UNIT H
Excel 2010

Creating Complex Formulas

When you create worksheets that contain many calculations, you often need to create formulas that contain more than one mathematical operator. For instance, to calculate profits for a particular product, a formula would first need to calculate product sales (product price multiplied by number of products sold) and then subtract costs from that result. Formulas that contain more than one operator are called **complex formulas**. When a formula contains multiple operators, Excel uses standard algebraic rules to determine which calculation to perform first. Calculations in parentheses are always evaluated first. Next, exponential calculations are performed, then multiplication and division calculations, and finally addition and subtraction calculations. If there are multiple calculations within the parentheses, they are performed according to this same order. Table H-1 lists the common mathematical operators and the order in which Excel evaluates them in a formula. Serena provides you with a worksheet showing January and February sales for the western region and year-to-date returns. She asks you to add a new column that calculates the adjusted sales total for both months.

STEPS

1. **Start Excel, open the file H-1.xlsx from where you store your Data Files, then save it as H-Western Region Sales**

   A copy of Serena's partially completed worksheet is open and saved with a new name.

2. **Click cell F6**

   You need to enter a formula in this cell that calculates Brenda Simpson's total sales for January (cell C6) and February (cell D6), then subtracts Brenda's returns (cell E6).

3. **Type =, click cell C6, press [+], click cell D6, press [-], click cell E6, then click the Enter button ✓**

   See Figure H-1. The formula bar displays the formula =C6+D6-E6, and cell F6 displays the formula result, $33,575. This formula added the value in cell C6 (Brenda's January sales) to the value in cell D6 (Brenda's February sales), then subtracted the value in cell E6 (the returns). In effect, Excel calculated $22,045+$13,876-$2,346. Now you need to copy the formula to the range F7:F13, to calculate the total sales less returns for the other sales reps.

QUICK TIP
You can also double-click the fill handle to copy the formula to the range F7:F13.

4. **Drag the cell F6 fill handle pointer + down through cell F13 to copy the formula to the range F7:F13**

   The results of the copied formula appear in cells F7 through F13, as shown in Figure H-2.

5. **Click the Save button on the Quick Access Toolbar**

   Excel saves your changes to the workbook.

PEMDAS

TABLE H-1: Review of order of operations

order of operations	operators
1. Calculate items in parentheses	( )
2. Calculate exponents	^
3. Multiply or divide (from left to right)	* or /
4. Add or subtract (from left to right)	+ or -

UNIT H
Excel 2010

Using Absolute Cell References

When you copy a formula from one cell to another, Excel automatically adjusts the cell references in the copied formula to reflect the new formula location. For example, a formula in cell D5 that reads "=B5*C5" changes to "=B6*C6" when you copy the formula to cell D6. As you learned in Unit G, a relative cell reference changes when you move it, to reflect its relative location to the new cell. There may be times when you want a cell reference in a formula to refer to a specific cell, even when you copy the formula to a different cell. In this case, you use an absolute cell reference in the formula. An **absolute cell reference** is a cell reference that always stays the same, even when you copy a formula that contains it to a new location. An absolute cell reference contains a $ symbol before the column letter and row number (such as $A$1). To insert an absolute cell reference in a formula, click the cell you want to use as an absolute reference, then press [F4]. You need to create a formula for the cells in the Commission column that multiplies the commission rate (5%) in cell B16 by the Total Sales Less Returns value in column F. You use the absolute cell reference $B$16 for the commission rate in the formula.

STEPS

1. **Click cell G6**

   You need to enter a formula in this cell that calculates Brenda Simpson's commission. The formula needs to multiply the commission rate contained in cell B16 (5%) by the Total Sales Less Returns value in cell F6. You begin the formula by entering the absolute cell reference $B$16.

QUICK TIP
The [F4] key is a toggle key—press it to change a relative cell reference to an absolute cell reference; press it again to change an absolute cell reference to a relative cell reference.

2. **Type =, click cell B16, then press [F4]**

   The formula bar and cell G6 display =$B$16. Pressing [F4] automatically added two $ symbols to the B16 cell reference to format it as an absolute cell reference. Now you need to complete the formula.

3. **Type *, then click cell F6**

   The formula bar and cell G6 display the formula =$B$16*F6, as shown in Figure H-3. Cells B16 and F6 are highlighted because they are referenced in the formula.

4. **Click the Enter button ✓**

   Cell G6 shows the formula result of 1678.75, the commission amount for Brenda Simpson. You need to apply the Accounting number format to the cell and round to the nearest whole number.

5. **Click the Accounting Number Format button $ in the Number group, then click the Decrease Decimal button in the Number group twice**

   The value in cell G6 is now formatted as currency with no decimal places. You need to copy the formula to the range G7:G13, to calculate the commission amounts for the other sales reps.

6. **Double-click the cell G6 fill handle + to copy the formula to G7:G13**

   Double-clicking the fill handle automatically filled cells G7:G13. Double-clicking a fill handle automatically fills adjacent cells down a column or across a row; this method can be faster and more efficient than dragging the fill handle. Now cells G6:G13 display the commission amounts for all the sales reps.

7. **Click cell G7, then save your changes**

   As shown in Figure H-4, the formula bar displays =$B$16*F7, which is the formula for cell G7. Notice that the formula contains the absolute cell reference $B$16; it was copied exactly from cell G6. The other cell reference in the formula, F7, is a relative cell reference, which changed when the formula was copied to cell G7. Cell G7 displays the value $2,311, the commission for Grace Holmes.

UNIT H
Excel 2010

Using Date and Time Functions

There are many categories of functions in Excel. See Table H-2 for a list of common ones. The Excel date and time functions let you display the current date and/or time in your worksheet and can help you calculate the time between events. Some date and time functions produce recognizable text values that you can display as is in your worksheets. Other date and time functions produce values that require special formatting. Serena wants the Western Region Sales worksheet to calculate the date that commission checks are scheduled to be issued. To accomplish this, you decide to use the TODAY function to enter the current date in the worksheet, and enter a formula that uses this information to calculate the check issue date, which is 30 days from today.

STEPS

1. **Click cell B3**
   This cell is to the right of the label Today's Date. You want to enter a function in this cell that returns today's date.
2. **Click the Date & Time button in the Function Library group**
   The list of date and time functions opens. You can point to any item to view a ScreenTip that describes the purpose of that function.
3. **Point to TODAY in the list of functions, as shown in Figure H-8, then click it**
   The Function Arguments dialog box opens, as shown in Figure H-9. The description in the dialog box explains that the TODAY function returns the current date. It also explains that the TODAY function requires no arguments, so you will not need to add values between the parentheses in the formula.

QUICK TIP
The TODAY function uses your computer's internal clock to return current date information, and recalculates this result as needed.

4. **Click OK**
   The result of this function, the current date, appears in cell B3.
5. **Click cell B18**
   You want to enter a formula in this cell that returns the date that is 30 days from the date in cell B17, which was the closing date for February.
6. **Type =, press [↑] to select cell B17, then type +30**
   The formula you entered, =B17+30, calculates the day when commission checks are issued, which is 30 days after the date in cell B17 (2/28/2013).
7. **Click the Enter button ✓ on the formula bar, then save your changes**
   The commission due date (3/30/2013) appears in cell B18, as shown in Figure H-10.

TABLE H-2: Categories of common worksheet functions

category	used for	includes
Financial	Loan payments, appreciation, and depreciation	PMT, FV, DB, SLN
Logical	Calculations that display a value if a condition is met	IF, AND, NOT
Text	Comparing, converting, and reformatting text strings in cells	FIND, REPLACE
Date & Time	Calculations involving dates and times	NOW, TODAY, WEEKDAY
Lookup & Reference	Finding values in lists or tables or finding cell references	ADDRESS, ROW, COLUMN
Math & Trig	Simple and complex mathematical calculations	ABS, ASIN, COS

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Using Statistical Functions

Excel includes many statistical functions that let you assemble, classify, and tabulate numeric data. The most popular statistical functions, AVERAGE, MIN, and MAX, are available on the AutoSum list arrow. You can calculate the average of a range of cells using the **AVERAGE** function, and you can identify the smallest or largest value in a range of cells using **MIN** or **MAX**. These functions are also available under Statistical in the More Functions category of the Function Library on the Formulas tab, and you can also access them using the Insert Function dialog box. Serena wants you to include the average sales amounts for each month in the Western Region Sales worksheet. She also wants you to indicate the largest and smallest order amounts for the whole region. You decide to use functions to add the necessary calculations to the worksheet.

STEPS

1. **Click cell B19, click the More Functions button in the Function Library group, point to Statistical, then click Average**

   The Function Arguments dialog box opens. You use this dialog box to specify the arguments you want to include in the function. In this case, you need to specify the range of cells C6:C13 for January sales.

2. **Select the range C6:C13, as shown in Figure H-11; then click OK in the Function Arguments dialog box**

   The formula =AVERAGE(C6:C13) is entered in the formula bar. The active cell (B19) displays the result of the formula ($22,323). This is the average sales amount among the sales reps for January. Next you need to enter a formula in B20 that calculates the average for February sales.

3. **Click cell B20, click the AutoSum list arrow in the Function Library group, then click Average**

   Notice that Excel automatically highlights cell B19. Excel is guessing that you want to calculate the average of the cells containing numbers directly above the active cell. This is not what you want to do; you want to calculate the average February sales amounts in the range D6:D13.

QUICK TIP
You can also use the MAX function by clicking More Functions in the Function Library group, pointing to Statistical, clicking MAX, selecting the range you want in the Function Arguments dialog box, then clicking OK.

4. **Select the range D6:D13, then click the Enter button ✓ on the formula bar**

   The average sales amount for February ($21,664) now appears in cell B20. The formula =AVERAGE(D6:D13) appears in the formula bar. Now you need to enter a formula in cell B21 that returns the highest sales amount in both months.

5. **Click cell B21, click the AutoSum list arrow in the Function Library group, then click Max**

   Notice that Excel automatically highlights cells B19 and B20. Excel is guessing that you want to calculate the average of the cells containing numbers directly above the active cell (B19 and B20). This is not what you want to do; you want to find the highest sales amounts in the range C6:D13.

6. **Select the range C6:D13, then click ✓**

   The formula =MAX(C6:D13) appears in the formula bar, as shown in Figure H-12. The active cell B21 displays the formula's result ($36,541), which is the largest sales amount. This amount, found in cell C8, is the January sales for Jose Garcia.

QUICK TIP
You can include one function as an argument in another function if its result is compatible. For example, the formula =SUM(C25, AVERAGE(C6:C13)) adds cell C25 to the average of the cell range C7:C25.

7. **Click cell B22, click the AutoSum list arrow in the Function Library group, click Min, select the range C6:D13, click ✓, then save your changes to the workbook**

   The formula =MIN(C6:D13) appears in the formula bar, as shown in Figure H-13. This formula returns the smallest value contained in the cell range C6:D13. The active cell B22 displays the formula's result ($10,967), which is the smallest sales amount. This amount, found in cell D9, is the February sales for David Chung.

Using the status bar to view average and sum data

The status bar provides information on average and sum on any selected range. When a range of cells containing values is selected, the status bar displays data for the average of the selected cells and the sum of selected cells. The status bar also displays a value for **Count**, which represents the number of cells selected.

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H
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Applying Conditional Formatting

Sometimes you might want to highlight certain cells in a worksheet that contain significant data points. For instance, if your worksheet lists customer orders, you might want to highlight the cells containing orders that exceed a certain amount. If your worksheet shows product sales, you might want to highlight cells containing the highest and lowest product revenues. Instead of manually formatting each highlighted cell, you can use conditional formatting. Excel applies **conditional formatting** to cells when specified criteria are met. For instance, you could apply green, bold formatted text as conditional formatting to all sales orders greater than $50,000. You can specify your own customized conditional formats, or you can use one of the built-in conditional formatting options available in Excel 2010, such as data bars, color scales, and icon sets. [redacted] Serena wants the worksheet to highlight the high and low total amounts in the Western Region Sales worksheet. You explore different conditional formatting options to find the right effect.

STEPS

1. **Click the Home tab, then select the cell range F6:F13**

   You selected the cells in the Total Sales Less Returns column. These cells display the total sales amounts for each rep (minus returns).

2. **Click the Conditional Formatting button in the Styles group, point to Color Scales, then click the Green - Yellow - Red Color Scale option (first option, top row), as shown in Figure H-14**

   Color scales are shading patterns that use two or three colors to show the relative values of a range of cells. The selected cells now contain shading gradations of three different colors. The green shades highlight the cells containing the higher values; the yellow shades highlight the values in the middle, and the red shades highlight the lower values. You decide to remove this shading so that you can explore other conditional formats.

3. **Click the Conditional Formatting button in the Styles group, point to Clear Rules, then click Clear Rules from Selected Cells**

   With all the conditional formatting rules cleared, the color scales no longer appear in the selected cells.

QUICK TIP
You can apply red, yellow, and green icons as conditional formats to indicate high, medium, and low values in a selected range. Click the Conditional Formatting button, point to Icon Sets, then click the icon set you want.

4. **Click the Conditional Formatting button, point to Data Bars, then click the Green Data Bar option in the Gradient Fill section, as shown in Figure H-15**

   The cells in the selected range now contain green shading. The cells with the highest values have the most shading, and the cells with the lowest values have the least. **Data bars** make it easy to quickly identify the large and small values in a range of cells and also highlight the relative value of cells to one another.

5. **Select cells C6:D13, click the Conditional Formatting button, point to Highlight Cells Rules, then click Less Than**

   The Less Than dialog box opens. You decide to apply shaded red highlighting to cells containing values less than $15,000.

QUICK TIP
To specify your own custom formatting choices in the Less Than dialog box, click Custom Format in the drop-down list, choose the options you want in the Format Cells dialog box, then click OK.

6. **Type 15000 in the Format cells that are LESS THAN text box, compare your screen to Figure H-16, then click OK**

   The cells containing values less than $15,000 in cells C6:D13 are now shaded in red, making it easy to pick out the lowest sales amounts. It is now easy to see that David Chung's sales for January and February and Brenda Simpson's sales for February are less than $15,000.

7. **Save your changes to the worksheet**

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Excel 2010

Sorting Rows in a Table

Excel lets you analyze a separate range of worksheet data called a **table**, or rows and columns of data with a similar structure. When you designate a cell range as a table, you can manage and analyze its data separately from other parts of the worksheet. For instance, you can **sort**, or change the order of the table rows, by specifying that the rows be arranged by a particular column in the table. An Excel table is similar to a table in a **database** because you can sort data in much the same way. As in database tables, Excel table columns are often called **fields** (such as a Last Name field), and rows of data are called **records** (such as a record for each customer). You use the Format as Table button in the Styles group to specify the cell range for the table and an appropriate table style. Serena wants the data sorted by state—alphabetically—and then within each state by total sales amount from largest to smallest. You format the data as a table in order to sort it.

STEPS

QUICK TIP
To remove the header row, deselect the My table has headers check box.

1. **Click cell A5, click the Format as Table button in the Styles group, then click Table Style Light 9 (second style in the second row), as shown in Figure H-17**
   Notice that a dotted border surrounds the range A5:G13; this is the range that Excel assumes you want to format as table. The Format As Table dialog box is also open, with the range A5:G13 specified. The 'My table has headers' check box is selected. In a table, the **header row** is the row at the top that contains column headings.

2. **Click OK, then click any cell in the table**
   The Tables dialog box closes, and the range you selected is now defined as a table. Notice that each cell in the header row contains a list arrow on its right edge. On the Table Tools Design tab in the Table Style Options group, notice that the Total Row check box is deselected. A **total row** is an extra row at the bottom of a table that Excel adds. You want to add a Total row to the table.

TROUBLE
Remember that the fill handle is in the lower-right corner of cell G14. Drag the fill handle to the left to cell C14, just as you would drag it down to fill a column or to the right to fill a row.

3. **Click the Total Row check box in the Table Style Options group**
   Row 14 now contains a Total label (in cell A14). By default, the last cell in the Total row contains the SUBTOTAL function, which calculates the sum total of the table's last column of data. Cell G14 now shows the subtotal of the Commissions (for the range G6:G13).

4. **Click cell G14, position the pointer over the fill handle in the lower right corner of cell G14 until it changes to +, then drag + to cell C14**
   You copied the formula that summed cells G6:G13 from cell G14 to cells C14:F14. Now cells C14:G14 display the sum totals for the data in columns C through G.

QUICK TIP
To undo the results of a sort immediately after performing it, click the Undo button on the Quick Access toolbar.

5. **Click the State list arrow in cell B5, then click Sort A to Z, as shown in Figure H-18**
   The items in the table are now sorted by state in alphabetical order, with the Arizona reps at the top and the Washington reps at the bottom. Notice that there is now a small Up arrow to the right of the list arrow in cell B5, indicating that this column is sorted in ascending order (or smallest to largest). Serena also wants the list to be sorted by totals within each state, from largest to smallest.

6. **Click the Home tab, click the Sort & Filter button in the Editing group, then click Custom Sort**
   The Sort dialog box opens. Because you already performed one sort on this data, your sort criteria is listed in the dialog box. You can use this dialog box to sort on up to three levels.

QUICK TIP
You can use the Total row cells to perform other common calculations, such as Average, Min, or Max. Click the Total row cell you want to change, click the down arrow, then click the function you want.

7. **Click Add Level, click the Then by list arrow, click Total Sales Less Returns, click the Order list arrow, click Largest to Smallest, compare your screen to Figure H-19, then click OK**
   The list is now sorted first by the State column in alphabetical order. Within each State listing, the cells containing the highest value in the Total Sales Less Returns column are listed first, as shown in Figure H-20.

8. **Save your changes**

UNIT H
Excel 2010

Filtering Table Data

If your Excel table contains a large amount of data, you might want to **filter** it to display only the data you need. Applying a filter tells Excel to show only those rows that meet specific requirements, such as customers with a particular zip code, or orders that exceed a certain dollar amount. When you tell Excel which rows in a table you want to see, you are specifying the **criteria** for your filter. Just as when you sort data in a table, you can apply a filter to a table by using the filter list arrows that appear to the right of each column heading. Unlike a sort, a filter does not change the order of the items in your table; instead, it temporarily hides the rows that do not meet your criteria. [redacted] Serena wants you to filter the table data so that it shows only the sales reps for California and Washington State whose sales amounts are less than $50,000.

STEPS

1. **Click the State list arrow in cell B5**
   The filter drop-down list opens and displays the list of available filters for this column. Excel creates filters for each of the values in the column, plus filters to automatically select all values, custom values, specified text, or numeric values. You can even filter a table by cell color.
2. **Click the (Select All) check box**
   The check marks are now removed from all the check boxes. You want to check the CA and WA check boxes, to specify that rows containing CA or WA in the States column display.
3. **Click the CA check box, click the WA check box, compare your screen to Figure H-21, then click OK**
   You have applied a filter that shows only the rows that contain the values CA and WA in the State column (five rows). You can tell that the table is filtered because the arrow in the column header contains a filter icon, and the row numbers have breaks in their numeric sequence.

QUICK TIP
To remove an applied filter, click the Sort & Filter button in the Editing group, then click Filter.

4. **Click the Total Sales Less Returns list arrow in cell F5, point to Number Filters, then click Less Than**
   The Custom AutoFilter dialog box opens. You use this dialog box to specify one or more criteria for a filter. The list box below Total Sales Less Returns displays "is less than," and the insertion point is in the box where you need to specify an amount.
5. **Type 50000, compare your screen to Figure H-22, then click OK**
   The table is filtered to show sales reps whose Total Sales Less Returns amounts are less than $50,000, as shown in Figure H-23. Now the table displays only four rows. By using the filter drop-down arrows in succession like this, you can apply more than one criterion to the same data in your table.
6. **Type your name in cell A25**
7. **Click the File tab, then click Print**
   The Print tab is now open and the worksheet appears in the Preview pane You can see that the last two columns in the worksheet (Total Sales Less Returns and Commission) do not fit on the page. You can fix this by changing the Scaling settings in the Settings area.
8. **Click the No Scaling button in the Settings area, then click Fit Sheet on One Page**
   The worksheet shrinks down just enough so that all the columns fit on the page, as shown in Figure H-24.
9. **Save your changes, close the worksheet, exit Excel, then submit the completed worksheet to your instructor**

QUICK TIP
To change a table back to a normal range, right-click anywhere in the table, point to Table, click Convert to Range, then click Yes.

QUICK TIP
You can also adjust how pages break in Page Break view. Click the Page Break View button on the status bar, then drag the blue page break lines to where you want the breaks to occur.

Select the best answer from the list of choices.

12. **Which of the following is a complex formula?**
    - **a.** =SUM(A2:A10)
    - **b.** =(E2+E3)*.20
    - **c.** =F2+1400
    - **d.** =MIN(A7:24)
13. **In a complex formula, which of the following is evaluated first?**
    - **a.** - Subtraction
    - **b.** + Addition
    - **c.** * Multiplication
    - **d.** () Items in parentheses
14. **Which of the following functions is correctly structured and calculates the sum of 77 plus the values in cells A7, A8, and A9?**
    - **a.** =SUM(77,A7,A8)
    - **b.** =SUM(77:A7-A9)
    - **c.** =SUM(77,A7,A9)
    - **d.** =SUM(77,A7:A9)
15. **In the formula =MIN(D5:D6, E8:F10), which of the following are the arguments?**
    - **a.** D5, D6, E8, and F10
    - **b.** D5 and E8
    - **c.** D5:D6 and E8:F10
    - **d.** E8:F10, D5
16. **Which of the following functions returns the value 2013?**
    - **a.** =MAX(4,10,2013, 2103)
    - **b.** =AVERAGE(4,10,2013)
    - **c.** =MIN(2013, 2011)
    - **d.** =SUM((1000*2)+13)
17. **What value would Excel return in calculating the formula =SUM(5,MIN(1,5,7))?**
    - **a.** 6
    - **b.** 18
    - **c.** 12
    - **d.** 10
18. **What value would Excel return in calculating the formula =MAX(8,(2*3),100,(90+12),50)?**
    - **a.** 150
    - **b.** 100
    - **c.** 50
    - **d.** 102
19. **If you want an Excel table to display only rows containing values less than 50 in the Revenue column, which of the following actions should you take?**
    - **a.** Choose the 50 filter on the Revenue column filter list.
    - **b.** Sort the rows from smallest to largest in the Revenue column filter list.
    - **c.** Sort the rows from smallest to largest in the Revenue column filter list.
    - **d.** Use the Custom AutoFilter dialog box to specify to show only rows in which the Revenue field is less than 50.

Skills Review

1. **Create complex formulas.**
    - **a.** Start Excel, open the file H-2.xlsx from where your Data Files are stored, then save it as **H-May Orders**.
    - **b.** Enter a complex formula in cell G6 that calculates the sum of cells D6 and E6 minus the value in cell F6.
    - **c.** Copy the formula from cell G6 to the range G7:G14.
    - **d.** Save your changes to the workbook.
2. **Use absolute cell references.**
    - **a.** In cell H6, enter a formula that multiplies the value in cell D6 by the value in B17, using an absolute cell reference for B17.
    - **b.** Use the fill handle to copy the formula in cell H6 to cells H7:H14.
    - **c.** Save your changes to the workbook.
3. **Use date and time functions.**
    - **a.** Use the TODAY function to enter today's date in cell B22.
    - **b.** Enter a formula in cell J6 that calculates the date that is 30 days later than the Order Date for Harold's Tea Shop.
    - **c.** Use the fill handle to copy the formula in cell J6 to cells J7:J14.
    - **d.** Save your changes to the workbook.

Skills Review (continued)

4. **Use statistical functions.**
   a. Enter a formula in cell B18 that uses the AVERAGE function to determine the average May order amount for the range D6:D14.
   b. Enter a function in cell B19 that determines the smallest May order amount for the range D6:D14.
   c. Enter a function in cell B20 that determines the largest May order amount for the range D6:D14.
   d. Save your changes to the workbook.
5. **Apply conditional formatting.**
   a. Select the range D6:D14.
   b. Apply a Color Scales conditional formatting to the selected range, choosing any style you like.
   c. Clear the conditional formatting rules you applied in Step 5b.
   d. Apply Gradient Fill Blue Data Bars conditional formatting to the range D6:D14.
   e. Select the range G6:G14, then apply conditional formatting to the cells in this range, specifying that all cells containing values that are greater than 1000 be formatted in Light Red Fill with Dark Red Text.
   f. Save your changes to the worksheet.
6. **Sort rows in a table.**
   a. Format the cell range A5:J14 as a table, applying Table Style Light 11 (fourth style in second row of Table Styles gallery).
   b. Specify to add a Total row to the table. Delete the value in cell J15 of the Total row (because it is a date). Click the cell D15 down arrow, then click Sum.
   c. Drag the cell D15 fill handle to cell H15.
   d. Sort the table in alphabetical order by Town.
   e. Use the Sort dialog box to sort the list data first by Town in alphabetical order, then by May Order Amount in largest to smallest order.
   f. Save your changes to the workbook.
7. **Filter table data.**
   a. Apply a filter so that only the rows containing Bay City and Gulfwood appear.
   b. Apply a custom filter to the filtered table that displays only those items whose Balance Due amount is greater than $500.
   c. Enter your name in cell A25 of the worksheet.
   d. View the worksheet in Print Preview, change the orientation to landscape, then adjust the scaling so that all columns fit on one sheet.
   e. Save your changes, close the worksheet, then exit Excel. Submit your completed worksheet to your instructor. Compare your completed worksheet to Figure H-26.

FIGURE H-26

Queen of Hearts Pastries
May Orders and Balances–Week 1

Customer	Customer Number	Town	May Order Amount	Previous Balance	Credits	Balance Due	May Delivery Fee	Order Date	Payment Due Date
County Hospital	2254	Bay City	$ 1,378.00	$ 548.00	$ 548.00	$ 1,378.00	$ 110.24	5/2/2013	6/1/2013
The Bay Hotel	4456	Bay City	$ 1,066.00	$ 655.00	$ 568.00	$ 1,153.00	$ 85.28	5/1/2013	5/31/2013
Kennedy Elementary School	1543	Gulfwood	$ 1,855.00	$ 755.00	$ 500.00	$ 2,110.00	$ 148.40	5/4/2013	6/3/2013
Total			$ 4,299.00	$ 1,958.00	$ 1,616.00	$ 4,641.00	$ 343.92		

Delivery Fee:		8%
Average Order Amount:	$	629.67
Smallest Order Amount:	$	143.00
Largest Order Amount:	$	1,855.00
Today's Date:		5/15/2013
Your Name		

Independent Challenge 2

The sales director at Wexler Organics, Inc., has just received the raw sales data for the month of August. She has asked you to finish creating a worksheet that she started. She wants you to highlight key information on this worksheet, including the highest individual sale, the overall sales total, and the number of sales reps who logged individual sales transactions greater than $5,000 for the month.

a. Open the file H-4.xlsx from where you store your Data Files, then save it as **H-August Sales Rep Report**.
b. Enter a formula in cell E7 that calculates the commission owed to the rep. (*Hint*: Multiply cell D7 by the absolute reference B4.) Use the fill handle to copy the formula to cells E8:E39.
c. Create a formula in cell F7 that subtracts the rep's commission in cell E7 from the Sales amount in cell D7.
d. Copy the formula in cell F7 to the range F8:F39.
e. Create a table from the range A6:F39. Apply a table design style that you like to the table. Include a Total row. Use the fill handle to copy the formula in cell F40 to cells E40:D40.
f. Sort the table data by sales in order from largest to smallest. Look at the sorted list, then enter the name of the rep that has the largest sales amount in cell B42.
g. Select cell B43, then enter a formula that uses the MAX function to identify the highest individual sale in the month. Apply the Accounting number format to cell B43 with no decimal places.
h. Enter a formula in cell B44 that calculates the average for all sales in cells D7:D39. Apply the Accounting Number format, and remove all decimals.
i. Apply Data Bars conditional formatting to the range D7:D39, choosing any data bar color you like.
j. Enter your name in cell A3.
k. Preview the worksheet in Backstage view. Adjust the scaling so that all columns fit on one sheet in portrait orientation. Save your changes.
l. Save your changes, close the workbook, then exit Excel. Submit your completed worksheet to your instructor.

Independent Challenge 3

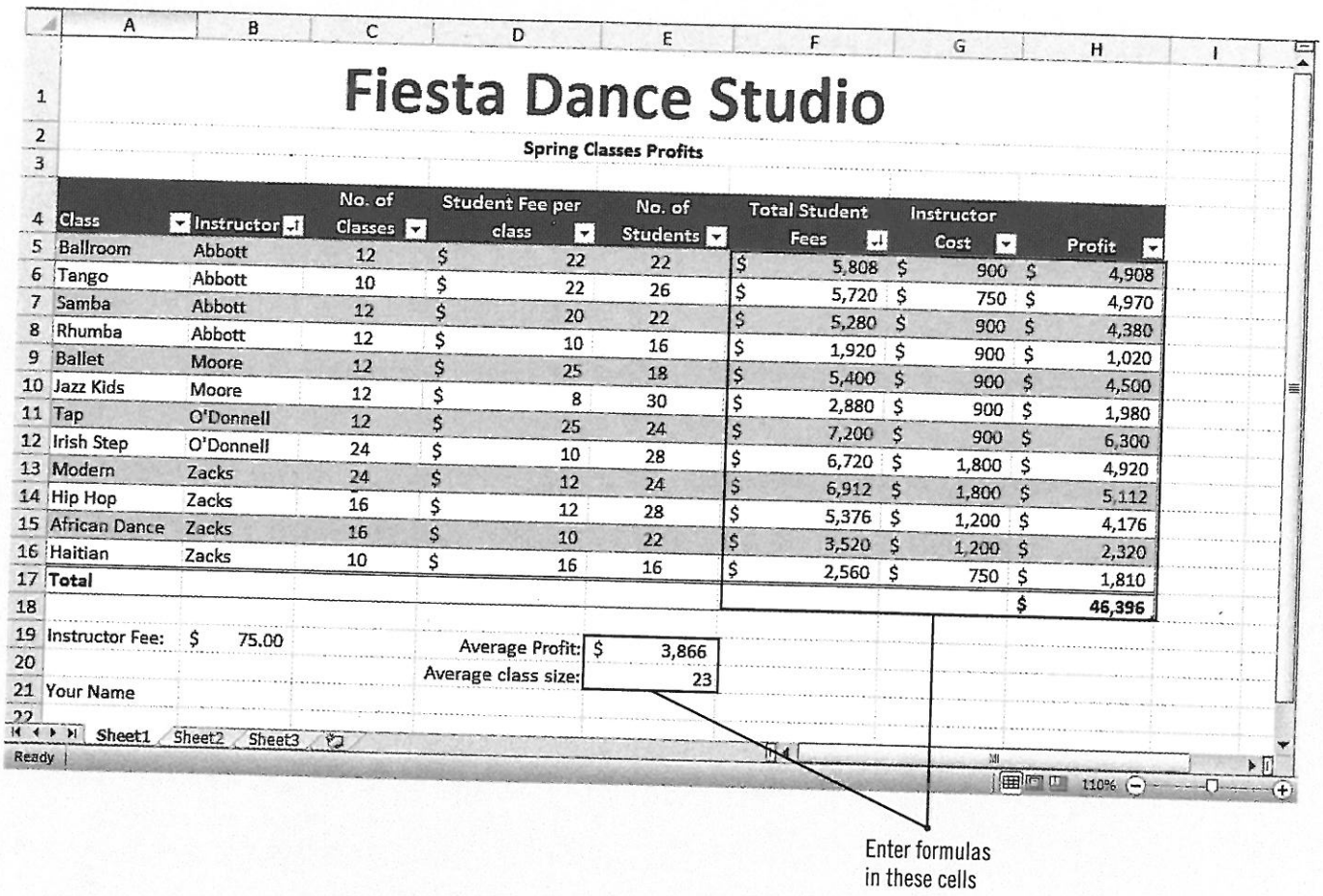
You own and operate The Last Minute Chef, a restaurant and caterer that serves busy families in Rochester, New York. You are building an Excel spreadsheet to calculate your profits for the previous year. You have entered sales and most of the expense data in the worksheet. Now you need to enter the necessary formulas to calculate the delivery costs and the profits for each month.

a. Open the file H-5.xlsx from where you store your Data Files, then save it as **H-Restaurant Profits**. Enter your name in cell A26.
b. The Last Minute Chef pays for food deliveries through a delivery service, which charges a $7.00 flat fee per delivery. The delivery fee is in cell B20. Enter a formula in cell I5 that calculates the cost of deliveries for the month of January. (*Hint*: The formula needs to multiply cell H5—the cell that contains the number of deliveries for January—by cell B20, with B20 as an absolute cell reference.)
c. Enter a complex formula in cell J5 that calculates profits for January. The formula should subtract the sum total of cells C5:G5 and cell I5 from B5 (Sales for January). (*Hint*: Start the formula with B5 followed by the - mathematical operator, followed by the SUM function to add C5:G5 and cell I5. You will need to use two sets of parentheses—one set around the arguments, and the other around the whole SUM function part of the formula.)
d. Select cells I5 and J5, then use the fill handle to copy the formulas down the columns.
e. Enter a formula in cell B21 that identifies the highest profit amount.
f. Enter a formula in cell B22 that identifies the smallest profit amount.
g. Enter a formula in cell B23 that calculates the average monthly profit for the entire year.
h. Apply conditional formatting to the cells J5:J16 to format any cells containing values greater than 55000 with green fill and dark green text.
i. Format the range A4:I16 as a table, choosing any table style you like. Add a Total row. Use the fill handle to copy the formula in cell J17 to cells I17:B17.

Visual Workshop

Open the file H-6.xlsx and save it as **H-Spring Classes Profits** where you store your Data Files. Modify the worksheet so that it contains all the formulas, functions, and formatting shown in Figure H-27. The Total Student Fees cells need to include formulas that multiply the number of students by the student fee by the number of classes. The Instructor Cost cells need to include formulas that multiply the number of classes by the instructor fee ($75.00) in cell B19. (Use an absolute cell reference.) The Profit cells need to subtract the Instructor Cost from the Total Student Fees. Convert the range A4:H16 to a table, then resize column widths to match the figure. Sort the table as shown. Enter appropriate formulas and labels in the range E19:E20. Change alignments to match the figure. Add your name to cell A21. Adjust the print settings to landscape orientation. Save and close the workbook, exit Excel, then submit your finished workbook to your instructor.

FIGURE H-27



Fiesta Dance Studio

Spring Classes Profits

Class	Instructor	No. of Classes	Student Fee per class	No. of Students	Total Student Fees	Instructor Cost	Profit
Ballroom	Abbott	12	$ 22	22	$ 5,808	$ 900	$ 4,908
Tango	Abbott	10	$ 22	26	$ 5,720	$ 750	$ 4,970
Samba	Abbott	12	$ 20	22	$ 5,280	$ 900	$ 4,380
Rhumba	Abbott	12	$ 10	16	$ 1,920	$ 900	$ 1,020
Ballet	Moore	12	$ 25	18	$ 5,400	$ 900	$ 4,500
Jazz Kids	Moore	12	$ 8	30	$ 2,880	$ 900	$ 1,980
Tap	O'Donnell	12	$ 25	24	$ 7,200	$ 900	$ 6,300
Irish Step	O'Donnell	24	$ 10	28	$ 6,720	$ 1,800	$ 4,920
Modern	Zacks	24	$ 12	24	$ 6,912	$ 1,800	$ 5,112
Hip Hop	Zacks	16	$ 12	28	$ 5,376	$ 1,200	$ 4,176
African Dance	Zacks	16	$ 10	22	$ 3,520	$ 1,200	$ 2,320
Haitian	Zacks	10	$ 16	16	$ 2,560	$ 750	$ 1,810
Total							$ 46,396

Instructor Fee: $ 75.00

Average Profit: $ 3,866

Average class size: 23

Your Name

Sheet1 Sheet2 Sheet3

Ready

110%

Enter formulas in these cells