## 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. A selected chart element displays selection handles and a bounding frame.

T  F    3. The markers for a line chart can be formatted separately from the line.

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

T  F    5. Some chart layouts do not include a chart title.

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

T  F    7. Each slice in a pie chart represents a data series.

T  F    8. The chart style includes colors for the plot area as well as other chart elements.

### Short Answer Questions

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

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

   _____

2. What command tab includes the chart layout and style choices?

   _____

3. What is the keyboard shortcut to create a chart sheet?

   _____

4. If you have one data series with five data points, what type of chart might be best?

   _____

5. What term describes a blend of colors for filling a bar or column?

   _____

6. What can you use when two data series have drastically different values?

_____

7. What happens if you delete a data series used in a column chart from the worksheet?

_____

8. What is a data table?
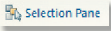
_____

## 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. Discuss and determine what data and related charts might be developed for your school.

2. What are some advantages of using charts over tabular data? What are some pitfalls of charts?

## Skills Review

### Exercise 9-26

**View and print a chart.**

1. Open **DecChart** and save it as *[your initials]***9-26**.
2. View a chart by following these steps:
   a. Click the **Page Layout** tab.
   b. Click the Selection Pane button 🔲 Selection Pane . There are two objects on this sheet, a chart and a text box.
   c. Click **Chart 4** in the **Selection & Visibility** pane.
   d. Click **Text Box 2**. The bounding box and selection handles are visible; the box is beneath the chart.
   e. At the bottom of the **Selection & Visibility** pane, click the Bring Forward button 🔼. The text box must be on top of the chart to be visible over the white background.
   f. Click cell A1. The chart is deselected.

**REVIEW**

The chart and text box numbers are not important.

3.  Print a chart object by following these steps:
    a.  Close the **Selection & Visibility** pane.
    b.  Insert a header that includes the user name, but change it to your name.
    c.  Press Ctrl + P and click **OK**. The worksheet and chart print on the same page.
4.  Prepare and submit your work. Save and close the workbook.

## Exercise 9-27

**Change the chart layout and style. Edit the chart title. Format axes. Add data labels.**

1.  Open **NovReceipts** and save it as *[your initials]*9-27. Change the Zoom size to **80%** and adjust column widths if necessary.
2.  Change the chart layout and style by following these steps:
    a.  Click the chart background to select the chart.
    b.  Click the **Chart Tools Design** tab and change to **Layout 1**.
    c.  Change to **Style 45**.
3.  Edit the chart title by following these steps:
    a.  Click the chart title to select it.
    b.  Double-click **November** and key **December** in its place.
    c.  Point at the chart title to display a four-pointed arrow. Drag the title left to align with the state names.
    d.  Triple-click the title and point at the Mini toolbar. Click the Italic button *I* .
4.  Format an axis and delete the legend by following these steps:
    a.  Right-click any value on the horizontal axis. Choose **Format Axis**.
    b.  On the **Axis Options** pane, click the arrow for **Display units**. Choose **Thousands** and click **Close**. Excel automatically scales the values.
    c.  Click **Series 1** (the legend). Press Delete .
5.  Add data labels by following these steps:
    a.  Right-click any bar and choose **Add data labels**.
    b.  Right-click one of the data labels. Choose **Format Data Labels**.
    c.  Click **Number**. Choose **Currency** with **0** decimals and **$** as the **Symbol**. Click **Close**.
6.  Prepare and submit your worksheet. Save and close the workbook.

**REVIEW**

In editing mode, a double-click selects a word.

**NOTE**

The category axis (the state names) is vertical in this chart. The value axis is horizontal.

## Exercise 9-28

**Create a chart object. Edit chart data and objects. Edit the data source.**

1. Create a new workbook and save it as *[your initials]*9-28.

2. In cell A1, key **Sales of Waffle Cones**. Make it 18-point Cambria.

3. In cell A2, key **May 1**. Fill dates to reach **May 15** in cell A16.

4. Key the following values in column B:
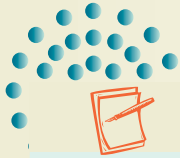
**NOTE**

Excel will assume the current year in the date.

**Figure 9-22**

| | |
|---|---|
| 01-May | 1000 |
| 02-May | 1200 |
| 03-May | 1000 |
| 04-May | 1500 |
| 05-May | 1400 |
| 06-May | 1000 |
| 07-May | 1200 |
| 08-May | 1000 |
| 09-May | 1500 |
| 10-May | 1400 |
| 11-May | 1400 |
| 12-May | 1500 |
| 13-May | 1200 |
| 14-May | 1000 |
| 15-May | 800 |

5. Create a chart object by following these steps:

   a. Select cells A2:B16 and click the **Insert** 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 A18.

   e. Point at the bottom-right selection handle to display a two-pointed arrow. Drag the bottom-right selection handle to cell L32.

   f. Click the **Page Layout** tab. Set landscape orientation.

6. Edit data and objects by following these steps:

   a. Edit cell B5 to show **600** and cell B12 to show **800**.

   b. Right-click the line and choose **Format Data Series**.

   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. Triple-click **Chart Title** and key **Waffle Cone Sales**.

i. Click the "Series1" legend and press Delete.

7. Format the axes by following these steps:

a. Click the **Chart Tools Layout** tab. Click the Axis Titles button [icon]. Choose **Primary Horizontal Axis Title** and then **Title Below Axis**.

b. Triple-click **Axis Title** and key **May 1 through May 15**.

c. Click the Axes button [icon]. Choose **Primary Horizontal Axis** and then **Show Left to Right Axis**.

d. Click the Gridlines button [icon]. Choose **Primary Vertical Gridlines** and then **Major Gridlines**.

e. Click the chart background.

f. Click the **Chart Tools Format** tab. Verify that the chart area is the selected element.

g. In the **Shape Styles** group, click the More button [icon].

h. Choose **Subtle Effect – Dark 1**.

8. Edit the data source by following these steps:

a. Select the chart and press Ctrl+C. Click the **Sheet2** tab and press Ctrl+V.

b. On **Sheet1**, insert a row at row 17. Key **May 16** in cell A17 and **2000** in cell B17.

c. Right-click the chart on **Sheet2** and choose **Select Data**.

d. Click cell A2 and drag to select cells A2:B17. Click **OK**.

e. Triple-click the horizontal axis title and change it to **...through May 16**.

f. Click one of the dates to select them. On the **Home** tab, change the font to 9 point.

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

## Exercise 9-29

**Create a combination chart. Use a gradient for a data series. Format a data series. Size a chart.**

1. Open **ConeSales** and save it as *[your initials]*9-29.

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**TIP**

Click away from the chart to see your changes.

2. Create a combination chart by following these steps:

   a. Click the **Insert** tab.

   b. Select cells A3:C18 and click the Line button .

   c. Choose **Stacked line with markers** (second icon, second row).

   d. Click the Move Chart button . Choose **New sheet** and click **OK**.

   e. Right-click the waffle cone line and choose **Change Series Chart Type**. Choose **Area** in the **Area** group and click **OK**.

   f. Click the **Chart Tools Layout** tab. Click the Chart Title button . Choose **Centered Overlay Title**.

   g. Triple-click **Chart Title** and key **Waffle and Sugar Cone Sales**.

   h. Click the Gridlines button . Choose **Primary Horizontal Gridlines** and then **Major and Minor Gridlines**.

3. Use a gradient for a series by following these steps:

   a. Right-click in the area for the waffle cone series. Choose **Format Data Series**.

   b. Click **Fill** and then **Gradient fill**. Click the arrow for **Preset colors** and choose **Wheat**.

   c. Click the arrow for **Direction** and choose **Linear Up**.

   d. Click **Close**.

4. Format a data series by following these steps:

   a. Right-click the sugar cone line and choose **Format Data Series**.

   b. Choose **Line Color** and **Solid line**. For the color, choose **Black, Text 1**.

   c. Choose **Line Style**. Set the **Width** to **3 pt**.

   d. Choose **Marker Options**. Choose **Built-in** and set the size to **10**.

   e. Choose **Marker Fill** and use the same color as the line.

   f. Choose **Marker Line Color** and set the same color. Click **Close**.

5. Size a chart by following these steps:

   a. Click the white chart background and click the **Chart Tools Format** tab.

   b. In the **Size** group, click in the **Shape Height** box and key **5.75**.

   c. Set the shape width to **8.5**.

   d. Point at an edge of the chart to display a four-pointed arrow. Drag the chart so that it appears centered on the page.

6. Right-click **Sheet1** and choose **Hide**. The data is hidden but is still used for the chart.

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

## Lesson Applications

### Exercise 9-30

**Create a scatter chart. Edit chart objects.**

A scatter chart (a "scattergram") does not have a category axis. Both axes show values. In the chart for this exercise, you show the relationship between a price decrease and increased sales.
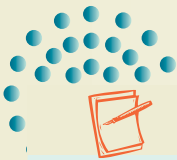
**NOTE**
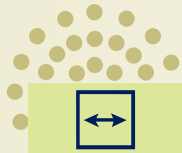
The worksheet uses the Aspect document theme.

1. Open **Scatter** and save it as *[your initials]*9-30.

2. Select cells B6:C11 and create a scatter chart with straight lines and markers. Move the chart to its own sheet.

3. Apply **Chart Layout 5** and **Chart Style 38**.

4. Choose a thickness for the line and a size/style for the markers. The line and markers should use **Red Accent 2** as the color.

5. Format the data labels so that there is no Y value included. Delete the legend.

6. Edit the chart title placeholder to **Percentage Price Decrease and Increased Sales**.

7. Edit the vertical axis title to **Additional Sundaes Sold** and make it 9-point Verdana. Edit the horizontal axis title to **Promotional Price Decrease** and make it 9-point.

8. Use 9-point for the numbers along each axis.

9. Prepare and submit your work.

### Exercise 9-31

**Create an exploded pie chart. Edit chart objects.**

An exploded pie chart shows one or more of the slices detached from the rest of the pie to emphasize the slice(s). The Excel chart types show all the slices detached, but you can create your own chart with a single exploded slice.
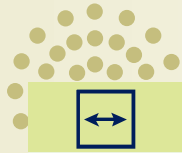
1. Open **ExPie** and save it as *[your initials]*9-31.

2. Create a 2-D pie chart below the data. Make the chart area as wide as the worksheet data borders. Align the top-left corner near cell A12 and the lower-right corner at about cell D35.

3. Use **Chart Layout 5** and **Chart Style 1**. Key **Shake Flavor Comparison** as the chart title.

4. Format the data labels to use 9-point Calibri and place the labels in the center.

5. Format the data series to set the angle of the first slice to **90**.

6. Select the pie and then the **Butterscotch** slice. Drag the **Butterscotch** slice away from the pie, but not too far.

7. Select the pie and format the data series with a solid black border.

8. Format the **Vanilla** slice as solid white. Format each of the other slices with a color, gradient, or texture that represents the flavor.

9. Prepare and submit your work.

> **REVIEW**
>
> The four-pointed arrow is the move pointer; a two-pointed arrow is a sizing pointer.

## Exercise 9-32

**Create and format a bubble chart.**

The Klassy Kow Credit Union provides savings account records for employees who contribute regularly. You are to prepare a bubble chart to demonstrate why it is best to start saving as soon as possible. A bubble chart is similar to a scatter chart with an additional series.

1. Open **BubbleChart** and save it as *[your initials]*9-32.

2. In column E, use the FV function to determine the value of an account with the interest rate shown. The original amount is the PV, the amount in the account when the savings program starts. Assume that payments are made at the beginning of the month.

> **REVIEW**
>
> Divide the interest rate by 12 for monthly payments.

3. Create a 3-D bubble chart using cells C6:E10. Place the chart below the data. Choose **Layout 1** and **Style 21**.

4. As the chart title, key **Growth of Your Deposits**. Delete the legend.

5. Edit the horizontal axis title to **Years in Program**. Edit the vertical axis title to **Monthly Savings**.

6. Format the values for both axes appropriately.

7. Size the chart as needed. On the **Chart Tools Format** tab, choose a shape style.

8. Prepare and submit your work.

## Exercise 9-33 ◆ Challenge Yourself

**Edit chart data. Create and format a stock chart.**

A stock chart plots daily stock price information. In the worksheet, the prices must be in this order from left to right: high price, low price, closing price. There are several variations for this chart type with some that include the open price and volume.

1. Open **HighLow** and unhide the **Apr** worksheet. Save the workbook as *[your initials]*9-33.

2. Review the April data and its chart. The close prices are correct. There are, however, other errors in the data. Review the data and edit it as needed.

3. There are errors in the May data. Find and correct them.

4. Create a stock chart for the May data using cells A4:D13. Move the chart to its own sheet. Use **Chart Style 29**. Delete the legend.

5. Format the vertical axis on the chart with a maximum value of 30 and a minimum value of 23.

6. Add a chart title and position it at the left. (Check the April chart.)

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.

8. Prepare and submit your work.
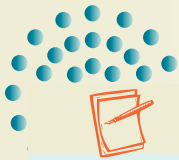
**NOTE**

When preparing a stock chart, you should eliminate weekend and other nontrading days.

## 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 9-34

In a new workbook, key your city, state, and ZIP code in cell A1. In cells A3:A12, enter the dates for the past ten days. Use a local newspaper or an Internet site to determine the high temperature for each of those days and key the values in column B. Create a line chart that plots the daily temperatures with a layout and style of your choice. Place the chart as a separate sheet. Save the workbook as *[your initials]*9-34. Prepare and submit your work.

## Exercise 9-35

Build a worksheet with a doughnut chart object to show your weekly expenses. Use at least six expense categories (food, gas, entertainment, books, etc.). Add a chart title and decide whether to show labels or percentages on the segments. Save the workbook as *[your initials]*9-35. Prepare and submit your work.

## Exercise 9-36

Create a worksheet that lists first names of six friends in one column and their heights in inches in a second column. Create a column chart sheet with the names on the horizontal axis and heights on the vertical axis. Use a gradient or texture fill for the columns. Make other formatting choices so that your chart is easy to interpret. Hide the worksheet. Save the workbook as *[your initials]*9-36. Prepare and submit your work.