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. A chart sheet includes the related worksheet data.

T F 2. Chart layouts include several different arrangements of chart elements.

T F 3. The chart area and the plot area can be formatted separately.

T F 4. Excel determines the best type of chart for your data after you select them.

T F 5. Many chart objects can be formatted with some attributes from the Home command tab.

T F 6. If you insert a data item in the existing data range for a chart, you add a data point.

T F 7. An image used as fill must be sized before it is inserted as fill.

T F 8. Most Excel charts can be converted to sparklines.

Short Answer Questions

Write the correct answer in the space provided.

1. What name describes a chart that appears on the worksheet with its data?

_____

2. Name the three Chart Tools command tabs.

_____

3. Which pane has a button that hides or shows a clickable chart object?

_____

4. Describe the move pointer for a chart object.

_____

5. Which chart element displays the value represented by the column or bar with the column or bar?

_____

6. When values for two data series are proportionally different, what chart element should be displayed to aid in interpreting the data?

_____

7. If a bar chart includes three bars for each of five locations, how many data series does it have?

_____

8. What is a data table?

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. Determine and discuss examples of data and related charts that might be developed for your school or your place of employment.
2. What are some advantages of using charts over tabular data? What might be some pitfalls of charts?

Skills Review

Exercise 7-30

Use the Chart Tools Design tab. Use the Chart Tools Layout tab. Use the Chart Tools Format tab.

Because of its cooperation with the WorldWide Campaign, each AllAround Vision Care office receives requests for charitable care. The numbers are maintained to use in government reports and in grant proposals. The worksheet has a chart, but it is currently not visible. You need to display the chart, change the data range that it is plotting, and complete the formatting.

1. Open **Excel_SR7-30** and save it as ***[your initials]*7-30**.
2. Use the Chart Tools Design tab by following these steps:
   a. Click the **Page Layout** command tab.
   b. Click the Selection Pane button.
   c. Click **Chart 4** in the **Selection and Visibility** pane.
   d. Click **Text Box 2**.
   e. Click the chart to select it. Close the **Selection and Visibility** pane.
   f. Click the **Chart Tools Design** tab. Click the Change Chart Type button.
   g. Choose **Clustered Cylinder** and click **OK**.
   h. Change to **Style 33**.
   i. Click the Select Data button.
   j. Select cells A4:A7. Hold down Ctrl and select cells F4:F7. Click **OK**.
3. Use the Chart Tools Layout tab by following these steps:
   a. Click the **Chart Tools Layout** tab. In the **Background** group, click the Chart Floor button. Choose **More Floor Options**.
   b. Choose **Solid fill** on the **Fill** pane. Click the arrow for **Color** and choose **Black, Text 1**. Click **Close**.

NOTE

The chart and text box numbers are not important.

NOTE

Only 3-D charts have a floor; the cylinder chart is 3-D.

4. Use the Chart Tools Format tab by following these steps:
   a. Click the chart title.
   b. Click the **Chart Tools Format** tab. In the **WordArt Styles** group, click the Text Effects button. Choose **Shadow**.
   c. In the **Outer** group, choose **Offset Right**.
   d. Click the **Chart Elements** arrow and choose **Series 1**. In the **Current Selection** group, click the Format Selection button.
   e. On the **Fill** pane, choose **Vary colors by point**. This sets a different shade of gray for each cylinder. Click **Close**.

NOTE

In a chart with multiple colors, the option Vary colors by point displays a different color for each bar, column, or cylinder.

5. Click a worksheet cell. Center the page horizontally. Preview the sheet in Backstage view, and if necessary, select and drag the text box to the left.
6. Prepare and submit your work.

Exercise 7-31

Create a chart object. Use Chart Tools command tabs. Create a chart sheet.

AllAround Vision Care counts the number of hits to its Web site. After the data for a 2-week period are entered, you are to build and format a line chart object with markers. After the data are ready, you'll prepare the same information for the next 2-week period in a chart sheet.

1. Open **Excel_SR7-31** and save it as ***[your initials]*7-31**.
2. In cell A4, key **May 1**. Fill dates to reach **May 15** in cell A18. Select and edit the date format to include a leading zero for the day portion.
3. Key the following values in column B:

NOTE

Excel will assume the current year in the date.

Figure 7-23

01-May	100
02-May	120
03-May	100
04-May	150
05-May	140
06-May	100
07-May	120
08-May	100
09-May	150
10-May	140
11-May	140
12-May	150
13-May	120
14-May	100
15-May	80

4. Create a chart object by following these steps:
   a. Select cells A4:B18 and click the **Insert** command tab. Click the Line button  .
   b. Choose **Line with markers** in the second row.
   c. On the **Chart Tools Design** tab, choose **Layout 3** from the Chart Layouts gallery.
   d. Point at the top edge of the chart to display a four-pointed arrow. Drag the chart so that its top left corner aligns at cell A20.
   e. Point at the bottom-right selection handle to display a two-pointed arrow. Drag the bottom-right selection handle to cell L36.
   f. Click a worksheet cell. Click the **Page Layout** command tab. Set landscape orientation.
5. Use the Chart Tools command tabs by following these steps:
   a. Right-click the line and choose **Format Data Series**.
   b. On the **Line Color** pane, choose **Solid line**. Click the arrow for **Color** and choose **White, Background 1, Darker 50%**.
   c. On the **Line Style** pane in the **Width** box, set **3 pt**.
   d. Click **Marker Options**. In the **Marker type** group, choose **Built-in**. Set the marker **Size** to **10**.
   e. On the **Marker Fill** pane, choose **Solid fill**. Set the color to match the line.
   f. On the **Marker Line Color** pane, use the same color as the line.
   g. Click **Shadow**. Click the arrow for **Presets**, and choose **Offset Bottom** in the **Outer** group. Click **Close**.
   h. Select the chart title object. Triple-click **Chart Title** and key **Web Site Hits**.
   i. Click the "Series1" legend and press Delete.
   j. Click the **Chart Tools Layout** tab. Click the Axis Titles button  . Choose **Primary Horizontal Axis Title** and then **Title Below Axis**.
   k. Triple-click **Axis Title** and key **May 1 through May 15**. Click the chart background.
   l. Click the Gridlines button  . Choose **Primary Vertical Gridlines** and then **Major Gridlines**.
   m. Click the chart background.
   n. Click the **Chart Tools Format** tab. Verify that the chart area is the selected element.
   o. In the **Shape Styles** group, click the More button  .
   p. Choose **Subtle Effect–Black, Dark 1**.
6. Click a worksheet cell and press Ctrl+F2 to open Backstage view for printing. Click the Show Margins button  . Drag the top and bottom margin markers to reset them so that the data and chart fit on a single page. Close Backstage view.
7. Select cells A3:B18 and copy them to cells F3:G18. Change the first date in column F to May 16 and refill the dates to May 30.

8. Create a chart sheet by following these steps:
   a. Select cells F3:G18 and click the **Insert** command tab. Click the Line button.
   b. Choose **Line with markers**.
   c. Click the Move Chart button. Choose **New sheet** with the default name. Click **OK**.
9. Use the Chart Tools command tabs by following these steps:
   a. Right-click the line and choose **Format Data Series**.
   b. On the **Line Color** pane, choose **Solid line** and verify that **White, Background 1, Darker 50%** is selected.
   c. On the **Line Style** pane, set the **Width** to **3 pt**.
   d. On the **Marker Options** pane, choose a **Built-in** marker set to a **Size** of **10**.
   e. Set the **Marker Fill** and the **Marker Line Color** to match the line.
   f. Click **Shadow** and choose a preset **Offset Bottom** design. Click **Close**. Click the chart background.
   g. Click the **Chart Tools Layout** tab, and insert a title above the chart. Triple-click the placeholder text, and key **Web Site Hits**. Set the font size to 28 points.
   h. Select the chart title object and click the **Chart Tools Format** tab. Click the Shape Fill button and choose **White, Background 1, Darker 25%**.
   i. With the title object selected, click the Shape Outline button and choose **No Outline**. Click the Shape Effects button and choose **Bevel**. Then choose **Circle** as the bevel style.
   j. Drag the chart title object left so that it aligns with the left vertical border of the plot area.
   k. Click the Axis Titles button. Choose **Primary Horizontal Axis Title** and then **Title Below Axis**. Replace the placeholder text with **May 16 through May 30**. Set the font size to 16 points.
   l. Click the Gridlines button. Show major vertical gridlines.
   m. Select the horizontal category axis, the dates along the bottom of the chart. Verify that it is the active object, and click the Format Selection button on the **Chart Tools Format** tab.

NOTE

Tick marks are tiny lines that can be positioned inside or outside the horizontal axis. Tick marks can also be set to cross the axis.

   n. On the **Axis Options** pane, make sure that the **Major tick mark type** is **Outside**. Then choose **At date** for **Vertical axis crosses**.
   o. Choose **Between tick marks** in the the **Position Axis** group. Close the dialog box.
   p. Select and delete the legend.
10. Return to the worksheet, and format the data with a more readable and professional look. Center the page horizontally. Rename all sheets to illustrate better what is on the sheet. Delete the unused sheets.
11. Prepare and submit your work.

Exercise 7-32

Edit the data source. Format data series with images, gradients, or textures.

The information about the JetSetter and Kallie eyeglass frames is being finalized. One of the locations is to be removed from the data. Then the column chart is to show both frames; it currently shows only one.

1. Open **Excel_SR7-32** and save it as ***[your initials]*7-32**.
2. Edit the data source by following these steps:
   a. Delete row 12 from the worksheet.
   b. Click the **ColumnChart** worksheet tab. Click the chart background.
   c. Click the **Chart Tools Design** tab. In the **Data** group, click the Select Data button.
   d. Select cells B6:D11 and click **OK**.
   e. Click the **Chart Tools Layout** tab. In the **Labels** group, click the Legend button. Choose **Show Legend at Bottom**.
   f. Right-click the legend and choose **Select Data**. Choose **Series 1** and click **Edit**. Change the name to **JetSetter**.
   g. Change the name of **Series 2** to **Kallie**.
   h. Right-click the legend, and set the font size to 16 from the Mini toolbar.
3. Format data series with images, gradients, or textures by following these steps:
   a. Right-click any **JetSetter** column and choose **Format Data Series**.
   b. Click **Fill**. Choose **Gradient fill**.
   c. In the **Gradient stops** group, click **Stop 2 of 3** and press Delete.
   d. Click **Stop 1 of 2**. Click the arrow for **Color** and choose **Blue, Accent 1, Lighter 80%**.
   e. Click **Stop 2 of 2**. Click the arrow for **Color** and choose **Blue, Accent 1, Lighter 40%**.
   f. Click the arrow for **Direction**. Choose **Linear Up**. Click **Close**.
   g. Right-click any **Kallie** column and choose **Format Data Series**. Build a similar orange gradient for this series.
   h. Click the chart background.
4. Prepare and submit your work.

Exercise 7-33

Create a combination chart. Use the Chart Tools command tabs. Insert sparklines.

In addition to eye exams and procedures, AllAround Vision Care sells several accessory products. Each office keeps track of the items and how many are sold. The item and cost data are to be graphed in a combination line-column chart. For the worksheet that includes daily item counts, you are to add column sparklines so that the company can see if there are any trends in sales based on the day of the week.

1. Open **Excel_SR7-33** and save it as ***[your initials]*7-33**.
2. Create a combination chart by following these steps:
   a. On the **Ancillaries** worksheet, click the **Insert** command tab.
   b. Select cells B6:D15 and click the Line button.
   c. Choose **Line with Markers**.
   d. Click the Move Chart button. Choose **New sheet** and click **OK**.
   e. Right-click the legend and choose **Select Data**. Choose **Series 1** and click **Edit**. Change the name to **Item**.
   f. Change the name of **Series 2** to **Unit Cost**.
   g. Right-click the Item line and choose **Change Series Chart Type**. Choose **Clustered Column** and click **OK**.
3. Use the Chart Tools command tabs by following these steps:
   a. Click the **Chart Tools Design** tab and choose **Style 42**.
   b. Right-click the **Unit Cost** line and choose **Format Data Series**.
   c. On the **Line Color** pane, choose **Solid line** and set **White, Background 1**.
   d. On the **Line Style** pane, set the **Width** to **3 pt**.
   e. On the **Marker Options** pane, choose a **Built-in** marker set to a **Size** of **10**.
   f. Set the **Marker Fill** and the **Marker Line Color** to match the line.
   g. Click **Shadow** and choose a preset **Offset Bottom** design. Close the dialog box.
   h. On the **Chart Tools Layout** tab, click the Chart Title button. Choose **Centered Overlay Title**. Change the placeholder to **Items Sold and Unit Costs**.
   i. Select the title object, and move it so that it is between the horizontal gridlines for 40 and 45 and aligns with the leftmost column.
   j. Click the Gridlines button. Choose **Primary Vertical Gridlines** and then **Major and Minor Gridlines**. For the horizontal gridlines, set **Major and Minor Gridlines**.
   k. Select the legend and use the **Chart Tools Layout** tab to place it below the chart.
4. Insert sparklines by following these steps:
   a. On the **Dailies** worksheet, insert a column at column I and make the new column **10.71 (80 pixels)** wide.
   b. Click the **Insert** command tab.
   c. Select cell I6 and click the Insert Column Sparkline button.
   d. Select cells C6:H6 as the **Data Range**. Verify that the **Location Range** shows I6.
   e. Click **OK**.
   f. Select rows 6:16 and make them **30.00 (40 pixels)** tall.
   g. Click cell I6. Click the **Sparkline Tools Design** tab. Click to place a checkmark for **High Point** in the **Show** group.
   h. In the **Style** group, choose **Sparkline Style Dark #3**.
   i. Copy the sparkline to row 15.
   j. Click cell F9, and key **-2** to make the value a negative number.
5. Prepare and submit your work.

NOTE

Negative values, in this worksheet, mean that products were returned for exchange or a refund.

Lesson Applications

Exercise 7-34

Create a scatter chart sheet. Use the Chart Tools command tabs.

A scatter chart (or a "scattergram") does not have a category axis. Both axes show values. In the chart for this exercise, you show the relationship between the number of customer calls or queries and the number of times a radio ad is run. From the data and the chart, AllAround Vision Care can determine the optimum number of times to run a piece.

1. Open **Excel_LA7-34** and save it as ***[your initials]*7-34**.

NOTE

The worksheet uses the Aspect document theme.

2. Select cells B6:C25, and create a scatter chart sheet with only markers.
3. Format the data series to use a built-in circle-shaped marker (the **Type**), sized at 16. Set the shape to use black fill and no outline.
4. Delete the legend and show major and minor vertical gridlines.
5. Add a horizontal axis title below the chart that says **Number of Times Ad Ran**.
6. Add a rotated vertical axis title to display **Number of Queries**.
7. Add a chart title above the chart to display **Radio Ads and Increased Patient Queries**.
8. Rename the sheets to descriptive names, and delete the unused sheets.
9. Prepare and submit your work.

Exercise 7-35

Create an exploded pie chart object. Use Chart Tools command tabs. Edit the data source.

An exploded pie chart shows one or more of the slices detached from the rest of the pie to emphasize the slices. In such a chart for patient diagnoses, the Boston and Chicago offices can demonstrate the most common patient problems. They will use this data in a grant proposal for special funding for experimental procedures.

1. Open **Excel_LA7-35** and save it as ***[your initials]*7-35**.
2. Create a 2-D pie chart below the data. Align and size the object so that its top left corner is at cell A13 and the lower right corner is about at cell E30.
3. Use **Style 26**. Show the legend at the bottom. Add **Boston and Chicago Diagnoses** as the chart title.

4. Delete row 7 and then row 9.
5. Format the data series to set the angle of the first slice to **90**.
6. Select the pie and then the **Nearsightedness** slice. Drag the **Nearsightedness** slice away from the pie, but not too far.

NOTE

Leader lines in a pie chart connect a data label to its slice. These lines appear when a label does not fit inside the slice to identify the category.

7. Delete the legend, and show the data labels with a best fit. Format the labels to show the category name and leader lines. Make the labels bold.
8. Format the **Astigmatism** slice with a fill color that better distinguishes it from other slices.
9. Set a light tan fill color for the chart area.
10. Prepare and submit your work.

Exercise 7-36

Edit the data source for a bubble chart object. Use the Chart Tools command tabs.

A bubble chart is similar to a scatter chart because it does not have a category axis. It has three value series; the third series is represented by the size of the bubbles. This chart analyzes the number of times a patient visits, the total cost billed to the insurance company, and then an average cost for the patient. The company hopes to help patients better plan their eye care by illustrating that more visits usually result in higher costs.

1. Open **Excel_LA7-36** and save it as ***[your initials]*7-36**.
2. The formula in column E is incorrect. It should divide the total billable amount by the number of visits. Correct this error.
3. Add a horizontal axis title below the chart with **Number of Visits**. Add a rotated vertical axis title with **Total Billable Amount**.
4. Format the vertical axis values to show no decimals. Show minor vertical gridlines.
5. Prepare and submit your work.

Exercise 7-37 ◆ Challenge Yourself

Edit the data source for a chart sheet. Create a chart sheet. Use the Chart Tools command tabs.

A stock chart plots daily price information for a traded stock. The data must be in this order from left to right: high price, low price, and closing price. There are several variations for this chart type with some that include the opening price and volume too. Several employees have stock in a contact lens provider, so the prices are monitored in a worksheet. After reviewing the chart for April, you plan to build a similar chart for May.

1. Open **Excel_LA7-37.** Save the workbook as ***[your initials]*7-37**.

NOTE

When preparing a stock chart, weekend and other nontrading days are not included.

2. Right-click the **May** worksheet tab and choose **Unhide Sheet**. There are two sheets hidden from view in the workbook. Unhide the **Apr** worksheet and then unhide the **AprChart** sheet.
3. Review the April data and its chart. All the close prices are correct. The high and low prices are not. Review the data carefully and exchange prices where needed. After you have edited the data, review the chart.
4. Click the **May** worksheet tab. The data have the same type of errors. Find and correct them.
5. Create a May high-low-close stock chart for cells A3:D23 on its own sheet. Use **Chart Style 29** and delete the legend.
6. Format the vertical axis with a maximum value of 33 and a minimum value of 20.

TIP

Zoom in to a large percentage to better locate the data points on the lines.

7. There are data points at the top and bottom tips of the vertical lines. Select each, and format the markers so that they are visible and use different colors. Compare your chart to the April chart. You can use different marker shapes and colors, but your chart should use a similar design.
8. Add a chart title and position it at the left. Add gridlines. (Check the April chart.)
9. Prepare and submit your work.

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 7-38

In a new workbook, key your city, state, and ZIP Code in cell A1. In cells A3:A12, enter the dates for the past 10 days. Use a local newspaper or an Internet site (or your best estimates) to determine the temperature for each of those days, and key the values in column B. Create a line chart sheet that plots the daily temperatures with a layout and style of your choice. Format your chart and your data as a professional report. Save the workbook as ***[your initials]*7-38**. Prepare and submit your work.

Exercise 7-39

In a new workbook, list five personal expense categories (for example, food, gas, entertainment, books, and tuition) in column A, starting in row 4. In cell B3, key Jan (for January) and then fill the months to reach June. Key values for each expense. If you show an expense such as "Rent," it may be the same every month; other expenses may be zero for a particular month. After the data are entered, use either a line or a column sparkline to illustrate your expenses for the 6-month period. Format the worksheet in a professional manner. Save the workbook as ***[your initials]*7-39**. Prepare and submit your work.

Exercise 7-40

Create a worksheet that lists first names of six friends in one column and their heights in inches or centimeters in a second column. Create a column chart sheet with the names on the horizontal axis and heights on the vertical axis. Use a different gradient or texture fill for each data point. Make other formatting choices so that your chart is easy to interpret. Save the workbook as ***[your initials]*7-40**. Prepare and submit your work.