## Concepts Review

### True/False Questions

**Each of the following statements is either true or false. Indicate your choice by circling T or F.**

T  F    1. To complete a function, you must include its arguments.

T  F    2. Icon sets display an image in the range based on the value.

T  F    3. The SUM function calculates a text value as 1.

T  F    4. The first character for all functions is a left parenthesis.

T  F    5. The TODAY function does not have arguments.

T  F    6. Custom formats include **?** and **\*** to show days and months.

T  F    7. Most statistical functions ignore text in their calculations.

T  F    8. You can copy data from one worksheet to another with the Fill handle.

### Short Answer Questions

**Write the correct answer in the space provided.**

1. Name the three types of data visualizations.

_____

2. How can you select more than one worksheet tab?

_____

3. Name the function that adds cell values only if they meet your criteria.

_____

4. What function displays the arithmetic mean of a range of cells?

_____

5. What does Excel do if a function is volatile?

_____

6. What term is used to describe the information between parentheses in a function?

_____

7. What feature helps you complete a function after you key = and its first character in the cell?

_____

8. What function would display the highest sales amount in a column?
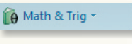
_____

## Critical Thinking

**Answer these questions on a separate page. There are no right or wrong answers. Support your answers with examples from your own experience, if possible.**

1. What are some math and trig functions that you did not use in this lesson? How might they be helpful in school work or on the job?

2. What type of businesses might use calculations that would use the date and time functions? Give examples of how they would use the functions.

## Skills Review

### Exercise 6-22

**Use Math & Trig functions. Use Statistical functions.**

1. Open **HolidayPay**. Save it as *[your initials]*6-22 in your Lesson 6 folder.
2. Click the Select All button ◣. Then click the Bold button ᴮ. All cells are set for bold.
3. Move the data in cells C13:H16 to start in cell C9.
4. In cell C15, key **Number of Employees**.
5. Use math and trig functions by following these steps:
   a. Click cell H13.
   b. Key **=sum(** to start the function.
   c. Click cell H6 and drag to select cells H6:H12. Press [Enter].
   d. In cell E15, key **=counta(** to start the function.
   e. Click cell C6 and drag to select cells C6:C12. Press [Enter].
6. In cell I6, key a formula to multiply the hours worked by the holiday rate. Widen the column slightly and copy the formula through row 12.
7. Use math and trig and statistical functions by following these steps:
   a. Click cell I13. Click the **Formulas** tab.
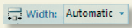   b. Click the Math & Trig button [Math & Trig ▾].
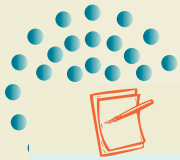
**NOTE**

If the assumed range is not correct, click and drag to select the correct range.

*fx*
Insert
Function
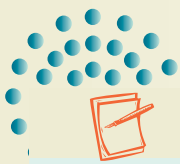
**NOTE**

The COUNTIF function is similar to the SUMIF function, but it is in the Statistical category.
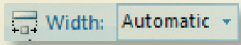
c.  Scroll and click **SUM**.

d.  Check that the range to be summed is I6:I12. Click **OK**.

e.  Widen column I as needed.

f.  Click cell E16. Click the Insert Function button 📊.

g.  In the **Or select a category** list, choose **All**. Quickly key **coun** and find **COUNTIF**. Select it and click **OK**.

h.  For the **Range** box, select cells I6:I12.

i.  In the **Criteria** box, key **>250** to count employees who earned more than $250. Click **OK**.

8.  Key **Over $250** in cell C16.

9.  Add **Top and Double Bottom** borders to cells H13:I13.

10. Press Ctrl+Home. Add a footer and adjust the left and/or right margin to fit the sheet to a portrait page.

11. Make a copy of the worksheet and name it **Formulas**.

12. Press Ctrl+~. AutoFit the columns.

Orientation

13. Click the **Page Layout** tab. Click the Page Orientation button 📄 and choose **Landscape**.

Width: Automatic ▾

14. In the **Scale to Fit** group, click the arrow with the Width button Width: Automatic ▾. Choose **1 page**. Use the same choice for **Height**.

15. Prepare and submit your work. Save and close the workbook.

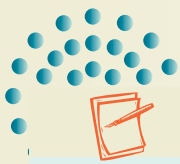## Exercise 6-23

**Use Math & Trig and Statistical functions. Use an icon set.**

1.  Open **Insurance**. Save it as *[your initials]*6-23 in your Lesson 6 folder.

2.  Key math and trig and statistical functions by following these steps:

a.  Click cell D17. Key **=coun** and press Tab.

b.  Click cell C4 and drag to select cells C4:C14. Press Enter.

c.  In cell D18, key **=sum** and press Tab. Select cells C4:C14 and press Enter.
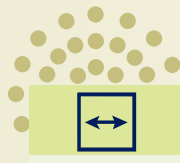
↔ **REVIEW**

For many functions, you need not key the entire name for AutoComplete to find it.

3.  Use Insert Function by following these steps:

a.  Click the **Formulas** tab.

b.  Click cell D19. Click the Insert Function button 📊. Choose **Statistical** and **COUNTA**. Click **OK**.

c.  Select cells D4:D14. Click **OK**.

d.  Click cell D20 and press Shift+F3.

e.  In the **Or select a category** list, choose **Most Recently Used** and **COUNTA**. Click **OK**.

f.  Select cells A4:A14. Click **OK**.

**NOTE**

The **Most Recently Used** list shows the functions you have used during the work session.

4. Remove the decimals from the values in column D. Center the labels in rows 1:2 across the data. Change the document theme to **Paper**.

5. Use icon sets by following these steps:

   a. Select cells E4:E14 and click the Conditional Formatting button 📊.

   b. Choose **Icon Sets** and **Red to Black** in the first column.

   c. Select cells E4:E14 and click the Conditional Formatting button 📊.

   d. Choose **Manage Rules**. Click **Edit Rule**.

   e. Click the arrow with **Percent** for the first icon. Choose **Number**.

   f. Change the **Type** for the second and third icons to **Number**.

   g. Click to select **Reverse Icon Order**.

   h. Key **2000** in the **Value** box for the first icon (black).

   i. Key **1000** in the **Value** box for the second icon (gray).

   j. Key **500** in the **Value** box for the third icon (light red).

   k. Click **OK**. Click **OK** again.

6. Press Ctrl+Home. Add a header and change the left margin to 1.50 inches.

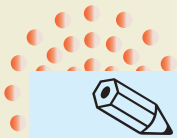7. Prepare and submit your work. Save and close the workbook.

## Exercise 6-24

**Group worksheets. Use Date & Time functions. Use Math & Trig and Statistical functions.**

1. Use the **ChkBk** template to create a new workbook. Save it as *[your initials]*6-24 in your Lesson 6 folder.

2. Group worksheets by following these steps:

   a. Right-click the **Sheet1** tab. Choose **Move or Copy**. Select **Sheet2** in the **Before sheet** list. Click to select **Create a copy**. Click **OK**.

   b. Make another copy and place it before **Sheet2**.

   c. Click the **Sheet2** tab. Hold down Ctrl and click the **Sheet3** tab.

   d. Right-click either tab and choose **Delete**.

   e. Rename the sheets as **Week1**, **Week2**, and **Week3**. Assign an accent color to each tab.

   f. Click the **Week1** tab. Hold down Shift and click the **Week3** tab.

3. Use a date function by following these steps:

   a. Click cell A4, key **=to**, and press Tab. Press Ctrl+Enter.

   b. Click cell A5 and key **=** to start a formula.

   c. Click cell A4 and key **+5** to add five days to today's date.

   d. Press Ctrl+Enter.

**REVIEW**

Copy the template to the appropriate folder for your computer. Then choose **My Templates** in the **New Workbook** dialog box.

**TIP**

You can use the Fill handle for the check numbers.

e.  Copy the formula in cell A5 to cells A6:A15.

f.  Key your name in cell A20 while the sheets are grouped.

4.  Ungroup worksheets by following these steps:

   a.  Right-click any sheet tab in the group. Choose **Ungroup Sheets**.

   b.  Click the **Week1** tab.

5.  Key the data for columns B:D as shown here.

**Figure 6-18**

| | Check # | Payee | Credit Amount | Deposit |
|---|---|---|---|---|
| 6 | 1002 | [your first and last name] | 1250 | |
| 7 | 1003 | Sutter, Howe, & Jones | 2500 | |
| 8 | 1004 | Holberg Markets | 575 | |
| 9 | 1005 | [your school name] | 435 | |
| 10 | 1006 | Hacienda Martinez | 575 | |
| 11 | 1007 | Smithfield Stores | 435 | |
| 12 | 1008 | Grocerytown Enterprises | 1200 | |

6.  Use math and trig and statistical functions by following these steps:

   a.  Click cell D16.

   b.  Key **=sum** and press Tab.

   c.  Click cell D5 and drag to select cells D5:D12. Press Enter.

   d.  In cell B16, key **=count(** and ignore Formula AutoComplete.

   e.  Click cell B5 and drag to select cells B5:B12. Press Enter.

   f.  Press Ctrl + Home.

7.  Group the worksheets and click the **Page Layout** tab. In the **Scale to Fit** group, click the arrow with the Height button [Height: Automatic]. Choose **1 page**. Use the same choice for the **Width**.

8.  Prepare and submit your work. Save and close the workbook.
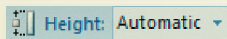
## Exercise 6-25

**Use Date & Time functions. Format times and dates.**

1.  Create a new workbook and save it as *[your initials]*6-25 in your Lesson 6 folder.

2.  Click the Select All button. Set the font to Calibri 12 point bold.

3.  In cell A1, key **Klassy Kow Ice Cream Shops**. In cell A2, key **Olympia Shop**. Choose a larger font size for these labels.

4.  Key **Date** in cell A3, **Open Time** in cell B3, and **Close Time** in cell C3. Center-align these labels. Make all three columns **12.14 (90 pixels)** wide.

5. Use date functions by following these steps:
   a. In cell A4, key **=today(** and press ⌈Enter⌉.
   b. Click cell A5 and key **=** to start the formula.
   c. Click cell A4 and key **+1** to add one day. Press ⌈Enter⌉.
   d. Copy the formula in cell A5 to cells A6:A10.
6. Format dates by following these steps:
   a. Select cells A4:A10. Press ⌈Ctrl⌉+⌈1⌉.
   b. Click the **Number** tab and choose **Date** in the **Category** list.
   c. Choose **March 14, 2001** in the **Type** list. Click **OK**.
   d. Widen column A to show the dates if necessary.
7. Key the times as shown in the figure below.

**Figure 6-19**

| | Open Time | Close Time |
|---|---|---|
| 4 | 9 am | 10 pm |
| 5 | 10 am | 11 pm |
| 6 | 10 am | 12 am |
| 7 | 11 am | 12 am |
| 8 | 11 am | 9 pm |
| 9 | 11 am | 11 pm |
| 10 | 11 am | 11 pm |

8. Format times by following these steps:
   a. Select cells B4:C10. Press ⌈Ctrl⌉+⌈1⌉.
   b. Click the **Number** tab and choose **Custom** in the **Category** list.
   c. Choose **h:mm** in the **Type** list.
   d. Edit the code in the **Type** box to show **h AM/PM**. Click **OK**.
9. Center the labels in rows 1:2 across the data. Make all rows **26.25 (35 pixels)** tall.
10. Insert a row at row 1. Insert a column at column A. Select cells A1:E12. Press ⌈Ctrl⌉+⌈1⌉ and choose a double border as an outline.
11. Select cells A1:E3 and change the font color to white. Then apply black fill.
12. Add a header and change the left margin to about 1.75 inches.
13. Make a copy of the worksheet and change the tab name to **Formulas**. Display the formulas and adjust the column widths; columns A and E can be very narrow. Change the left margin to .75 inches. Fit the sheet to a portrait page.
14. Prepare and submit your work. Save and close the workbook.

**NOTE**

Times are shown as a fraction of a 24-hour day in formula view.

## Lesson Applications

### Exercise 6-26

**Use Date functions. Group worksheets.**

1. Create a new workbook using the **CSCalls** template. Save the workbook as *[your initials]*6-26.

2. Use the TODAY function in cell A3 and format the cell as white so that it is not visible. Key a formula in cell A5 that adds one day to cell A3. Shrink the data to fit if needed.

3. Key a formula in cell A6 that adds one day to the date in cell A5. Copy the formula in cell A6 down to row 25.

4. Format cells B5:B25 to show the time using the **1:30 PM** preset format.

5. Key the times and representative names as shown. Use AutoComplete where appropriate.

↔ **REVIEW**

Set the Zoom size if you prefer to see the entire worksheet at once.

**Figure 6-20**

| | | |
|---|---|---|
| 5 | 9:30 am | Anderson |
| 6 | 10:25 am | Olmstead |
| 7 | 12:30 pm | Rogers |
| 8 | 1:30 pm | Devantes |
| 9 | 10:45 am | LaPluie |
| 10 | 2:30 pm | Anderson |
| 11 | 11:30 am | Anderson |
| 12 | 8:45 am | Olmstead |
| 13 | 4:30 pm | LaPluie |
| 14 | 10 am | Devantes |
| 15 | 8 am | Devantes |
| 16 | 3:30 pm | Rogers |
| 17 | 9:45 am | LaPluie |
| 18 | 10:15 am | Olmstead |
| 19 | 12 pm | Devantes |
| 20 | 12:15 pm | Olmstead |
| 21 | 11:15 am | LaPluie |
| 22 | 11:45 am | Olmstead |
| 23 | 2:25 pm | Devantes |
| 24 | 9 am | Anderson |
| 25 | 10:25 am | Olmstead |

6. Select cells A1:D25. Then hold down ⌃Ctrl and click the **Sheet2** tab. Fill all across the worksheets.

7. Name **Sheet2** as **Week2**. Make the column widths and row heights the same as the **Week1** sheet.

8. On the **Week2** sheet, edit the formula in cell A5 to add seven days to the function.
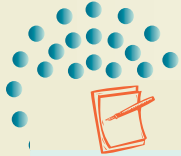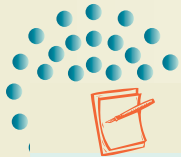
> **NOTE**
>
> Use the Page Setup dialog box to apply settings to grouped sheets.

9. Group the two sheets and open the Page Setup dialog box. From this dialog box, add a footer. Then set landscape orientation and change the top and bottom margins to .5 inch. Delete **Sheet3**.

10. Prepare and submit your work. Save and close the workbook.
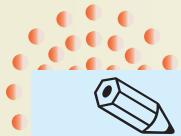
## Exercise 6-27

**Group worksheets. Use Statistical functions.**

1. Open **ShopPart** and save it as *[your initials]*6-27 in your folder.

2. Group all four sheets.

3. In cell A22, key **Number of Shops**. Make it 11-point Calibri bold italic.

> **NOTE**
>
> The worksheets should remain grouped throughout this exercise.

4. In cell B22, use **COUNTIF** to count the shops that participated in the Tip Calculator promotion. Copy the formula to cells C22:D22.

5. Center-align the contents in cells B22:D22. Use 11-point Calibri bold italic.

6. Insert a column at column A and make it **3.57 (30 pixels)** wide. Apply a double outline border around cells A5:E23.

> **TIP**
>
> Use the Insert Function dialog box to build the COUNTIF function.

7. From the Page Setup dialog box, add a footer and change the page orientation to landscape.

8. Prepare and submit your work. Save and close the workbook.

## Exercise 6-28

**Use Math & Trig functions.**

1. Open **ORSundaes** and save it as *[your initials]*6-28 in your folder.

2. In cell H3, use **AVERAGE** with cells C4:C8 as **Number1**. Ignore the error.

3. Compute the average sales for medium and large sundaes in cells H4 and H5. Adjust column F to show the labels, and make column G very narrow.

4. In cell H6, calculate the revenue by summing the appropriate sales and multiplying by the related price. Use a similar formula to determine revenue for medium and large sundaes.

5. In cell H13, add the three revenues to find a total.

6. Delete row 14. Add a double top border to the data cells to match the other price listings.

7. Format all non-money values as Comma style with no decimal places.

8. Apply a double outline border around cells E1:I10. Move this entire range so that it starts in row 5.

9. Add a header.

10. Make a copy of the worksheet and change the tab name to **SundaesFormulas**. Display the formulas. Delete columns with no data and AutoFit the other columns. Fit the formula sheet to one landscape page.

11. Prepare and submit your work. Save and close the workbook.

## Exercise 6-29 ◆ Challenge Yourself

**Use date arithmetic.**

1. Open **CoPay**. Save it as *[your initials]*6-29 in your folder.

2. Insert a column before column D. Key **Date Eligible** on two lines as the label for this column.

3. In cell D5, key a formula to determine the date eligible for a reduced copay. The formula should add the appropriate number of days to the enrollment date to determine when the employee is eligible.

4. Copy the formula for the other employees. Make adjustments as needed.

5. Increase the indent once for the department names to create space between the dates in column D and the labels in column E. Then widen column E to show more space between its labels and those in column F.

6. Add a footer and fit the worksheet to one portrait page.

**REVIEW**

Press Alt + Enter to insert a line break within a label.

**NOTE**

Many financial and date calculations use 365.25 as the number of days in a year.

**TIP**

There are buttons to increase or decrease the indent in the Alignment group on the Home tab.

**REVIEW**

Horizontal centering for the page is on the Margins tab in the Page Setup dialog box.

7. Create a formula sheet. Turn off horizontal centering and fit the formulas to one landscape page.

8. Prepare and submit your work. Save and close the workbook.

## On Your Own

**In these exercises you work on your own, as you would in a real-life work environment. Use the skills you've learned to accomplish the task—and be creative.**

### Exercise 6-30

Create a new workbook and save it as *[your initials]***6-30**. Key **My Age in Days and Years** as a label. In column A, key the TODAY() function. In the cell below the date, key a formula to add 365.25 days to today. Copy this formula to reach 10 years from now. Key your birthdate in column F. In column B, use the **DAYS360** function to calculate your age in days for each date in column A. In column C, divide the number of days by 360. Format your work attractively. Add a footer. Prepare and submit your work.

### Exercise 6-31

In a new workbook, key the first names of 10 people you know in a column. In the column to the right, key each person's eye color. In the next column, key each person's hair color. Add labels and format your work with borders and/or fill so that it looks professional. In a row below your data, key **Number of Persons with Blonde Hair and Blue Eyes**. In a cell next to or below this label, use **COUNTIFS** to determine the answer. If there are no such persons in your list, change your label to another color combination or change some of the colors in your list to test the function. Save the workbook as *[your initials]***6-31**. Add a header and prepare and submit your work.

## Exercise 6-32

Open **HolidayPay**. Delete column G and then column H. Move rows so that there is no blank space in the middle of the data. Key new labels below row 12 so that you can show these calculations: average regular rate, average rate increase, and average hours worked. Save the worksheet as *[your initials]***6-32**. Add a header or footer. Create a formula sheet. Prepare and submit your work.