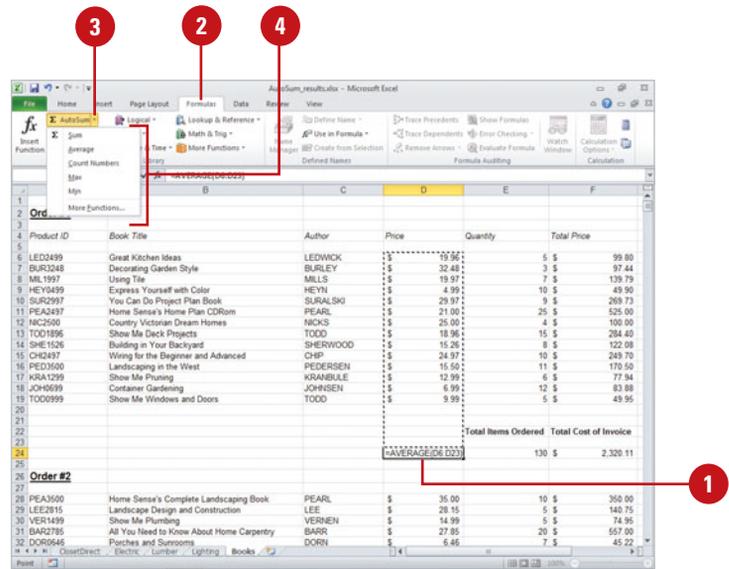
- ◆ Average
- ◆ Count
- ◆ Numerical Count
- ◆ Minimum
- ◆ Maximum
- ◆ Sum

You can simplify your work using the Status bar calculations when you don't want to insert a formula, but you want to quickly see the results of a simple calculation. The Status bar automatically displays the sum, average, maximum, minimum, or count of the selected values. The Status bar results do not appear on the worksheet when printed but are useful for giving you quick answers while you work. If a cell contains text, it's ignored, except when you select the Count option.



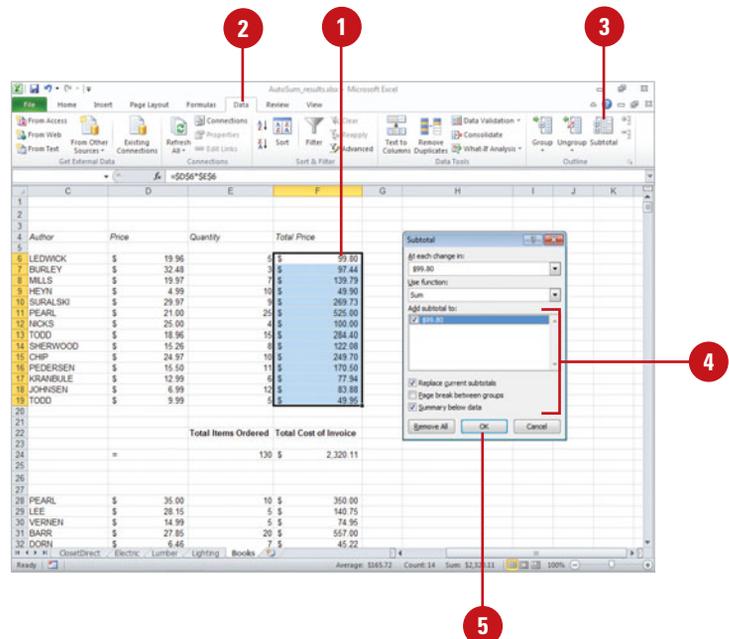
Calculate with Extended AutoSum

- 1 Click the cell where you want to display the calculation.
- 2 Click the **Formulas** tab.
- 3 Click the **AutoSum** button arrow.
- 4 Click the function you want to use, such as AVERAGE, COUNT, MAX, and MIN.
- 5 Press Enter to accept the range selected.



Calculate Subtotals and Totals

- 1 Click anywhere within the data to be subtotaled.
 - 2 Click the **Data** tab.
 - 3 Click the **Subtotal** button.
- If a message box appears, read the message, and then click the appropriate button.
- 4 Select the appropriate check boxes to specify how the data is subtotaled.
 - 5 Click **OK**.



Did You Know?

You can use AutoSum to calculate a subtotal. If you're working with a table, you can use the AutoSum button to insert the Subtotal function rather than the SUM function. The function only sums the visible cells in a filtered list.

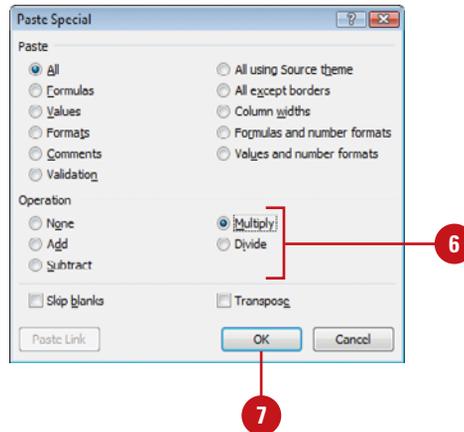
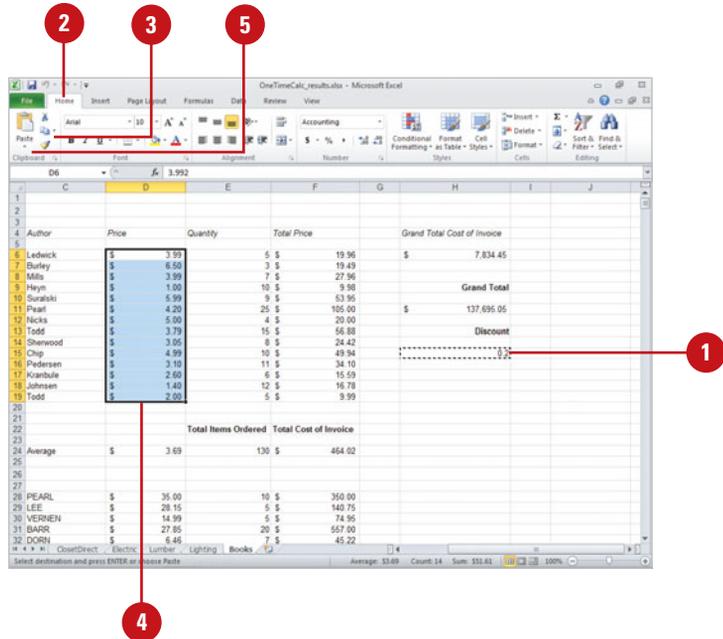
Performing One Time Calculations

Perform One Time Simple Calculations without Using a Formula

- 1 Select an empty cell, and then enter the number you want to use in a calculation.
- 2 Click the **Home** tab.
- 3 Click the **Copy** button.
- 4 Select the range you want to use in the calculation.
- 5 Click the **Paste** button arrow, and then click **Paste Special**.
- 6 Click the operation option you want to use: **Add**, **Subtract**, **Multiply**, or **Divide**.
- 7 Click **OK**.
- 8 Press Esc to cancel Copy mode.

The operation is applied to the contents of each cell in the range. The formula in each cell is changed to include the new operation.

Sometimes you may want to perform simple calculations, such as dividing each value in a range by 4, without having to take the time to use a formula. You can use the Paste Special command to perform simple mathematical operations, such as Add, Subtract, Multiply, and Divide. If you want to perform a more complex function, you can create a temporary formula to accomplish a one-time task. For example, if you want to display a list of names in proper case with only the first letter of each name in uppercase, you can use the Proper function.

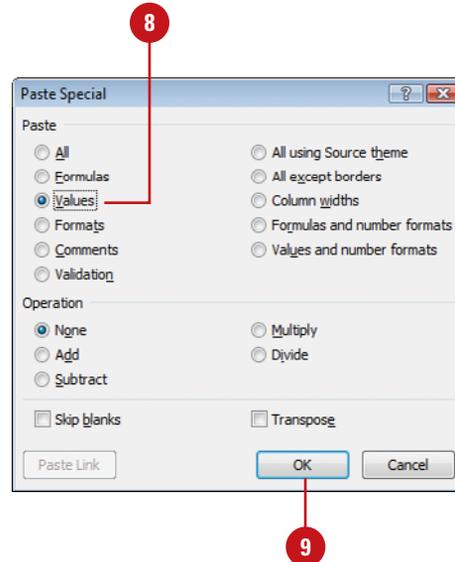
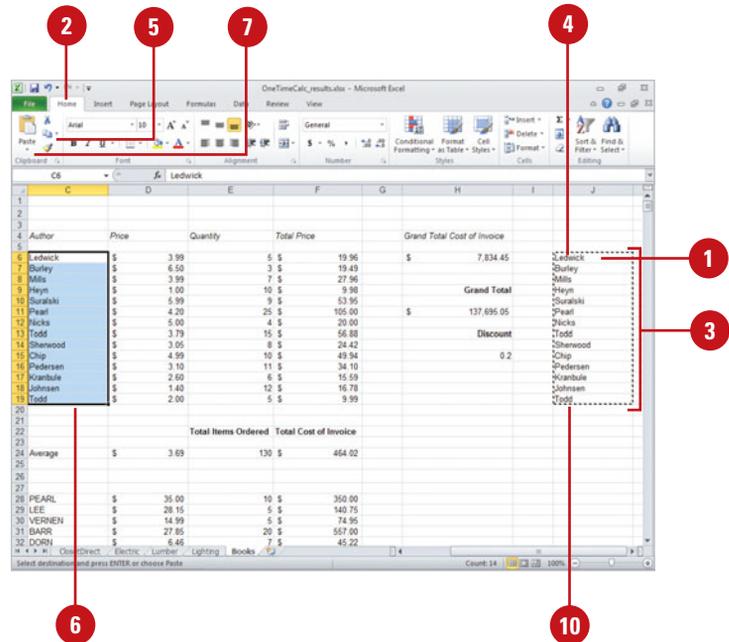


Perform One Time Calculations Using a Formula

- 1 Create a temporary formula in an unused cell, typically a column out of the way. Select an empty cell at the top, type = (equal sign), and then type a function, such as Proper().
- 2 Click the **Home** tab.
- 3 If you want to change a range of data, use the fill down handle to copy the formula to unused cells.
- 4 Select the cell or range with the formula.
- 5 Click the **Copy** button.
- 6 Select the cell you want to change the contents with the formula.
- 7 Click the **Paste** button arrow, and then click **Paste Special**.
- 8 Click the **Values** option.
- 9 Click **OK**.

The original data is replaced with the changed data.

- 10 When you're done with the temporary formulas, select the cells, and delete them.

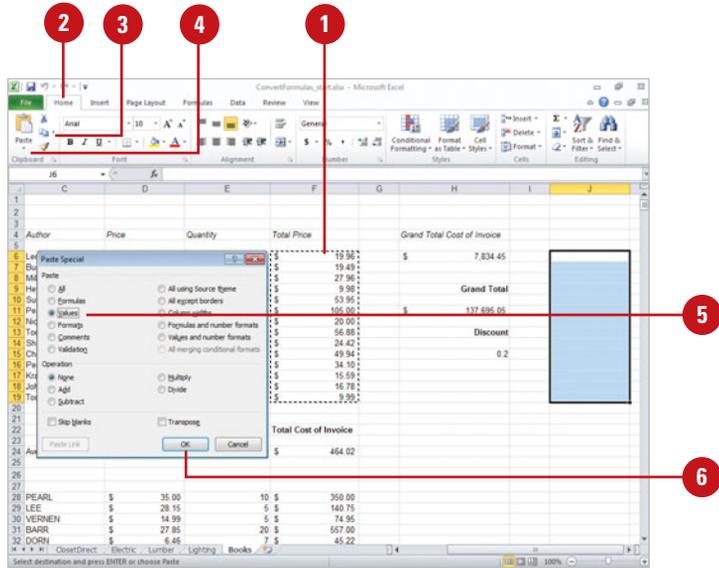


Converting Formulas and Values

Convert a Formula to a Value

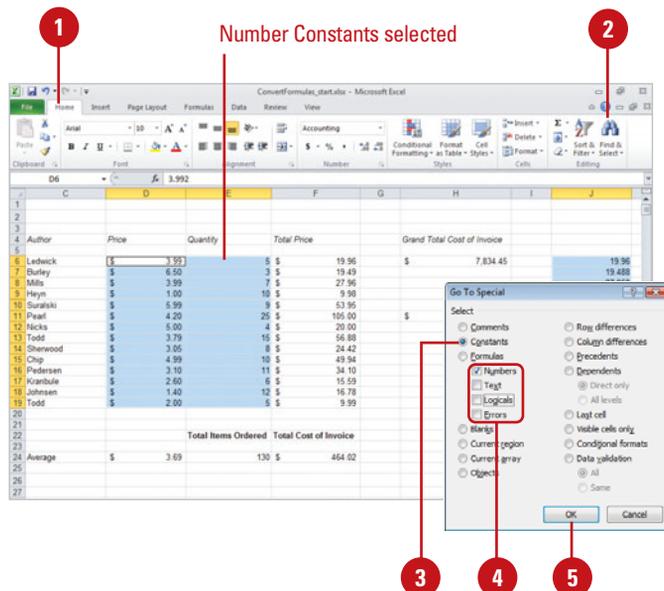
- 1 Select the range of cells with formulas you want to convert to values.
- 2 Click the **Home** tab.
- 3 Click the **Copy** button.
- 4 Click the **Paste** button arrow, and then click **Paste Special**.
- 5 Click the **Values** option.
- 6 Click **OK**.
- 7 Press Esc to cancel Copy mode.

If you have a range of cells that contain formulas, you can convert the cells to values only. This is useful when you have a range of cells that you don't want to change anymore. You use the Paste Special command to paste the contents of the selected range back into place as a value instead of a formula. If you're working with an input form in Excel, you probably need to delete values, but keep the formulas. You can do it with the help of the Go To Special dialog box.



Delete Values and Keep Formulas

- 1 Click the **Home** tab.
- 2 Click the **Find & Select** button, and then click **Go To Special**.
- 3 Click the **Constants** option.
- 4 Select the **Numbers** check box, and then clear the other check boxes under Formula.
- 5 Click **OK**.
- 6 Press Delete to remove the selected values.

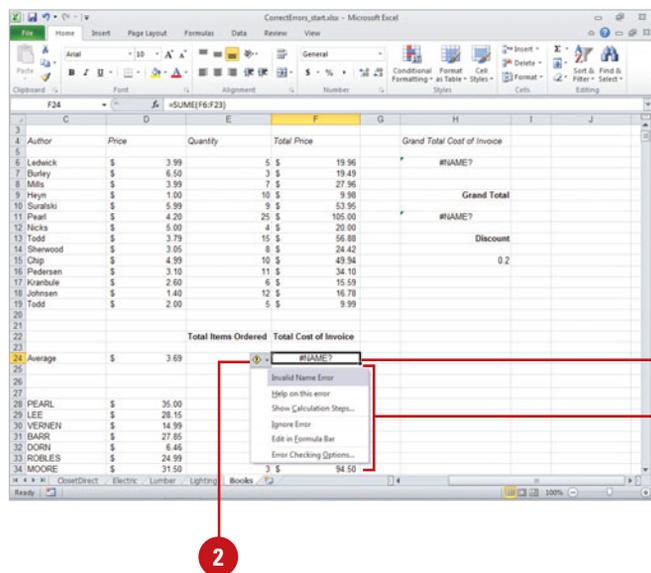


Correcting Calculation Errors

Review and Correct Errors

- 1 Select a cell that contains a green triangle in the upper left corner.
- 2 Click the **Error Options** button.
- 3 Click one of the troubleshooting options (menu options vary depending on the error).
 - ◆ To have Excel fix the error, click one of the available options specific to the error.
 - ◆ To find out more about an error, click **Help on this Error**.
 - ◆ To evaluate the formula, click **Show Calculation Steps**.
 - ◆ To remove the error alert, click **Ignore Error**.
 - ◆ To fix the error manually, click **Edit in Formula Bar**.
 - ◆ To enable background error checking, specify an error color, or reset ignored errors, click **Error Checking Options**.

When Excel finds a possible error in a calculation, it displays a green triangle in the upper left corner of the cell. If Excel can't complete a calculation it displays an error message, such as "#DIV/0!" or "#NAME?". You can use the Error Options button to help you fix the problem. In a complex worksheet, it can be difficult to understand the relationships between cells and formulas. Auditing tools enable you to clearly determine these relationships. When the Auditing feature is turned on, it uses a series of arrows to show you which cells are part of which formulas. When you use the auditing tools, tracer arrows point out cells that provide data to formulas and the cells that contain formulas that refer to the cells. A box is drawn around the range of cells that provide data to formulas.



For Your Information

Avoiding Error Displays in Formulas

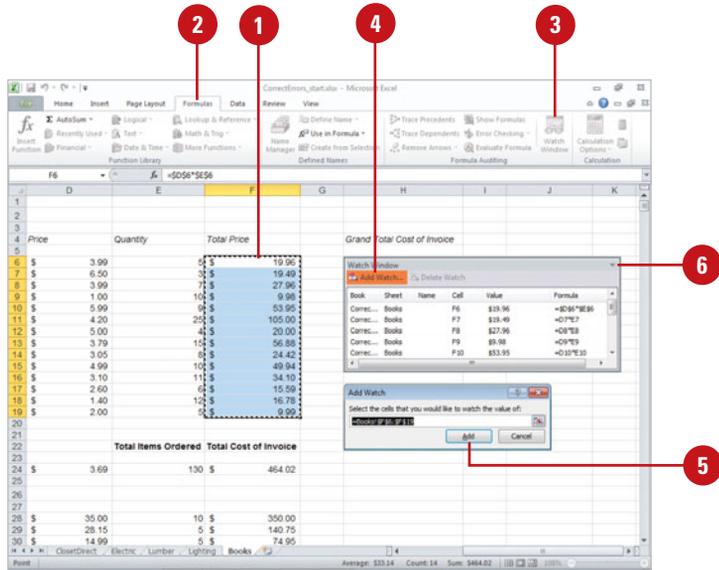
If you include empty cells in a formula, an error message, such as #DIV/0! might appear in the formula cell. You can avoid this message by adding a function to check for errors. If the formula generating an error message for empty cells is `=Formula`, then change it to `=IF(ISERROR(Formula),"",Formula)`. If the ISERROR function is true, the IF function returns an empty string, instead of an error message.

Correcting Formulas

Excel has several tools to help you find and correct problems with formulas. One tool is the **Watch window** and another is the **Error checker**. The Watch window keeps track of cells and their formulas as you make changes to a worksheet. Excel uses an error checker in the same way Microsoft Word uses a grammar checker. The Error checker uses certain rules, such as using the wrong argument type, a number stored as text or an empty cell reference, to check for problems in formulas.

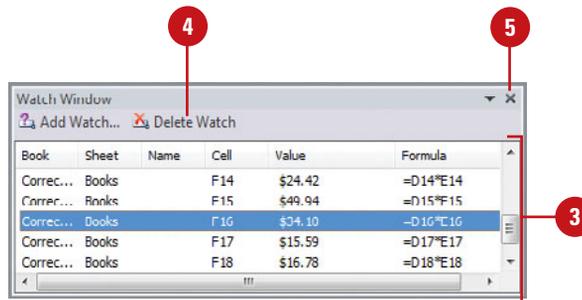
Watch Cells and Formulas

- 1 Select the cells you want to watch.
- 2 Click the **Formulas** tab.
- 3 Click the **Watch Window** button.
- 4 Click the **Add Watch** button on the Watch Window dialog box.
- 5 Click **Add**.
- 6 Click **Close**.



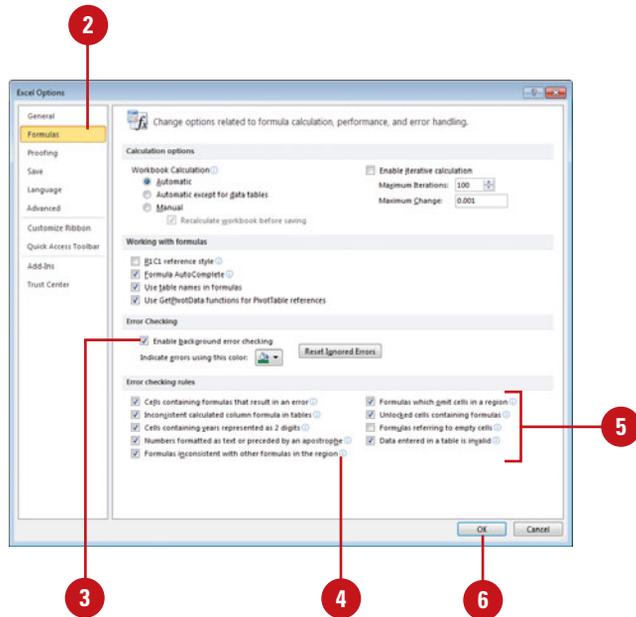
Remove Cells from the Watch Window

- 1 Click the **Formulas** tab.
- 2 Click the **Watch Window** button.
- 3 Select the cells you want to delete. Use the Ctrl key to select multiple cells.
- 4 Click **Delete Watch**.
- 5 Click **Close**.



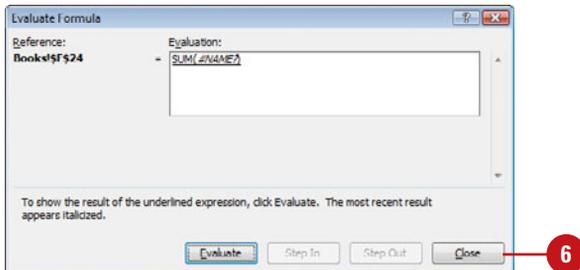
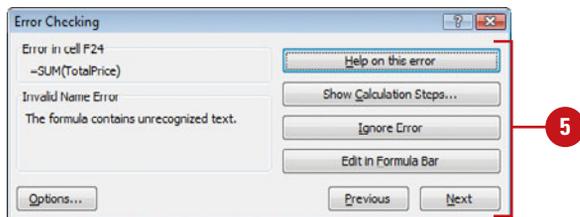
Set Error Checking Options

- 1 Click the **File** tab, and then click **Options**.
- 2 In the left pane, click **Formulas**.
- 3 Select the **Enable background error checking** check box.
- 4 Point to the help icons at the end of the error checking rule options to display a ScreenTip describing the rule.
- 5 Select the error checking rules check boxes you want to use.
- 6 Click **OK**.



Correct Errors

- 1 Open the worksheet where you want to check for errors.
 - 2 Click the **Formulas** tab.
 - 3 Click the **Error Checking** button.
- The error checker scans the worksheet for errors, generating the Error Checking dialog box every time it encounters an error.
- 4 If necessary, click **Resume**.
 - 5 Choose a button to correct or ignore the problem.
 - ◆ **Help on this error.**
 - ◆ **Show Calculation Steps.** Click Evaluate to see results.
 - ◆ **Ignore Error.**
 - ◆ **Edit in Formula Bar.**
 - ◆ **Previous** or **Next.**
 - 6 If necessary, click **Close**.

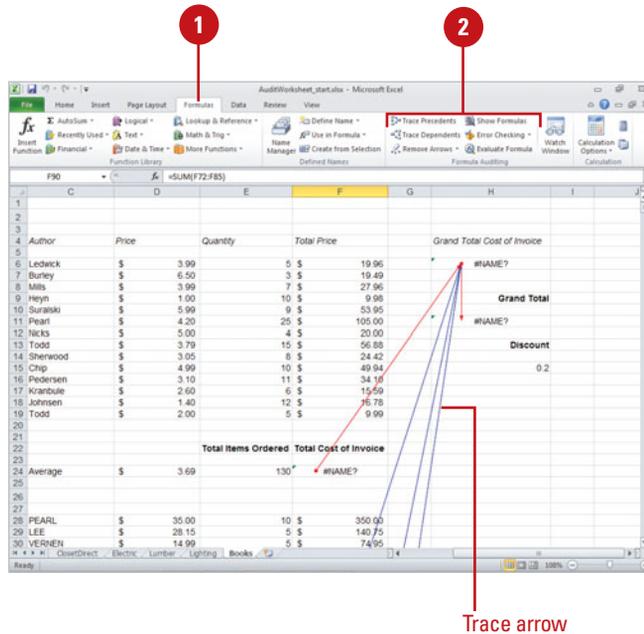


Auditing a Worksheet

In a complex worksheet, it can be difficult to understand the relationships between cells and formulas. Auditing tools enable you to clearly determine these relationships. When the **Auditing** feature is turned on, it uses a series of arrows to show you which cells are part of which formulas. When you use the auditing tools, **tracer arrows** point out cells that provide data to formulas and the cells that contain formulas that refer to the cells. A box is drawn around the range of cells that provide data to formulas.

Trace Worksheet Relationships

- 1 Click the **Formulas** tab.
- 2 Use any of the following options:
 - ◆ Click the **Trace Precedents** button to find cells that provide data to a formula.
 - ◆ Click the **Trace Dependents** button to find out which formulas refer to a cell.
 - ◆ Click the **Error Checking** button arrow, and then click **Trace Error** to locate the problem if a formula displays an error value, such as #DIV/0!
 - ◆ Click the **Remove Arrows** button arrow, and then click **Remove Precedent Arrows**, **Remove Dependent Arrows**, or **Remove All Arrows** to remove precedent and dependent arrows.
- 3 If necessary, click **OK** to locate the problem.



Locating Circular References

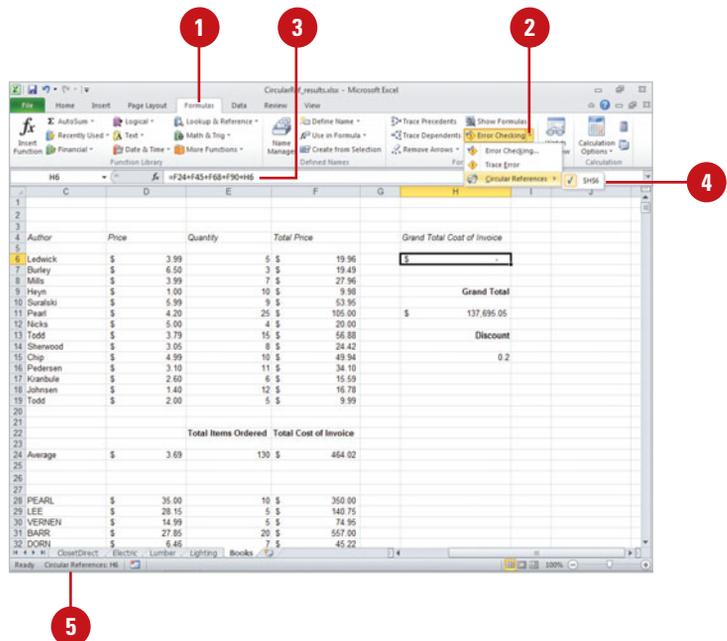
Locate a Circular Reference

- 1 Click the **Formulas** tab.
- 2 Click the **Error Checking** button arrow, point to **Circular References**, and then click the first cell listed in the submenu.
- 3 Review the formula cell.
- 4 If you cannot figure out if the cell is the cause of the circular reference, click the next cell in the Circular References submenu, if available.
- 5 Continue to review and correct the circular reference until the status bar no longer displays the word “Circular.”

Did You Know?

You can enable and increase formula iterations to make a circular reference work. Click the File tab, click Options, click Formulas, select the Enable iterative calculation check box, enter the maximum number of iterations you want (higher the number, the more time Excel needs to calculate a worksheet), and set the maximum amount of change you want to accept between calculation results (smaller the number, the more accurate the results).

A **circular reference** occurs when a formula directly or indirectly refers to its own cell. This causes the formula to use its result in the calculation, which can create errors. When a workbook contains a circular reference, Excel cannot automatically perform calculations. You can use error checking in Excel to locate circular references in a formula, and then remove them. If you leave them in, Excel calculates each cell involved in the circular reference by using the results of the previous iteration. An iteration is a repeated recalculation until a specific numeric condition is met. By default, Excel stops calculating after 100 iterations or after all values in the circular reference change by less than 0.001 between iterations, unless you change the Excel option.



Performing Calculations Using Functions

Enter a Function

- 1 Click the cell where you want to enter the function.
- 2 Type = (an equal sign), type the name of the function, and then type ((an opening parenthesis).

As you type, you can scroll down the Formula AutoComplete list, select the function you want, and then press Tab.

- 3 Type the argument or select the cell or range you want to insert in the function, and then type) (a closed parenthesis) to complete the function.

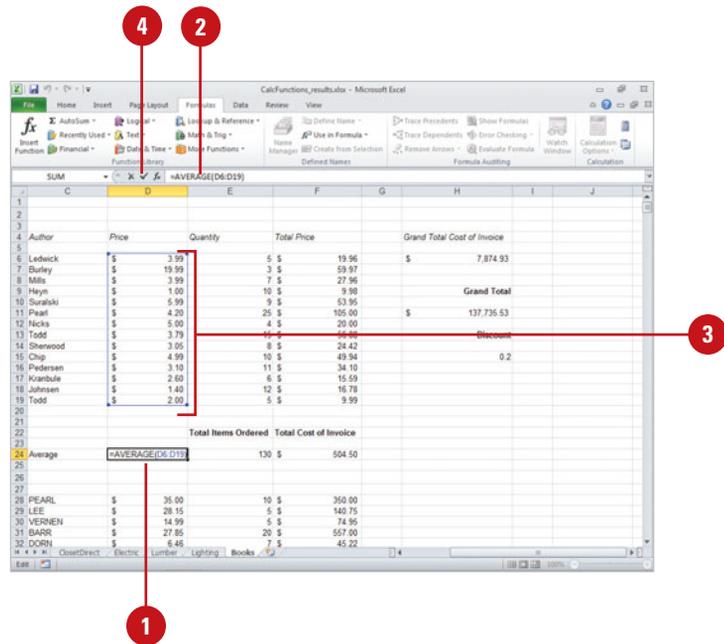
- 4 Click the **Enter** button on the formula bar, or press Enter.

Excel will automatically add the closing parenthesis to complete the function.

See Also

See “Creating a Formula Using Formula AutoComplete” on page 76 for information on using Formula AutoComplete.

Functions are predesigned formulas that save you the time and trouble of creating commonly used or complex equations. Excel includes hundreds of functions that you can use alone or in combination with other formulas or functions. Functions perform a variety of calculations, from adding, averaging, and counting to more complicated tasks, such as calculating the monthly payment amount of a loan. You can enter a function manually if you know its name and all the required arguments, or you can easily insert a function using AutoComplete, which helps you select a function and enter arguments with the correct format.



Commonly Used Excel Functions

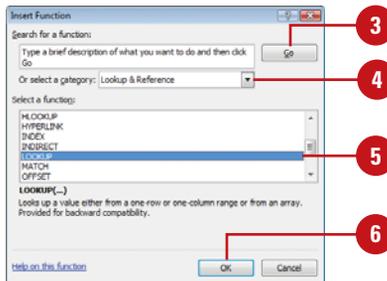
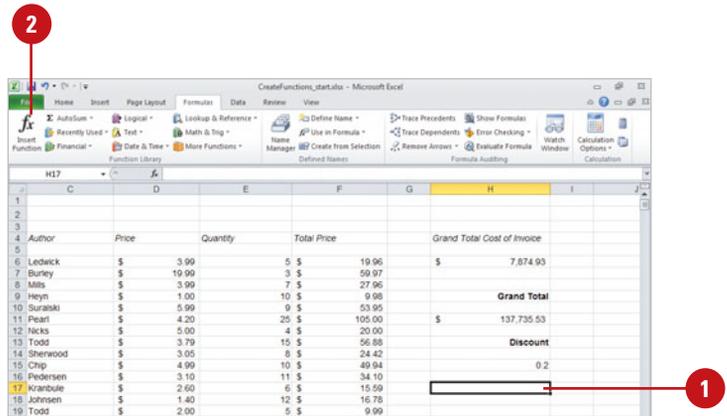
Function	Description	Sample
SUM	Displays the sum of the argument	=SUM(argument)
AVERAGE	Displays the average value in the argument	=AVERAGE(argument)
COUNT	Calculates the number of values in the argument	=COUNT(argument)
PMT	Determines the monthly payment of a loan	=PMT(argument)

Creating Functions

Enter a Function Using Insert Function

- 1 Click the cell where you want to enter the function.
- 2 Click the **Insert Function** button on the Formula bar or click the **Function Wizard** button on the Formulas tab.
- 3 Type a brief description that describes what you want to do in the Search for a function box, and then click **Go**.
- 4 If necessary, click a function category you want to use.
- 5 Click the function you want to use.
- 6 Click **OK**.
- 7 Enter the cell addresses in the text boxes. Type them or click the **Collapse Dialog** button to the right of the text box, select the cell or range using your mouse, and then click the **Expand Dialog** button.
- 8 Click **OK**.

Functions are predesigned formulas that save you the time and trouble of creating commonly used or complex equations. Trying to write a formula that calculates various pieces of data, such as calculating payments for an investment over a period of time at a certain rate, can be difficult and time-consuming. The **Insert Function** feature simplifies the process by organizing Excel's built-in formulas, called functions, into categories so they are easy to find and use. A function defines all the necessary components (also called arguments) you need to produce a specific result; all you have to do is supply the values, cell references, and other variables. You can even combine one or more functions.



For Your Information

Inserting Placeholder Arguments

If you don't know the cell references you want to use for a function, you can insert argument names as placeholders, and then fill in the actual argument later. Press **Ctrl+Shift+A** after you type the functions name. Excel uses the arguments names as arguments. For example, `=VLOOKUP(lookup_value, table_array, col_index_num, range_lookup)`.

Creating Functions Using the Library

Enter a Function Using the Function Library

- 1 Click the cell where you want to enter the function.
- 2 Click the **Formulas** tab.
- 3 Type = (an equal sign).
- 4 Click the button (**Financial, Logical, Text, Date & Time, Lookup & Reference, Math & Trig, More Functions, or Recently Used**) from the Function Library with the type of function you want to use, click a submenu if necessary, and then click the function you want to insert into a formula.

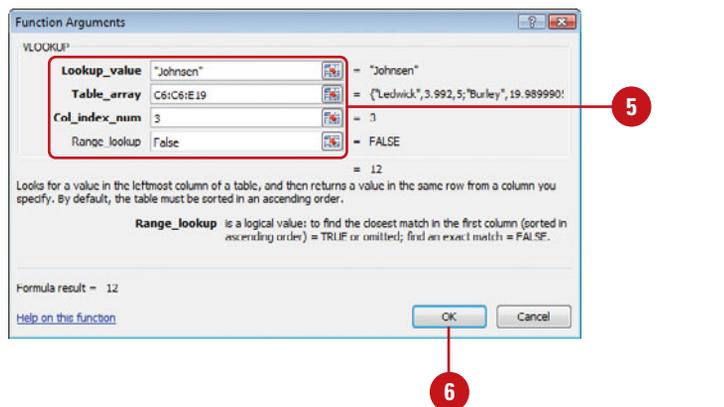
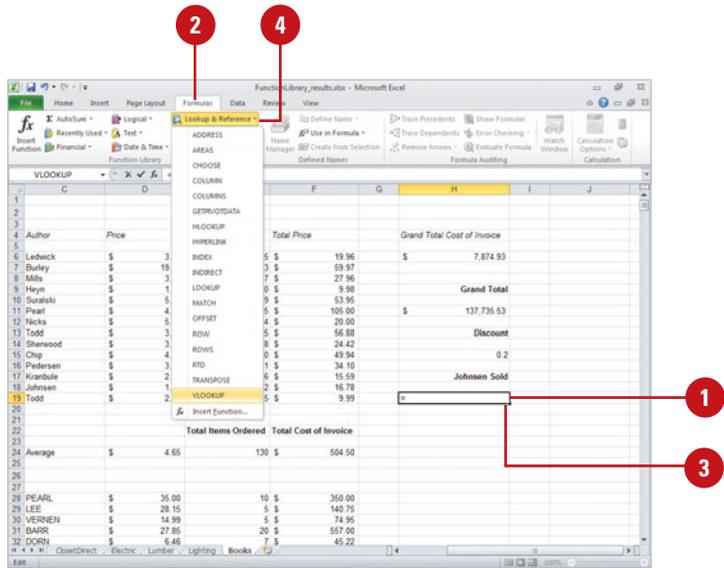
Excel inserts the function you selected into the formula bar with a set of parenthesis, and opens the Function Arguments dialog box.

- 5 Type the argument or select the cell or range you want to insert in the function.

You can click the Collapse Dialog button to the right of the text box, select the cell or range using your mouse, and then click the Expand Dialog button.

- 6 Click **OK**.

To make it easier to find the function you need for a specific use, Excel has organized functions into categories—such as Financial, Logical, Text, Date & Time, Lookup & Reference, Math & Trig, and other functions—on the Formulas tab. Functions—such as beta and chi-squared distributions—for the academic, engineering, and scientific community have been improved for more accuracy (**New!**). Some statistical functions have been renamed for consistency with the real world (**New!**). If you want to use an older version of a function for backwards compatibility with those who do not have Excel 2010, you can use the old functions on the Compatibility menu (**New!**) by using the More Functions button. After you use a function, Excel places it on the recently used list. When you insert a function from the Function Library, Excel inserts the function in the formula bar and opens a Function Argument dialog box, where you can enter or select the cells you want to use in the function.



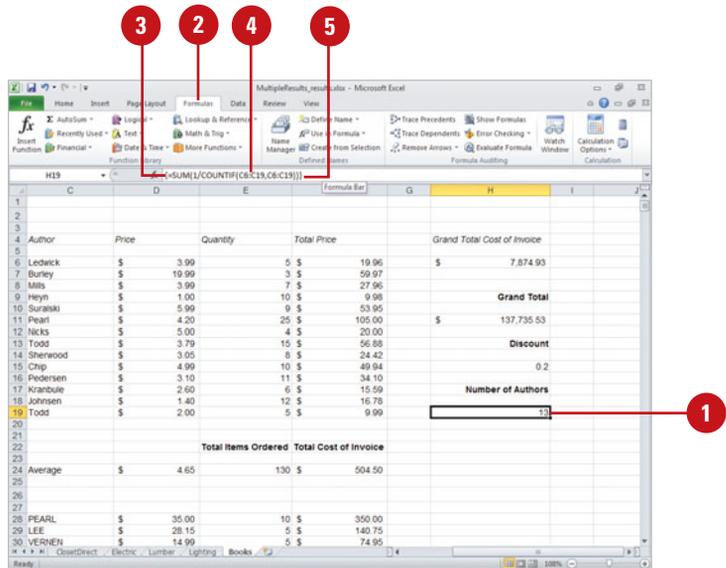
Calculating Multiple Results

Create an Array Formula

- 1 Click the cell where you want to enter the array formula.
- 2 Click the **Formulas** tab.
- 3 Type = (an equal sign).
- 4 Use any of the following methods to enter the formula you want.
 - ◆ Type the function.
 - ◆ Type and use Formula AutoComplete.
 - ◆ Use the Function Wizard.
 - ◆ Use button in the Function Library.
- 5 Press Ctrl+Shift+Enter.

{ } (brackets) appear around the function to indicate it's an array formula.

An array formula can perform multiple calculations and then return either a single or multiple result. For example, when you want to count the number of distinct entries in a range, you can use an array formula, such as $\{=SUM(1/COUNTIF(range,range))\}$. You can also use an array formula to perform a two column lookup using the LOOKUP function. An array formula works on two or more sets of values, known as **array arguments**. Each argument must have the same number of rows and columns. You can create array formulas in the same way that you create other formulas, except you press Ctrl+Shift+Enter to enter the formula. When you enter an array formula, Excel inserts the formula between { } (brackets).



Using Nested Functions

Create a Conditional Formula Using a Nested Function

- 1 Click the cell where you want to enter the function.
- 2 Click the **Formulas** tab.
- 3 Type = (an equal sign).
- 4 Click a button from the Function Library with the type of function you want to use, click a submenu if necessary, and then click the function you want to insert into a formula.

For example, click the Logical & Reference button, and then click COUNTIF.

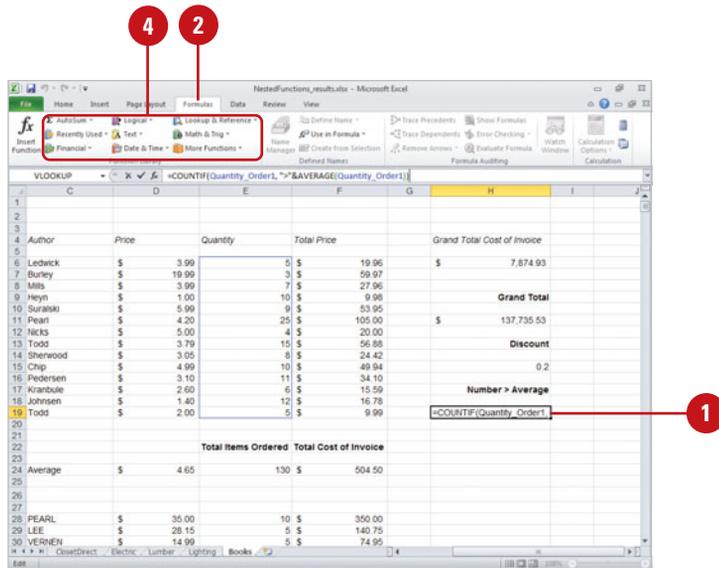
Excel inserts the function you selected into the formula bar with a set of parenthesis, and opens the Function Arguments dialog box.

- 5 Type a function as an argument to create a nested function, or a regular argument.

For example, =COUNTIF(E6:E19), ">"&AVERAGE(E6:E19)).

- 6 Click **OK**.

A nested function uses a function as one of the arguments. Excel allows you to nest up to 64 levels of functions. Users typically create nested functions as part of a conditional formula. For example, IF(AVERAGE(B2:B10)>100,SUM(C2:G10),0). The AVERAGE and SUM functions are nested within the IF function. The structure of the IF function is IF(condition_test, if_true, if_false). You can use the AND, OR, NOT, and IF functions to create conditional formulas. When you create a nested formula, it can be difficult to understand how Excel performs the calculations. You can use the Evaluate Formula dialog box to help you evaluate parts of a nested formula one step at a time.



Conditional Formula Examples

Formula	Result
=AND(A2>A3, A2<A4)	If A2 is greater than A3 and less than A4, then return TRUE, otherwise return FALSE
=OR(A2>A3, A2<A4)	If A2 is greater than A3 or A2 is less than A4, then return TRUE, otherwise return FALSE
=NOT(A2+A3=24)	If A2 plus A3 is not equal to 24, then return TRUE, otherwise return FALSE
IF(A2<>15, "OK", "Not OK")	If the value in cell A2 is not equal to 15, then return "OK", otherwise return "Not OK"

Evaluate a Nested Formula One Step at a Time

1 Select the cell with the nested formula you want to evaluate. You can only evaluate one cell at a time.

2 Click the **Formulas** tab.

3 Click the **Evaluate Formula** button.

4 Click **Evaluate** to examine the value of the underlined reference.

The result of the evaluation appears in italics.

5 If the underlined part of the formula is a reference to another formula, click **Step In** to display the other formula in the Evaluation box.

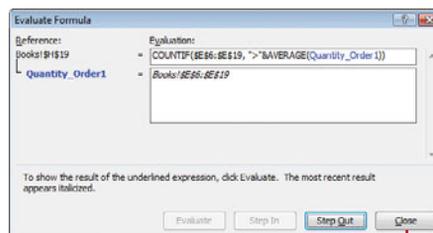
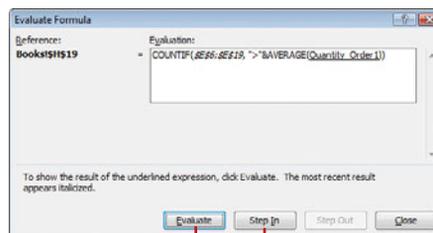
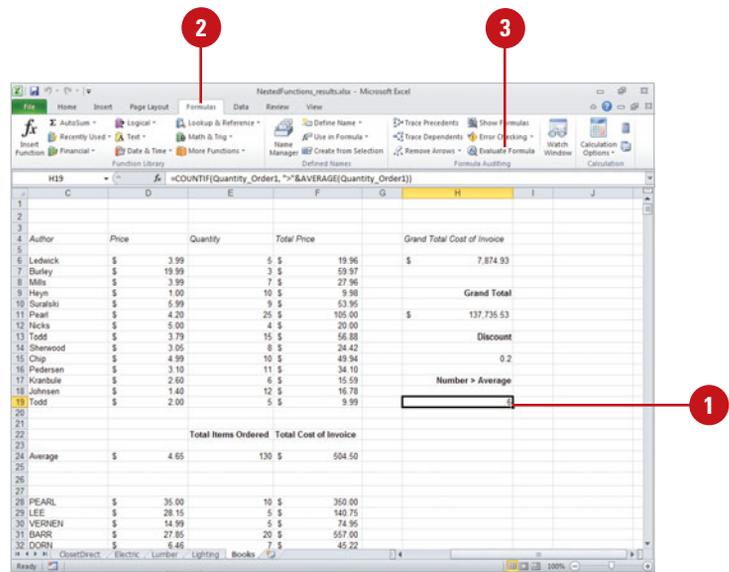
The Step In button is not available for a reference the second time the reference appears in the formula, or if the formula refers to a cell in a separate workbook.

6 Continue until each part of the formula has been evaluated, and then click **Close**.

7 To see the evaluation again, click **Restart**.

Some parts of formulas that use **IF** and **CHOOSE** functions are not evaluated, and **#NA** is displayed. If a reference is blank, a zero value (0) is displayed.

IMPORTANT Some functions recalculate each time the worksheet changes, and can cause the Evaluate Formula to display different results. These functions include **RAND**, **AREAS**, **INDEX**, **OFFSET**, **CELL**, **INDIRECT**, **ROWS**, **COLUMNS**, **NOW**, **TODAY**, and **RANDBETWEEN**.



Using Constants and Functions in Names

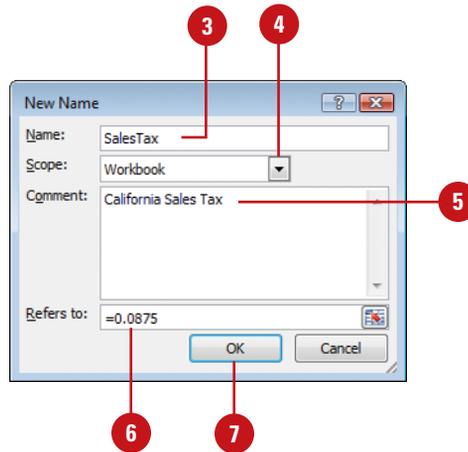
Use a Constant or Function in a Name

- 1 Click the **Formulas** tab.
 - 2 Click the **Define Name** button.
 - 3 Type a name for the reference.
 - 4 Click the **Scope** list arrow, and then click **Workbook** or a specific worksheet.
 - 5 If you want, type a description of the name.
- The current selection appears in the Refers to box.
- 6 In the Refers to box, type = (equal sign) followed by the constant, text, or function you want to use.
 - 7 Click **OK**.

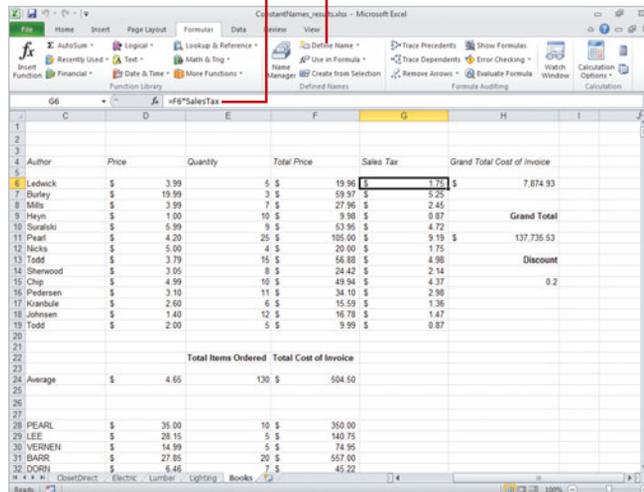
Did You Know?

You can edit the contents of the Refers to box in the New Names dialog box. Since the contents of the Refer to box is in point mode, you can not use the insertion point and arrow keys to edit it. Press F2 to switch to edit mode, where you can use the insertion point and arrow keys to edit it.

Instead of using a cell to store a constant value or function for use in a formula, you can create a name to store it and then use the name in a formula. If you wanted to calculate sales tax, for example, you could create a name called Sales Tax and assign it a constant value. You can also store text in a name. Instead of typing a long name, such as Environmental Protection Agency, you could create a name called EPA and then use the easy-to-type three letter abbreviation in a formula. When you use EPA in a formula as a text string, Excel replaces it with Environmental Protection Agency. It also works for functions and nested functions.



Constant name used in formula Define Name button



Index

A

- absolute cell references, 80
 - creating, 81
 - relative references, changing, 81
- Accessibility Checker, 27
- accounting format, 43
- Acrobat Reader, 185
- acronyms, spell-checking, 62
- action items in meetings, 498
- Actions, 35, 447
 - changing options, 60
 - deleting, 61
 - inserting information using, 61
- Active controls
 - alerts, dealing with, 465
 - inserting, 464
 - movies, playing, 469
 - properties, setting, 467
 - security settings, 369
 - toolbox buttons for, 466
 - VBA code, adding, 468
 - viruses, avoiding, 362-363
- Ad-aware, Lavasoft, 362
- adding/removing. *See also deleting*
 - clip art, 194
 - data connections, 405
 - digital signatures, 359
 - passwords, 357
 - Quick Access Toolbar, items from, 7
 - Status bar, items from, 9
 - tab colors, 154
- add-ins. *See also Analysis ToolPak; COM add-ins; Conditional Sum Wizard; Excel add-ins; Solver*
 - alerts, 449
 - loading/unloading, 325, 448-449
 - managing, 447
 - security options, 368
 - viewing, 446
- Add-Ins tab, 4
- adjacent cell contents, filling with, 45
- Adobe Systems
 - Acrobat Reader, 185
 - Photoshop, 207
- advanced document properties, 438
- advanced options, setting, 436
- adware, 362
- alerts, 430. *See also Groove*
 - add-in alerts, 449
- alignment
 - for cell styles, 167
 - in charts, 274
 - of chart text, 284
 - Format dialog box, changing with, 147
 - of objects, 252-253
 - Ribbon, changing with, 146
 - with SmartArt graphics, 220
- Alignment Dialog Box Launcher
 - changing alignment with, 147
 - multiple alignment options, setting, 148
- All Data Sources files, opening, 13
- All Web Pages, opening, 13
- Alt key, drag-and-drop with, 51
- ampersands in headers and footers, 177
- Analysis ToolPak, 325, 447
 - using, 326
- Analysis ToolPak VBA, 447
- animation
 - animated GIFs, inserting, 189
 - feedback with, 436
 - for organization charts, 228
- anonymous FTP sites, 426
- antivirus software, 363
- Apply button, 8



- Arabic, support for, 444
 - area charts, 263
 - arguments, 72, 74
 - array arguments, 105
 - with Formula AutoComplete, 76
 - lookup function arguments, 335
 - placeholder arguments, inserting, 103
 - arithmetic operators, 73
 - array arguments, 105
 - arrows
 - changing, 235
 - Chart Elements list arrow, 269
 - Counterbalance Arrows, 218
 - drawing, 234
 - Number Format list arrow, 43
 - Shape Outline button for, 234-235
 - tracer arrows, 100
 - up/down arrows, 8
 - artistic style, 197
 - ascending order sorts, 306-307
 - asterisk (*) character, 336
 - as you type corrections, 59
 - attachments
 - viruses, avoiding, 362-363
 - workbooks as, 386
 - XML Schema as, 388
 - Auditing feature
 - calculation errors, correcting, 97
 - worksheets, auditing, 100
 - AutoComplete, 40-41. *See also* Formula AutoComplete
 - enabling, 430
 - AutoCorrect, 35
 - adding entries, 59
 - for cell contents, 58-59
 - editing entries, 59
 - with spell-checking, 62
 - as you type, 59
 - AutoCorrect Exceptions dialog box, 58
 - AutoFill, 44-45
 - adjacent cell contents, filling with, 45
 - complex series, creating, 44
 - custom fill, creating, 45
 - formulas, copying, 78
 - List AutoFill, 305
 - repeating data, entering, 44
 - suppressing, 45
 - tables, entering data into, 305
 - AutoFill Options button, 44
 - AutoFilter
 - grouping dates in, 434
 - slicer, 316-317
 - PivotChart, 319
 - PivotTable, 314-317
 - table parts, displaying, 308
 - AutoFit for columns and rows, 120-121
 - Autoimport dialog box, 260
 - automated safe mode, 376-377
 - automatic calculations, 91
 - automatic page breaks, 178
 - AutoPublish, 420
 - AutoRecover, 31
 - AutoShapes, 258
 - AutoSum, 92-93
 - extended AutoSum, 93
 - subtotals, calculating, 92-93
 - average, formatting cell contents based on, 136-137
 - AVERAGE functions, 71, 72, 102
 - automatic calculations, 91
 - AutoSum calculations, 92-93
 - subtotals, calculation of, 337
 - 3-D cell references with, 83
 - AVERAGEIF function, 338-339
 - axes. *See* chart axes
- ## B
- backgrounds
 - adding/removing, 154
 - cell backgrounds, colors for, 150
 - chart backgrounds, changing, 286
 - for pictures, 207
 - removing background picture, 210
 - as shape fills, 240
 - themes, background colors in, 156
 - worksheet backgrounds, changing, 112
 - backup files, opening, 13
 - bar charts, 263
 - formatting, 285
 - beveling
 - to charts, 275
 - for data series, 283
 - precedence of, 246
 - to shapes, 247, 248-249
 - to SmartArt graphics, 225

- to WordArt text, 214
- BIFF12 file format, 24-25
- bitmap images
 - modifying, 207
 - resizing, 203
- black and white pictures, converting, 206
- boldfacing
 - comments, 383
 - text, 134-135
- borders
 - cells, adding to, 152-153
 - for cell styles, 167
 - in charts, 274
 - for data series, 283
 - drawing borders, 152-153
 - with Format Cells dialog box, 153
 - pictures, applying to, 200
 - Ribbon, adding or deleting with, 152
- bottom-alignment of objects, 253
- brightness, 205
 - Picture Manager, editing in, 443
- bright room effects to shapes, 248-249
- Bring to Forward
 - objects, 255-256
 - with SmartArt graphics, 220
- buttons, 8

C

- Calculation Options button, 72
- calculations. *See also functions*
 - automatic calculations, 91
 - with AutoSum, 92-93
 - circular references, locating, 101
 - errors, correcting, 97
 - iterative calculation, enabling, 437
 - keyboard commands for, 79
 - links in, 402
 - multiple results, calculating, 105
 - one time calculations, performing, 94-95
 - options, setting, 437
 - performing, 72
 - Status bar, displaying with, 91
 - in tables, 301
- capital letters. *See case sensitivity*
- Caps Lock, 9
- case sensitivity
 - AutoCorrect Exceptions dialog box for

- case, 58
- table data, sorting, 306
- text functions, 336
- categories for clip art, 192
- cell address, 35
- cell notes. *See comments*
- cell references, 80
 - circular references, locating, 101
 - examples, 72
- cells, 35. *See also alignment; cell references; charts; comments; labels; named ranges*
 - applying names to, 86-87
 - average, formatting cell contents based on, 136-137
 - borders, adding, 152-153
 - clearing cells, 47, 55
 - colors, adding, 150
 - conditional formatting, 136-137
 - copying
 - contents, 50-51
 - formats, 155
 - correcting contents of, 58-59
 - cutting contents of, 52
 - deleting, 54-55
 - cell styles, 168-169
 - name ranges, 89
 - from Watch window, 98
 - worksheet, cells in, 54-55
 - drag-and-drop
 - copying contents with, 50-51
 - enabling, 430
 - editing, 46, 430
 - cell styles, 168-169
 - names of cells, 89
 - filling backgrounds with colors, 150
 - finding and replacing, 56-57
 - formulas in, 74-75, 435
 - inserting blank cells, 54
 - locking/unlocking, 354
 - managing names, 88-89
 - moving cell contents, 52-53
 - names, 84-85
 - changing, 89
 - entering, 86-87
 - managing, 88-89
 - organizing names, 88-89
 - orientation of cell contents, 146-147

cells (continued)

- page breaks in, 178
- pasting cell data, 48
- patterns, applying, 150
- pointing to, 75
- ranking, formatting cell contents based on, 136-137
- searching for values, 123
- selecting, 37
- storing contents of, 49
- viewing names, 88-89
- Watch window, using, 98
- wrapping text in, 74
- zero value cells, 435

cell styles, 131

- applying, 166
- custom styles, creating, 167
- deleting, 168-169
- editing, 168-169
- for hyperlinks, 416
- merging, 168-169

Cell Styles gallery, 167

centering objects, 253

certification authority (CA), 358

chart area, 269

chart axes, 262, 276-277

- changing, 277
- editing, 267
- titles, changing, 279

chart floor, 286

charts, 261. *See also data series; legends; pie charts; PivotChart*

- background, changing, 286
- creating and inserting, 264
- data labels, 280-281
- data source, editing, 287-288
- data tables, showing/hiding, 280-281
- default charts, creating, 265
- deleting objects, 270
- editing, 266-267
 - chart data, 288-289
 - text, 265
- elements
 - formatting, 274-275
 - names, showing, 433
 - selecting, 269
- embedded charts, 264
- empty cells, displaying, 289

- enhancing charts, 287
- enlarging chart objects, 269
- error bars, 285
- formatting
 - bar charts, 285
 - elements, 274-275
 - line charts, 285
 - text, 284
- gridlines, changing, 276
- hidden data, displaying, 289
- labels, 280-281
- layout, applying, 272
- moving, 268
- options, 432
- other worksheets, moving to, 265
- pictures, inserting, 287
- resizing, 268
- shapes, inserting, 275, 287
- styles, 272-273
 - shape styles, applying, 275
- templates
 - applying, 293
 - creating, 292
 - managing, 294
- terminology, use of, 262
- text
 - adding, 287
 - editing, 265
 - formatting, 284
- text boxes in, 287
- 3-D effects in, 274, 286
- titles, 262
 - axes titles, changing, 279
 - changing, 278-279
 - types of, 263, 270-271

Charts Dialog Box Launcher, 264

ChartType dialog box, 293-294

chart wall, 286

check boxes, 8

- for Active controls, 466

Check for Updates button, 33

Check Office Documents that are from or link to suspicious Web sites option, 363, 372

Chinese, support for, 444

circles, drawing, 230

circular references, locating, 101

- class modules in VBA (Visual Basic for Applications), 451
- clearing
 - cells, 47, 55
 - conditional formatting, 141
 - data tables, 297
 - print area, 182
 - validation circles, 322
- Clear Rules commands, 141
- clear surfaces for shapes, 248-249
- clip art, 187
 - adding/removing clips, 194
 - categories, organizing into, 192
 - downloading clips, 191
 - locating and inserting, 188
 - media clips, 189
 - objects, 188
 - properties, changing, 193
 - searching, 187, 188
 - Web for clips, 191
 - Web, accessing on, 190-191
- Clip Art task pane, 188
 - properties of clip, changing, 193
 - working with, 192-193
- Clipboard
 - cell contents, storing, 49
 - formulas, copying, 78-79
 - multiple items, cutting, 52
 - objects, copying and moving, 237
 - pasting data with, 48
- Clipboard Dialog Box Launcher, 49, 237
- Clip Organizer, 188
 - adding/removing clips with, 194
 - motion clips, playing, 189
 - properties of clip, changing, 193
 - shapes, adding, 260
 - sound clips, playing, 189
 - working with, 192-193
- closing workbooks, 34
- code for VBA, 450
- Collapse Dialog button, 85
 - chart data, editing, 288-289
 - for data validation, 322
- colors. [See also fonts; pictures; shapes; themes](#)
 - for borders, 152-153
 - cells, adding to, 150
 - custom colors, adding, 151

- formatting with color scales, 138-139
- hyperlink colors, 156
- for menus, 151
- in organization charts, 228
- Picture Manager, editing in, 443
- properties of, 159
- schemes, selecting, 428
- SmartArt graphics, changing for, 223
- tabs, adding or removing colors to, 154
- WordArt fill colors, changing, 212-213
- of worksheet tab names, 115

Column Differences option, 38

columns and rows. [See also tables](#)

- data series, plotting, 288
- default column width, changing, 120
- deleting, 119
- display options, 435
- freezing/unfreezing, 122
- height of rows, adjusting, 120-121
- hiding/unhiding, 117
- inserting, 118
- multiple columns and rows
 - deleting, 119
 - inserting, 118
 - selecting, 116
- pasting cells from, 53
- printing
 - options, 180-181
 - print area for, 182
- selecting, 116
- showing/hiding, 117
- text to columns, converting, 321
- Use row and column names option, 87
- width of columns, adjusting, 120-121

COM add-ins, 447

- loading/unloading, 448-449

combo boxes for Active controls, 466

COM (Component Object Model). [See Active controls; COM add-ins](#)

comma delimiter, 321

command buttons, 4

- for Active controls, 466

commands

- from Office menu, 5
- Quick Access Toolbar, adding to, 441
- from Shortcut menu, 5

Comma Style button, 132

- comments
 - adding comments, 382
 - clearing, 47
 - deleting, 383
 - display options, 433
 - editing, 383
 - reading comments, 382
- comparison
 - formatting cell contents for, 136
 - operators, 73
- compatibility, 14, 24
 - of functions, 347
 - of workbooks, 26
- complex series, creating, 44
- compressing pictures, 204
 - in Picture Manager, 443
- Compression Settings dialog box, 204
- conditional formatting, 136-137
 - clearing, 141
 - with color scales, 138-139
 - with data bars, 138
 - editing rule precedence, 142
 - finding cells with, 143
 - with icon sets, 138-139
 - rules, creating, 140
 - specialized conditional formatting, applying, 138-139
- Conditional Formatting Rules Manager, 142
- conditional formulas
 - examples of, 106
 - with nested functions, 106
- connecting objects, 254
- Connection Properties dialog, 404-405
- Connection Status, checking, 21
- consolidating data, 400-401
- constants
 - defined, 72
 - in names, 108
- contextual spelling, checking, 63
- contextual tabs, 4
- contiguous cells, 35, 37
- contours
 - for data series, 283
 - for shapes, 248-249
- contrast, 205
 - Picture Manager, editing in, 443
- Convert to Columns Wizard, 321
- Copy command for worksheets, 112
- copying. [See also Clipboard; pasting](#)
 - clip art, 193
 - dialog box, files in, 13
 - hyperlinks, 416
 - macro modules, 459
 - objects, 237
 - Web tables to worksheet, 421
 - window contents, 198
 - worksheets, 112-113
- correcting. [See also AutoCorrect; errors](#)
 - cell contents, 58-59
- Counterbalance Arrows, 218
- COUNT functions, 102
 - automatic calculations, 91
 - AutoSum calculations, 92-93
 - 3-D cell references with, 83
- COUNTIF function, 338-339
- Create a copy check box, 112
- cropping. [See pictures](#)
- CSS, Web pages allowing, 417
- CSV format, 25
- Ctrl key, 237
- currencies
 - Euro Conversion Wizard, 327
 - Euro CurrencyTools, 447
 - format for, 43
 - formatting numbers in, 133
- Currency Style button, 132
- curved connectors, 254
- customizing, 427. [See also fills; page layout; themes](#)
 - advanced properties, 438
 - cell styles, 167
 - colors, 151
 - dictionaries, 64-65
 - margin settings, 175
 - Quick Access Toolbar, 7
 - shadows, 251
 - shapes, creation of, 440
 - templates, 130
 - text objects, creation of, 440
 - themes, colors for, 159
 - workbook views, 126
- cut, copy, paste options, 431
- cutting cell contents, 52
- Cyrillic, keyboard configuration for, 444

D

- DAISY (digital Accessible Information System), 27
- dark edges for shapes, 248-249
- dark variations for pictures, 206
- data. *See also alignment; external data*
 - labels, 280-281
 - for PivotTable, 319
 - simplifying entry, 43
 - validation, 322
- Data Analysis dialog box, 326
- data bars, 138
- data connections, security settings for, 374
- Data Connection Wizard, 403
- data maps. *See XML (Extensible Markup Language)*
- data markers
 - for charts, 262
 - editing, 266
- data series, 262, 264
 - adding, 290
 - changing, 291
 - deleting, 290
 - editing, 288
 - formatting, 283
 - order, changing, 291
 - plotting, 288
 - type of chart, changing, 271
- Data tab, 4
- Data Validation dialog box, 323
- dates and times
 - formats for, 43
 - functions, 104, 340-341
 - long date format, 43
 - short date format, 43
 - worksheets, entering on, 42
- dBASE, 403
 - opening files, 13
- DDE (Dynamic Data Exchange), 436
- debugging macros, 458
- Debug toolbar, 458
- decimals, automatic insertion of, 430
- Decrease Decimal button, 132
- defined names, 84
- Delete Cropped Areas Of Picture options, 204
- deleting. *See also cells; Groove; pictures; ranges; shapes; tables; themes*
 - borders, 152-153
 - chart objects, 270
 - clip art, 194
 - columns and rows, 119
 - comments, 383
 - data series, 290
 - dialog box, files in, 13
 - digital signatures, 359
 - file encryption, 355
 - font attributes, 133
 - macros, 457
 - name ranges, 89
 - numeric formats, 133
 - page breaks, 179
 - passwords, 357
 - PivotChart, 318
 - PivotTable, 310
 - Quick Access Toolbar, items from, 7
 - SmartArt graphics, shapes from, 219
 - Status bar, items from, 9
 - text boxes, 233
 - Text pane, deleting line in, 219
 - themes, custom colors in, 159
 - values, keeping formulas, 96
 - vertex on freeform, 236
 - Watch window, cells from, 98
 - WordArt text, 211
 - workbooks, custom views in, 126
 - worksheets, 111
- delimiters, 321
- dependent cells, 80
- depth
 - for data series, 283
 - shapes, adding to, 248-249
- descending order sorts, 306-307
- designation files, 394
- detailed data, 337
- Developer tab. *See Ribbon*
- diagnosing problems. *See repairing problems*
- dialog boxes. *See also specific types*
 - navigating, 8
 - options, choosing, 8
- Dialog Box Launchers, 3, 8

- dictionaries
 - custom dictionaries, 64-65
 - for foreign languages, 444
 - Research task pane for accessing, 68
- DIF format, 25
 - opening files, 13
- digital cameras, inserting pictures from, 195
- digital signatures
 - adding/removing, 359
 - on macros, 460
 - for workbooks, 358-359
 - XPS support for, 186
- direction
 - for gradient fills to shape, 245
 - moving, 430
 - of WordArt text, 215
- Disabled Items dialog box, 447
- display view options, setting, 433
- distributing objects, 252
- Document Information Panel, 28
 - Mark as Final command, 378
 - template, selecting, 470
- Document Inspector, 350-351
- Document Management Servers
 - Saving to SharePoint Server, 498
 - Opening from SharePoint Server, 499
- documents
 - advanced properties, changing, 438
 - digital signatures, adding, 359
 - Document Management task pane inspecting, 350-351
 - visible signature line, adding, 360-361
- documents (Word)
 - Office Web App, creating, 485
- DocumentThemes folder, 163-164
 - deleting custom themes from, 164
- Download.com, 363
- downloading
 - clip art, 191
 - privacy options, setting, 372
 - Publish as PDF or XPS add-in, 185
 - viruses, avoiding, 362-363
 - Web updates, 33
 - workbook templates, 11
- drag-and-drop. [See also cells](#)
 - to different worksheets, 51
 - moving cell contents, 52

- in Text pane, 217
- drawing
 - borders, 152-153
 - freeforms, 236
 - shapes, 230
 - ungrouping/regrouping drawings, 259
- Drawing tab, 4
- drop-down lists
 - creating, 323
 - tables, entering data into, 305
- Duplicate command, 237
- duplicate words
 - checking for, 62
 - flagging, 63

E

- Edit Data Source dialog box, 288-289
- editing. [See also cells; charts](#)
 - AutoCorrect entries, 59
 - clip art keywords, 193
 - comments, 383
 - conditional formatting rule precedence, 142
 - embedded objects, 398
 - of final workbook, 378
 - formulas, 78-79
 - freeforms, 236
 - hyperlinks, 414
 - macros, 459
 - options, setting, 430
 - in Picture Manager, 443
 - range names, 89
 - read-only workbook, 378
 - Refers to box contents, 108
 - SmartArt graphics, shapes in, 221
 - templates, 130
 - WordArt text, 211
- Edit Points command, 236
- eFax, 387
- effects. [See also 3-D effects](#)
 - for organization charts, 228
 - picture effects, applying, 201
 - to shapes, 246-247
 - to SmartArt graphics, 225
 - theme effects, creating, 162
 - to WordArt text, 214
- elbow connectors, 254

elements. [See also charts](#)
header or footer, inserting into, 177
security for, 352
table elements, formatting, 300
workbook elements, showing/hiding, 124
XML elements, 390

e-mail. [See also attachments](#)
hyperlinks to address, 414
spam, 362
viruses, avoiding, 362-363

embedding, 394
in charts, 264
editing embedded objects, 398
existing object, embedding, 398-399
new object, embedding, 398-399

Enable background error checking check box, 99

encryption to workbooks, adding, 355

entering cell contents, 148

error bars, 285

Error checker
circular references, locating, 101
formula errors, correcting, 98-99

errors
add-in user interface errors, showing, 436
calculation errors, correcting, 97
formulas, correcting errors in, 98-99

Esc key, 155

Euro CurrencyTools, 447
Euro Conversion Wizard, 327

European languages, support for, 444

Evaluate Formula dialog box, 106-107

event procedures in VBA (Visual Basic for Applications), 451

Excel add-ins, 325, 447
loading/unloading, 448

Excel Options dialog box, 434-435
Web updates from, 33

Excel window, viewing, 3

exclusion dictionaries, 64-65

existing workbooks. [See workbooks](#)

Expand dialog button, 85

Expansion Pack button, 391

exploding pie slice, 282

exporting. [See importing and exporting](#)

expressions, defined, 72

extended AutoSum, 93

external content security options, 374-375

external data
changing connection properties, 405
connections, managing, 403-404
existing connection, connecting with, 404
from Microsoft Access, 408-409
new data source, defining, 406
refreshing data from, 405
security for, 403
sources, 403

F

faxing workbooks, 387

feedback options, 436

file block settings, 364, 367

file encryption, adding, 355

file extensions, displaying, 14

file formats
list of, 25
workbook file formats, 24-25

file sharing. [See sharing](#)

File tab, 3, 5
recently opened files in, 13

FileZ, 363

fill handles
with AutoFill, 44
enabling, 430

fills. [See also gradient fills; shape fills](#)
for cell styles, 167
in charts, 274-275
customizing, 45
gradient fills, 245
for data series, 283
picture fills, 242
shapes, adding to, 240-241
for SmartArt graphics, 224
textures, 243
WordArt text, applying to, 212-213

filtering, slicer, 316-317

filtering cell names, 88

Financial functions, 104, 343

Find & Select button, 143

finding and replacing, 35. [See also searching](#)
cell contents, 47, 56-57
formatting, finding and replacing, 170

- Flash movies with Active controls, 469
- flat surfaces for shapes, 248-249
- flipping
 - in Picture Manager, 443
 - shapes, 257
- flow of text, controlling, 148
- folders
 - DocumentThemes folder, 163-164
- Font Color button, 149
- fonts. [See also cell styles; themes](#)
 - changing font size, 134-135
 - for chart text, 284
 - colors, 134-135, 149
 - for comments, 383
 - deleting attributes, 133
- footers. [See headers and footers](#)
- foreign languages
 - adding to Office programs, 444
 - thesauruses, 67
 - translating text to, 69
- Format Cells dialog box, 43
 - alignment options, 147
 - borders, applying, 153
 - numbers, formatting, 133
 - text, formatting, 134-135
- Format Painter
 - applying styles with, 155
 - with tables, 298
- Format Shape dialog box, 246
 - for picture effects, 201
 - shadow options, 251
 - undoing changes in, 240, 242
 - WordArt text with, 215
- formatting. [See also charts; conditional formatting; SmartArt graphics; tables](#)
 - average, formatting cell contents based on, 136-137
 - comparison, formatting cell contents for, 136
 - copying cell formats, 155
 - finding and replacing, 170
 - hyperlinks, 416
 - numeric formats, 132-133
 - PivotTable reports, 313
 - ranking, formatting cell contents based on, 136-137
 - sparkline, 144-145
 - text, 134-135
 - in Text pane, 219
 - values, 43
 - WordArt text, 212-213
- forms. [See Groove](#)
- Formula AutoComplete, 76-77
 - keyboard navigation, 77
 - named cell or range, entering, 86
 - setting, 437
 - turning on/off, 77
- formula bar, 433
 - cell contents, editing, 46
 - editing formulas with, 78
 - resizing, 74-75, 84
- formulas, 36, 37, 71. [See also calculations; cell references; nested functions](#)
 - array formulas, creating, 105
 - AutoFill, copying with, 78
 - in cells, 74-75, 435
 - Clipboard, copying with, 78-79
 - columns and rows, rechecking on deleting, 119
 - definitions, 72
 - deleting values, keeping formulas, 96
 - displaying in cells, 74-75
 - editing, 78-79
 - error displays, avoiding, 97
 - errors, correcting, 98-99
 - with Formula AutoComplete, 76-77
 - Goal Seek, 329
 - links in, 402
 - multiple results, calculating, 105
 - one time calculations with, 94-95
 - options, setting, 437
 - order of precedence, 72, 74
 - ranges, using, 90
 - showing/hiding, 354
 - simple formula, creating, 74-75
 - table names in, 437
 - value, converting formula to, 85
 - Watch window, using, 98
- Formulas tab, 4
- fraction format, 43
- freeforms, 229
 - drawing, 236
 - editing, 236
 - vertices of, 236

- freezing/unfreezing columns and rows, 122
- FTP (File Transfer Protocol)
 - accessing sites, 426
 - adding or modifying locations, 426
- Full Screen view, 29
- Function Library, 104
- function procedures in VBA (Visual Basic for Applications), 451
- functions, 71. [See also nested functions](#)
 - commonly used functions, 102
 - creating, 103
 - defined, 72, 102
 - entering, 102
 - with Function Library, 104
 - Insert Function button, entering with, 103
 - in names, 108
 - ScreenTips for, 433
 - summarize data functions, 338-339
 - text functions, 336
- Function Wizard button, 103

G

- general options, setting, 428
- GetPivotData functions, 437
- GIF format, 207
 - animated GIFs, inserting, 189
- glow, applying
 - to charts, 275
 - to organization charts, 228
 - to pictures, 201
 - to shapes, 247
 - to SmartArt graphics, 225
 - to WordArt text, 214
- Goal Seek, 329
- Go To Special dialog box
 - cells, locating, 38
 - formulas to values, converting, 96
- gradient fills
 - custom gradient fills, 245
 - shapes, applying to, 244-245
 - WordArt, applying to, 212-213
- grand totals, 337
- graphics, 187. [See also clip art; pictures; SmartArt graphics; WordArt](#)
 - formats, adding, 195
 - for hyperlinks, 416

- grayscale mode for pictures, 206
- Greek, keyboard configuration for, 444
- gridlines
 - chart gridlines, changing, 276
 - in charts, 262
 - display options, 435
 - printing, 181
- Groove, 494-497
 - alerts, 496
 - creating workspace, 494-495
 - deleting
 - workspace, 494
 - inviting users to, 497
 - launching, 494
 - Microsoft SharePoint Workspaces, 494-497
 - permissions, changing, 497
 - roles in, 497
 - sharing files in, 496
 - starting, 494
 - tools, Documents, managing, 496
- grouping/ungrouping
 - creating groups, 320
 - outline data, 320
 - shapes, 258-259
 - with SmartArt graphics, 220
 - tables, 258
 - worksheets, 112
- Guest role in Groove, 497

H

- hackers. [See security](#)
- handles. [See also fill handles](#)
 - for charts, 262
 - on shapes, 230
- hardware graphics acceleration, 433
- harmful attacks, avoiding, 362-363
- headers and footers, 171
 - elements in header or footer, inserting, 177
 - inspecting information in, 351
 - options for, 177
 - predefined header or footer, adding, 176
 - in tables, 300
 - watermarks in, 177
- Hebrew, support for, 444
- height of rows, adjusting, 120-121

help
 exclusion dictionaries, finding, 65
 with Help Viewer, 20, 21
 Microsoft, contacting, 33
 searching for, 21
Help Viewer, 20
 Connection Status, checking, 21
hiding. [See showing/hiding](#)
high-low lines, 285
HLOOKUP function, using, 334-335
Home tab, 4
homographs, 362
horizontal alignment, 146-147
 of WordArt text, 215
horizontal page breaks, 178
HSL color mode, 151
 in themes, 159
HTML (Hypertext Markup Language), 25,
 411. [See also Web pages](#)
hue of color, defined, 159
hyperlinks, 395, 411
 colors, 156
 creating, 414
 editing, 414
 formatting, 416
 jumping to, 415
 removing, 415

I

icon sets, formatting with, 138-139
Image button for Active controls, 466
image options, 432
importing and exporting, 394
 Access database into workbook, export-
 ing, 408
 copy and past for exporting, 396
 other program format, exporting files to,
 397
 in Picture Manager, 442
 SharePoint lists, exporting tables to, 324
 text files, 397, 410
 Web queries, data from, 423-424
 XML data, 391-392
Import Text Wizard, 410
Increase Decimal button, 132
indenting text in Text pane, 219
InfoPath Form Template files, 470

Information functions, 346
Insert Function dialog box, 72, 103
Insert tab, 4
Inside borders, 153
inspecting documents, 350-351
IntelliMouse, 16
InterFAX, 387
Internet. [See also queries; Web pages](#)
 clip art, accessing, 190-191
 fax, sending workbooks by, 387
 FTP (File Transfer Protocol) documents,
 426
 Web updates, 33
Internet Assistant VBA, 447
Internet Options dialog box, 412
invisible content, inspecting, 351
italicizing
 comments, 383
 text, 134-135

J

Japanese
 support for, 444
JPG/JPEG format
 pictures, modifying, 207

K

keyboard
 for foreign languages, 444
 Formula AutoComplete, navigation of, 77
 formulas, commands for recalculating,
 79
 workbooks, navigating in, 17
KeyTips, 4
keywords for clip art, 193

L

labels
 for Active controls, 466
 with AutoComplete, 40-41
 chart labels, changing, 280-281
 consolidating data including, 400
 data labels, 280-281
 entering, 36, 40-41
 long labels, truncating, 41
 number as label, entering, 40

- relative cell names, 89
- text labels, entering, 40
- landscape orientation, 172
- LANs (local area networks), 470
- Lavasoft's Ad-aware, 362
- layouts. *See also page layout*
 - chart layouts, applying, 272
 - for organization charts, 228
 - PivotTable reports, 313
 - for SmartArt graphics, 223
- left-alignment of objects, 253
- legends, 262
 - changing, 280
 - editing, 267
- LEN function, 336
- light and dark variations for pictures, 206
- lighting effects for shapes, 248-249
- line charts, formatting, 285
- lines, 229
 - changing, 234
 - drawing, 234
 - Quick Styles, adding, 234
- links and linking, 394-395. *See also hyperlinks*
 - charts to worksheets, 278
 - creating links, 398
 - existing object, linking to, 398-399
 - security settings for workbooks, 374-375
 - updating links, 399, 436
 - worksheets or workbooks, creating links between, 402
- List AutoFill, 305
- list boxes, 8
 - for Active controls, 466
- Lists and Galleries, 3
- live preview, 4
 - enabling, 428
 - for picture effects, 201
 - for recolored pictures, 206
 - for SmartArt graphics, 216
 - WordArt text effects, 214
- Lock Drawing Mode, 232
- locking/unlocking cells, 354
- Logical functions, 104, 342
- logical operators/conditions
 - data validation and, 322

- tables, searching, 309
- long date format, 43
- Lookup function, 104
 - HLOOKUP function, using, 334-335
 - VLOOKUP function, using, 334
- LOWER function, 336
- luminosity of color, defined, 159

M

- macros. *See also workbooks*
 - controlling, 458-459
 - copying macro modules, 459
 - creating, 456
 - debugging, 458
 - deleting, 457
 - digital signatures, adding, 460
 - editing, 459
 - opening, 13
 - Personal Macro Workbook option, 454, 455
 - recording, 455
 - running, 457
 - security of, 352, 370
 - self-signing certificates for, 460
 - Status bar, checking with, 9
 - stopping macros, 457
 - toolbar, assigning to, 461
 - Trust Center
 - opening workbooks with, 463
 - security options, setting, 370
 - understanding, 454
 - viruses, avoiding, 362-363
 - writing, 370
- maintenance, performing, 32
- Manager role in Groove, 497
- Manage Templates button, 294
- many to many pasting of data, 48
- many to one pasting of data, 48
- margins
 - customizing settings, 175
 - mouse, changing with, 174-175
 - settings, changing, 174-175
- Mark as Final command, 378
- marquees for copying cell contents, 50
- Math & Trig functions, 104, 344
- matte surfaces to shapes, 248-249

MAX functions

- automatic calculations, 91
- AutoSum calculations, 92-93
- 3-D cell references with, 83

 maximizing/minimizing

- Ribbon, 4, 6
- windows, 18

 McAfee antivirus software, 363

 media clips, 189

 menus. *See also specific types*

- colors, adding, 151

 merging cells, 148

- styles, 168-169

 Message Bar

- macro problems, notification of, 460
- security options, changing, 371

 metadata, 350-351

 metal surfaces to shapes, 248-249

 MHT/MHTML formats, 25

 Microsoft Access, 403

- exporting table into workbook, 408
- opening database files, 13
- PivotTable from Access database, creating, 408-409

 Microsoft DirectShow, 189

 Microsoft FoxPro, 403

 Microsoft Office. *See also Groove*

- harmful attacks, avoiding, 362-363
- for help, 33
- maintenance, performing, 32
- safe modes, 376-377

 Microsoft Office Picture, 427

 Microsoft Organization Chart, 227

 Microsoft Paint, 207

 Microsoft Picture Manager. *See Picture Manager*

 Microsoft PowerPoint

- organization charts with, 227
- SmartArt graphics in, 187

 Microsoft SharePoint Workspaces. *See SharePoint*

 Microsoft SQL Server OLAP services, 403

 Microsoft Templates. *See templates*

 Microsoft Windows

- harmful attacks, avoiding, 363
- Media Player, 189

 middle-alignment of objects, 253

 MIN functions

- automatic calculations, 91
- AutoSum calculations, 92-93
- 3-D cell references with, 83

 minimizing. *See maximizing/minimizing*

 Mini-Toolbar, 5

- options, setting, 428
- text formatting buttons, 134

 mixed cell references, 80

- creating, 82

 modules in VBA (Visual Basic for Applications), 451

 Modules window, 451-452

 More controls for Active, 466

 motion clips, 189

 mouse

- columns and rows, adjusting width and height of, 120-121
- resizing windows with, 18
- workbooks, navigating in, 16

 Move command, 112

 movies, Active controls for, 469

 moving

- cell contents, 52-53
- charts, 268
- clip art, 193
- dialog box, files in, 13
- direction, 430
- hyperlinks, 416
- objects, 237
- page breaks, 179
- Quick Access Toolbar, 6-7
- Text pane, 218
- worksheets, 112

 multiple columns and rows. *See columns and rows*

 MyFAX, 387

 My Templates, 292

N

Name box, 86

 named ranges, 71, 84-85

- changing, 89
- deleting, 89
- entering, 86-87
- formulas, using in, 90
- managing, 88-89
- organizing names, 88-89

Name Manager, 88-89
filter options, 88
names. [See also cells; named ranges; renaming](#)
constants in names, using, 108
functions in names, using, 108
workbooks, default names for, 10
for worksheets, 110
navigating. [See also Groove](#)
dialog boxes, 8
Formula AutoComplete, 77
in workbooks, 16-17
nested functions
conditional formulas with, 106
defined, 72
evaluating nested formulas, 107
New Formatting Rule dialog box, 140
New Name dialog box
cells, naming, 84-85
ranges, naming, 84-85
Refers to box contents, editing, 108
New Workbook dialog box, 11
new workbooks, creating, 10-11
1924 date system, 436
noncontiguous cells, 35, 37
Normal view, 29
notebook (OneNote)
Office Web App, creating, 485
Number Format list arrow, 43
numeric formats, 43, 132-133. [See also cell styles](#)
charts, changing formats on, 274
deleting attributes, 133
separators, using, 430
numeric keypad, 42
Num Lock, 42
Status bar, checking with, 9

O

Object Browser, 451-452
objects, 229. [See also shapes](#)
alignment of, 252-253
connecting, 254
copying, 237
distributing, 252
flipping, 257
hidden objects, viewing, 256

moving, 237
rotating, 257
Selection pane, selecting with, 255
stacking order, changing, 256
ODBC (Open Database Connectivity), 403
Office.com
clip art, inserting, 188
options, 436
SmartArt graphics, 216
Office Clipboard. [See Clipboard](#)
Office Data Connection (ODC) files, 404
Office Groove. [See Groove](#)
Office Mobile, 500
Office Web Apps
accessing documents, 480-481
browser support, 472-473
collaborating, documents with, 492-493
compare to desktop app, 478-479
creating documents, 485
downloading files, 490
file compatibility, 472
introduction, 471-472
Microsoft Silverlight, 472, 474-475
Office Mobile, 500
opening documents, 481
preparing to use, 472
saving documents, 476-477
saving files, new name, 490-491
using, 472
Windows Live ID, 471-472, 474-475
sign-in, 475
OLE (object linking and embedding), 394-395. [See also Active controls](#)
one-input data table, creating, 328
one time calculations, performing, 94-95
one to many pasting of data, 48
one to one pasting of data, 48
Open and Repair workbooks, 12
Open as Copy workbooks, 12
Open dialog box
default file location, changing, 13
file formats, opening, 13
Open in Browser workbooks, 12
opening. [See also workbooks](#)
Autoimport dialog box, 260
file formats, 13
Picture Manager, 442

opening (continued)

- templates, 129
- Web page, workbook as, 412
- workspace files, 127
- XML files, 13, 393
- Open or Save As dialog box, 28
- operators
 - defined, 72
 - order of precedence, 72, 74
 - types of, 73
- Option button, 8
 - for Active controls, 466
- Oracle, 403
- order of precedence, 72, 74
- organization charts
 - colors in, 228
 - creating, 227
 - dotted lines in, 228
 - layouts, changing, 228
 - Quick Styles, applying, 228
 - shapes, adding, 227
- orientation
 - of cell contents, 146-147
 - page orientation, changing, 172
 - SmartArt graphics, changing for, 222
- outlines. [See also shape outlines](#)
 - on borders, 153
 - clearing, 320
 - creating, 320
 - SmartArt graphics, shape outlines for, 224
 - ungrouping data, 320
 - to WordArt text, 212-213
- Oval button, 230

P

- Page Break Preview view, 29
- page breaks, 178-179
 - deleting, 179
 - moving, 179
 - previewing, 179
- page layout, 171. [See also themes customizing](#)
 - margin settings, 175
 - size of page, 173
 - headers and footers, adding, 176-177
 - margins, adjusting, 174-175
 - orientation of page, changing, 172
 - page breaks, 178-179
 - print scaling, changing, 172-173
 - size of page, changing, 173
- Page Layout tab, 4
- Page Layout view, 171
 - switching to, 29
- Page Number Status bar, 9
- Page Setup dialog box. [See also page layout](#)
 - print scaling, setting up, 172
- painting cell formatting, 155
- Paint Shop Pro, 207
- panes. [See also window panes](#)
 - task panes, 15
- paper sizes, scaling for, 436
- Paradox, 403
- parental controls, setting, 373, 439
- Participant role in Groove, 497
- passwords, 349
 - changing, 357
 - deleting, 357
 - for FTP sites, 426
 - opening workbooks with, 357
 - range passwords, 353
 - strong passwords, using, 356
 - for workbooks, 356-357
 - for worksheets, 352-353
- Paste Options button, 422
- Paste Special
 - calculations, performing, 94-95
 - formulas, copying, 79
- pasting, 48. [See also copying](#)
 - columns to rows, cells from, 53
 - formula data, 79
 - rows to columns, cells from, 53
 - with special results, 50-51
 - Web table data, 421
- Past Special button, 50-51
- patterns for cells, 150
- PDF format, 1, 25. [See also workbooks](#)
- percentage format, 43
 - enabling, 430
- Percent Style button, 132
- permissions
 - Groove workspace permissions, changing, 497
 - Status bar, checking with, 9

- Personal Macro Workbook option, 454, 455
- phishing, 362
- Picture Border button, 200
- Picture Corrections options, 205
- Picture Effects gallery, 201
- Picture Manager
 - discarding changes, 443
 - editing in, 443
 - locating pictures in, 442
 - opening, 442
- Picture Quick Style gallery, 198
- pictures. *See also* [brightness](#); [contrast](#); [Picture Manager](#); [shapes](#)
 - artistic style, 197
 - backgrounds for, 207
 - removing, 210
 - borders, applying, 200
 - brightness, 205
 - changing, 195
 - in charts, 287
 - color modes for, 206
 - compressing, 204, 443
 - contrast, 205
 - correcting, 205
 - cropping, 208-209
 - with aspect ratio, 208
 - deleting cropped areas of pictures, 204
 - with fill or fit, 209
 - Picture Manager, editing in, 443
 - precisely cropping, 208-209
 - deleting
 - borders, 200
 - cropped areas of pictures, 204
 - effects, applying, 201
 - files, inserting pictures from, 195
 - fills to shapes, applying, 242
 - original state, resetting to, 207
 - precisely resizing, 202
 - Quick Styles, adding, 198
 - recoloring, 206-207
 - redisplaying cropped pictures, 208
 - removing background, 210
 - resizing, 202-203
 - rotating, 208-209
 - with Picture Manager, 443
 - 3-D rotation, 201
 - soften, 205

- scaling pictures, 202-203
- screen shot, inserting, 196
- sharpen, 205
- transparent background, setting, 207
- WordArt, applying to, 212-213
- Picture Shape gallery, 199
- Picture SmartArt, 226
- PictureTools tab, 4
- pie charts, 263
 - exploding pie slice, 282
- Pin icon for workbooks, 12
- PivotChart, 264
 - Access database, creating from, 408-409
 - analyzing data with, 310
 - modifying reports, 319
 - refreshing data in, 319
 - renaming, 318
 - summarizing data in, 318
 - updating, 311
- PivotChart Filter Pane, 318
- PivotTable
 - Access database, creating from, 408-409
 - analyzing data with, 310
 - AutoFilter, 314-315
 - calculation, 314-315
 - conditional formatting rules, clearing, 141
 - creating reports, 310
 - data source for, 319
 - field settings, changing, 312
 - formatting reports, 313
 - GetPivotData functions, 437
 - modifying reports, 312
 - Quick Styles, 313
 - refreshing data in, 319
 - renaming, 318
 - repeating labels, 314-315
 - scenarios, reports from, 331
 - searching, 315
 - security for reports, 352
 - showing values, 314-315
 - slicer, 316-317
 - sorting, 315
 - updating, 311
- placeholders
 - arguments, inserting, 103
 - SmartArt graphic, text in, 217
- plastic surfaces for shapes, 248-249

Playback Status bar, 9
plot area, 269
 background for, 286
PMT function, 102
PNG format
 pictures, modifying, 207
 shapes as pictures, saving, 198
 Web pages allowing, 417
points, 120, 135
polygons. [See freeforms; shapes](#)
Pop-up Blocker, 362
portrait orientation, 172
precedence order, 72, 74
presentation (PowerPoint)
 Office Web App, creating, 485
presets. [See also 3-D effects](#)
 to charts, 275
 gradient fills as, 244
 shapes, adding to, 244, 246
 to SmartArt graphics, 225
preview buttons, 8
previewing. [See also live preview](#)
 page breaks, 179
 Web pages, 413
 worksheets, 171, 183
Print dialog box, 183
printer fonts, 135
printing, 171. [See also columns and rows](#)
 all of worksheet, 184
 comments, 172
 formulas, 75
 gridlines, 181
 letters of columns, 181
 numbers of rows, 181
 part of worksheet, 180, 184
 print area, setting, 182
 scaling, changing, 172-173
 specific number of pages, fitting worksheet on, 181
 tables, 298
 titles for columns and rows, 180
Print Preview, 4, 183
Privacy Options. [See Trust Center](#)
procedures in VBA (Visual Basic for Applications), 451
Product function, 83
program tabs, 4
Project Explorer, 451-452

projects in VBA (Visual Basic for Applications), 451
proofing options, changing, 63
PROPER function, 336
proportional shapes, drawing, 230
proprietary company information, accessing, 68
Protected view, 364, 366-367
protection. [See security](#)
Protect Workbook button, 352
Publish as PDF or XPS add-in, 185, 186
publishing, 411. [See also Web pages](#)
 Publish as PDF or XPS add-in, 185, 186
 trusted publishers, 365

Q

queries
 creating database query, 407
 data from Web queries, importing, 423-424
 importing, 423-424
 new data source, defining, 406
 opening query files, 13
 refreshable Web queries, creating, 422
 saving Web queries, 424
Query Wizard, 403, 406-407
question mark (?) character, 336
Quick Access Toolbar, 3, 5
 commands, adding, 441
 customizing, 7
 macros, assigning, 461
 Quick Print button, 184
 resetting, 441
Quick Print button, 184
Quick Styles. [See also Shape Quick Style](#)
 to lines, 234
 for organization charts, 228
 for pictures, 198
 to shapes, 238
 for SmartArt graphics, 222
 to tables, 298
quitting Excel, 34

R

range references, 37
ranges, 37. [See also calculations; named ranges](#)

- applying names to, 86-87
- extending formats, 430
- formulas, using in, 90
- managing names, 88-89
- multisheet ranges, selecting, 39
- passwords for, 353
- special ranges, selecting, 39
- tables, converting, 302-303
- viewing names, 88-89
- zooming on name range, 88

ranking, formatting cell contents based on, 136-137

read-only workbooks, 12

- marking as, 378
- prompt to, 380

recent documents, 433

- file extensions, displaying, 14

recoloring pictures, 206-207

Recolor Picture Quick Style gallery, 206

recording macros, 455

recovering workbooks, 30-31

Rectangle button, 230

red eye removal, 443

redoing actions, 70

Reference function, 104, 334-335

reference operators, 73

reflections

- to charts, 275
- to pictures, 201
- to shapes, 247
- to SmartArt graphics, 225
- to WordArt text, 214

refreshing

- external data source, data from, 405
- PivotChart/PivotTable data, 319
- Web queries, 422

relative cell references, 80

- absolute references, changing, 81
- labeling names, 89

removing. [See adding/removing; deleting](#)

renaming

- dialog box, files in, 13
- PivotChart or PivotTable, 318
- worksheets, 110

repairing problems

- macros, debugging, 458
- Microsoft Office problems, 32
- workbook problems, 32

repeating data, entering, 44

REPLACE function, 336

replacing. [See finding and replacing](#)

research

- changing options, 439
- parental controls, setting, 373, 439
- topics, researching, 68

Research task pane

- researching topics with, 68
- translating text with, 69

Reset Picture button, 199

resizing

- cell names, accommodating, 88
- charts, 268
- formula bar, 74-75, 84
- page size, 173
- in Picture Manager, 443
- shapes, 230-231
- SmartArt graphics, 221
- tables, 302-303
- task panes, 15
- Text pane, 218
- vector images, 188
- watermark picture, 177
- window panes, 15
- windows, 18

Review tab, 4

RGB color mode, 151

- defined, 159
- in themes, 159

Ribbon, 1, 3. [See also tabs](#)

- add-in security options, 368
- alignment, changing, 146
- borders, applying or deleting, 152
- Chart Elements list arrow, 269
- Developer tab
 - setting options, 453
 - showing/hiding, 389
- maximizing/minimizing, 4, 6
- using, 4

right-alignment of objects, 253

R1C1 reference style, 437

roundtripping, 472

rotating. [See also pictures; 3-D rotation](#)

- gradients, 245
- objects, 257
- Picture Manager, editing in, 443

rotating (continued)

- shapes, 257
 - with SmartArt graphics, 220
 - WordArt text, 215
- Row Differences option, 38
- rows. [See columns and rows](#)
- ruler units, setting, 433
- Run dialog box in safe mode, 377

S

- Safe for Initialization (SFI) controls, 369
- safe modes
- automated safe mode, 376-377
 - enabling, 376
 - user-initiated safe mode, 376-377
- saturation of color, defined, 159
- Save as type
- list, 396
 - macros, saving, 462
- Save button, 22
- Save dialog box, 22-23
- Save Workspace command, 127
- saving. [See also workbooks; XML \(Extensible Markup Language\)](#)
- Document Management Servers (SharePoint server), workbooks to, 498
 - in HTML (Hypertext Markup Language), 411
 - older version workbooks, 23
 - PDF documents, workbooks as, 185
 - setting options, 23
 - shapes as pictures, 198
 - Web queries, 424
 - workspace layout, 127
- Scale to Fit Dialog Box Launcher, 181
- scaling
- paper sizes, 436
 - pictures, 202-203
 - print scaling, changing, 172-173
- scanning
- pictures, 195
- scenarios
- creating, 330
 - showing, 331
 - summaries, creating, 331
- scientific format, 43
- scope, names for, 84

- Screen shot, inserting, 196
- ScreenTips
- for add-in security options, 368
 - for dialog box options, 8
 - for functions, 433
 - for hyperlinks, 415
 - for macros, 461
 - style, selecting, 428
 - for themes, 157
 - turning on/off, 6
- scroll bars
- for Active controls, 466
 - showing, 434
 - synchronizing scrolling of documents, 19
- searching. [See also clip art; finding and replacing](#)
- for cell values, 123
 - conditional formatting, cells with, 143
 - for help, 21
 - tables, custom searches of, 309
 - for themes, 156
- security, 349. [See also digital signatures; passwords; Trust Center](#)
- Active controls security settings, 369
 - add-in security options, 368, 449
 - for cell styles, 167
 - data connections, security settings for, 374
 - external content security options, 374-375
 - for external data, 403
 - file encryption, adding, 355
 - formulas, showing/hiding, 354
 - harmful attacks, avoiding, 362-363
 - locking/unlocking cells, 354
 - of macros, 352, 370
 - Message Bar security options, changing, 371
 - safe modes, 376-377
 - for shared workbooks, 385
 - XML data maps, 390
- Select All button, 153
- selecting
- borders, 153
 - cells, 37
 - columns and rows, 38, 116
 - contiguous cells, 37
 - hyperlinks, 415

- multisheet ranges, 39
- noncontiguous cells, 37
- ranges, 39
- special ranges, 39
- tables, columns and rows in, 302
- worksheets, 110
- Selection Mode Status bar, 9
- Selection pane for objects, 255
- Send to Back
 - objects, 255-256
 - with SmartArt graphics, 220
- Send2Fax, 387
- sepia mode for pictures, 206
- series lines, 285
- shadows
 - in charts, 274, 275
 - for data series, 283
 - to pictures, 201
 - to shapes, 247, 251
 - to SmartArt graphics, 225
 - for text, 134-135
 - to WordArt text, 214
- Shape Effects gallery, 224, 246
- Shape Fill button, 224, 240
- shape fills
 - to charts, 275
 - color fills, 241
 - gradient fills, applying, 244-245
 - picture fills, 242
- Shape Outline button, 224
 - for lines or arrows, 234-235
- shape outlines, 224, 234-235, 241
 - to charts, 275
- Shape Quick Style, 234, 238
 - for connecting shapes, 254
 - to text, 239
- shapes, 229, 246-247. *See also* [SmartArt graphics](#)
 - adjusting, 231
 - applying shapes to pictures, 199
 - in charts, 275, 287
 - Clip Organizer, adding to, 260
 - colors
 - fills, adding, 240-241
 - outlines, applying, 241
 - connecting, 254
 - customizing creation of, 440

- deleting, 230
 - color fills, 240
- drawing, 230
- flipping, 257
- freeforms, converting to, 236
- gradient fills, applying, 244-245
- grouping/ungrouping, 258-259
- individual effects, adding, 247
- multiple shapes, inserting, 232
- organization chart, adding to, 227
- other shapes, changing to, 232
- picture fills, applying, 242
- presets, adding, 246
- proportional shapes, drawing, 230
- replacing, 231
- resizing, 230-231
- rotating, 257
- saving as pictures, 198
- shadows, adding, 247, 251
- textures, 243
- 3-D effects, adding, 248-249
- 3-D rotation, adding, 250
- transparency, applying color fill with, 241

shape text, 233

- Quick Styles, adding, 239

shared workbooks, 379, 380-381. *See also* [comments](#)

- e-mailing shared workbooks, 386
- enabling sharing, 380
- faxing workbooks, 387
- options for sharing, changing, 381
- security for, 385
- tracking changes in, 384-385

SharePoint, 1, 295. *See also* [Groove](#)

Groove

- alerts, 496
- creating workspaces, 494-495
- invite others to use, 497
- manage Document tools, 496
- sharing files with, 496

Office Mobile, 500

Microsoft SharePoint Workspaces, 494-497

Server

- co-authoring documents, 499
- opening from, 499
- saving to, 498

SharePoint (continued)

- shared folder, 494
- tables, exporting, 324
- workspaces, 494-495
- sharing. *See also shared workbooks*
 - Groove, files in, 494-496
 - OLE (object linking and embedding) and, 394-395
 - SharePoint, files in 494-495
- Shockwave Flash Object Active control, 469
- Shortcut menu
 - commands from, 5
 - group-related commands, 258
- shortcuts, 4
 - from Start menu, 2
- short date format, 43
- showing/hiding. *See also tables; workbooks*
 - chart data tables, 280-281
 - columns and rows, 117
 - Document Inspector and, 350-351
 - formulas, 354
 - objects, viewing, 256
 - Text pane, 218
 - worksheets, 114
- shrinking text to fit, 148
- signatures. *See also digital signatures*
 - Status bar, checking with, 9
 - visible signature line, adding, 360-361
- Signatures task pane, 358
- Single File Web Pages, 417, 418-419
- size. *See resizing*
- Size and Position dialog box
 - for pictures, 202-203
- Size Dialog Box Launcher, 202-203
 - shapes, resizing, 230
- SkyDrive. *See Windows Live*
- Slicer
 - creating, 316
 - deleting, 316
 - local slicer, 316
 - PivotChart, 318
 - PivotTable, 316-317
 - shared slicer, 316-317
 - Stand-alone slicer, 317
 - sharing, 317
 - using, 316-317
- SLK format, 25
- SmartArt graphics. *See also organization*

charts

- adding shapes to, 220
 - arranging shapes in, 221
 - changing shapes in, 220
 - colors, changing, 223
 - creating, 216
 - deleting shapes from, 219
 - editing shapes in, 221
 - effects, applying, 225
 - fills, applying, 224
 - formatting, 222-223
 - shapes, 224-225
 - layouts, changing, 223
 - orientation, changing, 222
 - outlines for, 224
 - picture graphic layouts, 226
 - placeholder text in, 217
 - purposes, 217
 - Quick Styles, applying, 222
 - resizing, 221
 - text, converting, 217
 - Text pane with, 218-219
- soft edges
- to charts, 275
 - to organization charts, 228
 - to pictures, 201
 - precedence of, 246
 - to shapes, 247, 248-249
 - to SmartArt graphics, 225
- Solver, 325, 447
- using, 332-333
- sorting
- cell names, 88
 - data, 295
 - fields, 306-307
 - tables, data in, 306
- sounds
- feedback with, 436
 - inserting, 189
- source files, 394
- spam, 362
- sparkline formatting, 144-145
- spell-checking, 62
- dictionaries, customizing, 64-65
 - foreign languages, 444
 - proofing options, changing, 63
- Spelling dialog box, 62

- Spin button for Active controls, 466
- splitters, 15
- splitting worksheets into panes, 123
- spoofed Web sites, 362-363
- Spotlight workbook templates, 11
- spyware, 362
- squares, drawing, 230
- stacking order, changing, 256
- standard modules in VBA (Visual Basic for Applications), 451
- standard tabs, 4
- starting
 - Excel, 2
 - Groove, 494-495
 - SharePoint Workspaces, 494-495
- Start menu, 2
 - Groove, launching, 494
- Statistical functions, 345
- Status bar
 - calculations, displaying, 91
 - controls, 3
 - using, 9
- STDEV or STDEV.S functions, 83
- step mode, debugging macros with, 458
- storing
 - cell contents, 49
 - data in Excel, 16
- straight connectors, 254
- straight lines, drawing, 234
- strikethrough text, 134-135
- styles. [See also cell styles; charts; Quick Styles](#)
 - ScreenTip styles, selecting, 428
- sub procedures in VBA (Visual Basic for Applications), 451
- subscript text, 135
- SUBSTITUTE function, 336
- subtotals
 - calculating, 92-93
 - list, data in, 337
 - in PivotTable reports, 313
- SUM function, 71, 102. [See also Conditional Sum Wizard](#)
 - automatic calculations, 91
 - subtotals, calculation of, 337
- SUMIF function, 338-339
- summarize data functions, 338-339
- superscript text, 135

- surfaces
 - for data series, 283
 - shapes, adding to, 248-249
- switching
 - between views, 29
 - between windows, 19
- SYLK files, opening, 13
- symbols, inserting, 66
- synchronizing. [See also Groove](#)
 - scrolling of documents, 19
- synonyms, 67
- syntax for VBA, 450

T

- Tab key for selecting objects, 258
- tables, 295. [See also PivotTable](#)
 - Access table into workbook, exporting, 408
 - AutoFilter, displaying parts with, 308
 - banded columns and rows in, 300
 - calculations in, 301
 - chart data tables, showing/hiding, 280-281
 - clearing, 297
 - copying cell formats, 298
 - creating, 297
 - definitions, 296
 - deleting, 297
 - columns and rows, 304
 - duplicate rows, 304
 - styles, 298, 299
 - drop-down list, entering data from, 305
 - duplicate rows, deleting, 304
 - elements, formatting, 300
 - first column, formatting, 300
 - formatting, 298
 - elements of table, 300
 - formulas, table names in, 437
 - inserting columns and rows in, 302
 - last column, formatting, 300
 - multiple fields, sorting data using, 307
 - names, 84
 - one-input data table, creating, 328
 - printing, 298
 - Quick Styles, applying, 298
 - range, converting to, 302-303
 - resizing, 302-303

tables (continued)

- searches, creating, 309
- selecting columns and rows in, 302
- SharePoint lists, exporting tables to, 324
- showing/hiding
 - chart data tables, 280-281
 - elements, 300
- sorting data in, 306-307
- styles
 - creating or modifying, 299
 - Quick Styles, applying, 298
- ungrouping, 258

Table tab, 4

tabs, 3, 4

- colors, adding or removing, 154
- dialog box options, 8
- displaying, 434

task panes, 15. *See also specific types*

templates. *See also charts*

- changing, 130
- creating, 128
- customizing, 130
- default templates, 129
- Document Information Panel template, selecting, 470
- locating, 129
- macro-enabled templates, 462
- opening, 129
- for workbooks, 11

text. *See also charts; shape text; WordArt*

- columns, converting to, 321
- concatenation, 73
- customizing creation of, 440
- flow of text, controlling, 148
- formatting, 134-135
- for hyperlinks, 416
- labels, entering, 40
- SmartArt graphics, converting to, 217
- themes, text colors in, 156
- translating text, 69
- wrapping text in cells, 74, 148

text boxes, 8

- for Active controls, 466
- in charts, 287
- creating, 233

Text Effects gallery, 214

text files

- importing, 397, 410

- opening, 13
- retrieving data from, 403

Text functions, 104, 336

Text pane

- for organization charts, 227
- showing/hiding, 218
- with SmartArt graphics, 218-219
- tasks with text in, 219

texture fills, 243

textures in WordArt, 212-213

themes, 131, 156

- accent colors, 156
- applying, 157
- background colors, 156
- custom themes
 - choosing and applying, 164
 - creating, 163
 - files, selecting and applying from, 165
 - selecting, 159
- deleting
 - custom color themes, 159
 - Document Themes folder, custom themes from, 164
 - effects, 162
 - fonts, 162
- Document Themes folder, 163-164

effects, choosing, 162-163

- existing color theme, changing, 158
- files, selecting and applying themes from, 165
- fonts, 160-161
 - deleting, 162
- hyperlink colors, 156
- other programs, use in, 157
- text colors, 156
- viewing, 157
 - effects, 162

thesauruses, 67

- Research task pane for accessing, 68

3-D cell references, 80

- creating, 83

3-D effects. *See also 3-D rotation*

- in charts, 274, 286
- for data series, 283
- precedence of, 246
- to shapes, 248-249

3-D rotation

- to charts, 275

- to organization charts, 228
- to pictures, 201
- precedence of, 246
- to shapes, 247, 250
- to SmartArt graphics, 225
- to WordArt text, 214

tick marks

- changing, 276
- editing, 267

tilde (~), 336

times. [See dates and times](#)

titles. [See charts](#)

toggle buttons for Active controls, 466

toolbars. [See also Mini-Toolbar; Quick Access Toolbar](#)

- working with, 6-7

tooltips for functions, 72

top-alignment of objects, 253

tracer arrows, 100

tracing worksheet relationships, 100

Track Changes feature, 384-385

- accepting/rejected tracked changes, 384-385

transform effect for WordArt text, 214

translating text, 69

translucent surfaces for shapes, 248-249

transparency

- for picture backgrounds, 207
- shape color fill with, 241

trendlines, 285

Trojan Horse, 362

TrueType fonts, 135

truncating long labels, 41

Trust Center, 349. [See also macros](#)

- Active controls security settings, 369
- add-in security options, setting, 368
- documents, 366-367
- locations, selecting, 365
- parental controls, setting, 373
- Privacy Options, 363
 - parental controls, setting, 373
 - setting, 372-373
- publishers, selecting, 365
- safe modes, enabling, 376-377
- viewing, 364

Trusted Documents, 366-367

TuCows, 363

turning on/off

- AutoComplete option, 41
- Formula AutoComplete, 77
- ScreenTips, 6
- Track Changes feature, 384

two-input data table, creating, 328

U

underlining comments, 383

Undo feature, 35, 70

- in Picture manager, 443
- pie chart explosion, 282
- for shape fills, 240

ungrouping. [See grouping/ungrouping](#)

unhiding. [See showing/hiding](#)

Uniform Resource Name (URN), 470

Universal Data Connection (UDC) files, 404

Universal Naming Convention (UNC), 470

up/down arrows, 8

UPPER function, 336

URLs (Uniform Resource Locators), 413, 470

Use in Formula command, 86-87

user-initiated safe mode, 376-377

Use row and column names option, 87

V

validation, adding, 322

values, 36. [See also scenarios](#)

- AutoFill, entering with, 44-45
- deleting values, keeping formulas, 96
- entering, 42-43
- formatting, 43
- formulas, converting, 85
- searching for, 123

VAR functions, 83

VBA (Visual Basic for Applications), 445. [See also macros](#)

- Active controls, adding code to, 468
- definition of terms, 450
- enhancing workbooks, 450
- modules, 451
- procedures, 451
- projects, building, 451
- structure of, 450
- viruses, avoiding, 362-363
- writing code, 450

vector images, 188

- vertical alignment, 146-147
 - of WordArt text, 215
- vertical page breaks, 178
- view buttons, 3
- viewing. *See also* Groove; themes; workbooks; zooming
 - add-ins, 446
 - clips on Web, 190
 - digital signatures, 359
 - display view options, setting, 433
 - Excel window, 3
 - hidden objects, 256
 - safe mode, disabled items in, 377
 - switching between views, 29
 - Trust Center, 364
 - Visual Basic Editor, 452
 - workbook document properties, 28
 - XML documents, 388
- View tab, 4
- Viewer, Excel software, 12
- viruses, avoiding, 362-363
- Visual Basic Editor, 451-452
 - viewing, 452
- Visual Basic for Applications. *See* VBA (Visual Basic for Applications)
- VLOOKUP function, using, 334
- VML, Web pages allowing, 417

W

- washout mode for pictures, 206
- Watch window
 - deleting cells from, 98
 - formula errors, correcting, 98
- watermarks, inserting, 177
- Web cameras, inserting pictures from, 195
- Web pages
 - appearance, changing, 412
 - Check Office Documents that are from or link to suspicious Web sites option, 363, 372
 - copying Web table to worksheets, 421
 - hyperlinks to, 414
 - interactive Web page, publishing worksheet as, 420
 - opening workbook as, 412
 - options, changing, 417
 - previewing, 413
 - refreshable Web queries, creating, 422

- saving worksheets/workbooks as, 418-419
 - as Single File Web Pages, 417, 418-419
 - spoofed Web sites, 362-363
- Web servers, 420
- What-If Analysis button, 328
 - Goal Seek with, 329
- width of columns, adjusting, 120-121
- wildcard characters, 336
- window panes, 15
 - worksheets, splitting, 123
- windows
 - arranging, 18-19
 - copying contents of, 198
 - side by side comparisons, 19
 - switching between, 19
- Windows Explorer
 - exclusion dictionaries, finding, 65
 - starting Excel from, 2
- Windows Live
 - adding files to, 486
 - copying documents, 487
 - creating documents, 485
 - deleting documents, 487
 - downloading files, 488-489
 - embedding links, 492-493
 - moving documents, 487
 - opening documents, 476-477
 - renaming documents, 487
 - saving documents, 476-477
 - sending links, 492
- SkyDrive
 - browsing folders, 480-481
 - creating folders, 482
 - deleting folders, 483
 - renaming folders, 483
 - setting folder permissions, 484
- Windows Live ID, 471-472, 474-475
 - sign-in, 475
- Windows Mobile, 500
- Windows Rights Management XPS compatibility, 186
- wire frame surfaces for shapes, 248-249
- WMF format, 188
- WordArt, 187
 - deleting text, 211
 - direction of text, changing, 215
 - effects, applying, 214

- formatting text, 212-213
- inserting, 211
- rotating text, 215
- styles, 212-213
- WordArt Quick Style gallery, 211
 - for shape text, 239
- Workbook Connections dialog box, 404-405
- workbooks, 1. [See also links and linking; read-only workbooks; security; shared workbooks; VBA \(Visual Basic for Applications\); Web pages; worksheets](#)
- AutoRecover for, 31
- blank workbooks, 10
- closing, 34
- Compatibility Checker for, 26
- consolidating data, 400-401
- converting existing workbooks, 14
- custom views, creating, 126
- deleting custom views, 126
- diagnosing problems, 32
- display options, setting, 434
- Document Management Servers (SharePoint server), workbooks to, 498
- elements, showing/hiding, 124
- e-mailing shared workbooks, 386
- existing workbooks
 - converting, 14
 - opening, 12-13
- faxing workbooks, 387
- file encryption, adding, 355
- final, marking as, 378
- HTML (Hypertext Markup Language), saving in, 411
- hyperlinks within, 414
- inspecting documents, 350-351
- keyboard, navigating with, 17
- macros
 - opening workbook with, 463
 - saving workbook with, 462
- modifying, 109
- names for, 10
- navigating in, 16-17
- new options, changing, 429
- Office Web App, creating, 485
- opening, 12-13
 - with macros, 463
- passwords for, 356-357

- PDF format
 - saving workbooks in, 185
 - sending workbooks in, 386
- properties, viewing and editing, 28
- recently opened workbooks, opening, 13
- recovering, 30-31
- repairing problems, 32
- saving, 22-23
 - different formats, workbooks with, 24-25
 - with macros, 462
 - older version workbooks, 23
- showing/hiding, 114-115
 - custom views, 126
 - elements of workbook, 124
- as Single File Web Page, 418-419
- specific location, navigating to, 17
- templates for, 11
- tracking changes, 384-385
- viewing
 - custom views, creating, 126
 - in full screen, 124
- window, 3
- Windows Explorer, opening from, 2
- XPS documents, saving as, 186
- zooming on, 125
- worksheets, 1. [See also formatting; page layout; printing; tables; themes; Web pages](#)
- all worksheets, selecting, 110
- auditing, 100
- backgrounds, changing, 112
- charts, linking, 278
- colors of tab names, changing, 115
- consolidating data, 400-401
- copying, 112-113
- data validation, adding, 322
- deleting, 111
- designing, 131
- display options, setting, 434-435
- entire worksheet, selecting, 116
- groups, forming, 112
- hiding/unhiding, 114
- inserting, 111
- inspecting information in, 351
- links, creating, 402
- modifying, 109
- moving, 112

worksheets (continued)

- naming, 110
 - numeric formats, 132-133
 - panes, splitting into, 123
 - passwords for, 352-353
 - previewing, 171, 183
 - renaming, 110
 - selecting, 110
 - as Single File Web Page, 418-419
 - specific number of pages, fitting on, 181
 - splitting into panes, 123
 - tabs, controls on, 4
 - tracing relationships in, 100
 - Web tables, copying, 421
- workspace. *See also Groove*
- layout, saving, 127
 - opening workspace files, 127
- worms, avoiding, 362-363
- wrapping text in cells, 74, 148

X

- X-axis. *See chart axes*
- XLA format, 25
 - XLAM format, 25
 - XLSB format, 25
 - XLS format, 24-25
 - XLSM format, 25
 - XLSX format, 25
 - XLT format, 25
 - XLTM format, 25
 - XLTX format, 25, 128

- XML (Extensible Markup Language), 1, 25, 379
- data maps
 - creating, 390
 - properties, changing, 389
 - expansion packs, adding, 391
 - exporting data in, 392
 - importing XML data, 391
 - inspecting documents, 350-351
 - opening files, 13, 393
 - saving
 - data in XML format, 392-393
 - workbooks as XML file, 22
 - working with, 388-389
- XML Schema, 379
- attaching, 388
- XML Source task pane, 388, 390
- XPS format, 1, 25
- saving workbooks as, 186
 - workbooks sent as, 386

Y

- Y-axis. *See chart axes*

Z

- zero value cells, 435
- zip file, creating, 488-489
- zooming
 - on chart objects, 269
 - controls, 3
 - with IntelliMouse, 16
 - on name range, 88
 - in workbooks, 125