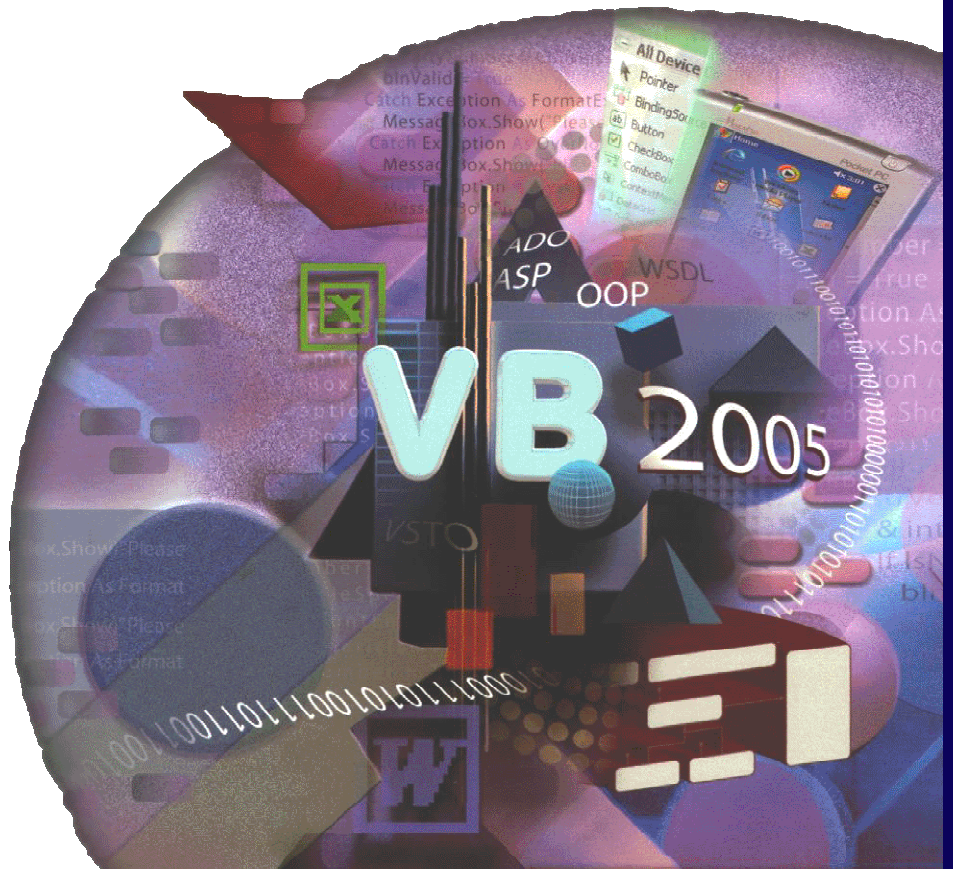# MICROSOFT

Visual Basic

2005

Chapter Review

and

Study Guide

Visual Basic Programming
Chapter 1 Review

1. Explain the differences between computer hardware and computer software.

2. The basic functions of many programs are: a) _____

   b) _____

   c) _____

3. Match the following terms and their definitions:

   _____ 1. Developer

   a) A collection of classes that are available for use in programs

   _____ 2. Persistent data

   b) Someone skilled in designing computer programs and implementing them in programming languages

   _____ 3. Programming language

   c) A window with a variety of objects that can be displayed on a variety of devices

   _____ 4. Graphical user interface

   d) Data that is stored on a storage medium

   _____ 5. Database

   e) The process of using prebuilt classes to make application development faster, easier, and more reliable

   _____ 6. Class library

   f) A collection of data organized in a manner that allows access, retrieval, and use of that data

   _____ 7. Rapid application development (RAD)

   g) A set of words and symbols that can be interpreted by special computer software and eventually can be executed as instructions by a computer

4. Explain what an event is in the context of event-driven programs. Give two examples.

Visual Basic Programming
Chapter 1 Review

5. Give examples of the differences between an input operation and an output operation.

6. What are the four primary arithmetic operations a computer program can perform? Give an example of each.

7. In the following examples, identify the condition a program would detect (the first exercise is solved for you):

   a. 4 is __(greater than)__ 3

   b. 8 is _____ 8

   c. 17 is _____ 17.8

   d. 75 is _____ 85

   e. "Developer" is _____ "Developer"

8. Describe three different databases where you think information about yourself might be stored.

9. What is programming language syntax? Why is it important?

Visual Basic Programming
Chapter 1 Review

10. Visual Studio 2005 is a type of_____ developed by _____

11. What is a Toolbox in Visual Studio 2005? Why is it valuable?

12. Name two properties that a Button object can possess.

13. What are the four programming languages you can use with Visual Studio 2005?

14. State three reasons that Visual Basic is the most widely used programming language in the world.

15. What are four major features of .NET Framework 2.0?

16. Why is a class developed? How are classes organized and stored:

Visual Basic Programming
Chapter 1 Review

17. Differentiate between a class and an object. Give three examples of a class and an object.

18. What is the primary use of ADO.NET 2.0?

19. What is the process of translating statements written by a developer called? What is the result of this process?

20. What are five types of applications you can create in Visual Basic 2005:

Visual Basic Programming
Chapter 1 Review

1. Which of the following is computer hardware?

    a. Keyboard

    b. Mouse

    c. Monitor

    d. All of the above

2. The basic function of many programs is to accept some sort of data, called _____.

    a. data

    b. input

    c. output

    d. processing

3. Output data is referred to as _____.

    a. information

    b. RAM

    c. CPU

    d. GUI

4. Which of the following is an input device?

    a. Printer

    b. CPU

    c. Scanner

    d. All of the above

5. A(n) _____ usually consists of several computer programs working together to solve a problem.

    a. suite

    b. application

    c. database

    d. GUI

6. Which of the following is a fundamental operation of a computer program?

    a. logical operations

    b. input

    c. output

    d. All of the above

7. Which of the following is a common output device?

    a. Printer

    b. PDA screens

    c. Smartphone screens

    d. All of the above

8. A database is a collection of data that allows for _____.

    a. Access

    b. Retrieval

    c. Use of data

    d. All of the above

9. Programming rules are also called _____.

    a. tools

    b. syntax

    c. components

    d. IDE

10. _____ is a programming language in which Visual Studio can be used to write programs.

    a. Cobol

    b. Linix

    c. Visual C++

    d. All of the above

11. Most programs written using Visual Basic 2005 are _____-driven programs where a user performs an action and the program executes the appropriate instructions.

    a. event

    b. database

    c. syntax

    d. RAM

12. A button created from a class is called a(n) _____.

    a. library

    b. instance

    c. parent

    d. control

13. Which of the following is a set of prewritten classes that provide functionality for a program to perform tasks required when working with a database?

    a. IDE

    b. RAD

    c. ADO.NET 2.0

    d. APS.NET 2.0

14. The process of translating a program into a collection of instructions that can be understood by the electronics of a computer is called, program _____.

    a. compilation

    b. syntax

    c. class

    d. instantiation

15. A _____ application means the program will run on a computer or other device that supports Windows graphical user interface.

    a. Web site

    b. Windows

    c. Database

    d. Mobile

Visual Basic Programming
Chapter 1 Review

1. _____ is the physical equipment associated with a computer.

2. Once a program is stored in _____, the CPU of the computer can access the instructions in the program and perform activities.

3. _____ includes words, numbers, videos, graphics, and sound that programs manipulate, display, and process.

4. A computer program is designed and developed by people known as _____.

5. The term GUI stands for _____.

6. Most Visual Basic 2005 programs are _____ programs that communicate with the user through a GUI.

7. A(n) _____ is a set of words and symbols that can be interpreted by special computer software and eventually can be executed as instructions by a computer.

8. A(n) _____ is a collection of data organized in a manner that allows access, retrieval, and use of that data.

9. Visual Studio 2005 is a type of _____, which provides services and tools that enable a developer to code, test, and implement a program or application.

10. The _____ identifies the window and the application open in the window.

11. The _____ contains .NET components that you can use to develop the GUI for a program.

12. _____ is a derivative of the programming language, C, which originally was developed at Bell Labs in the 1970s.

13. The software environment in which programs and applications can be developed for .NET is called the _____.

14. A(n) _____ is a named group of program code.

15. _____ refers to the process of using pre-built classes to make application development faster, easier, and more reliable.
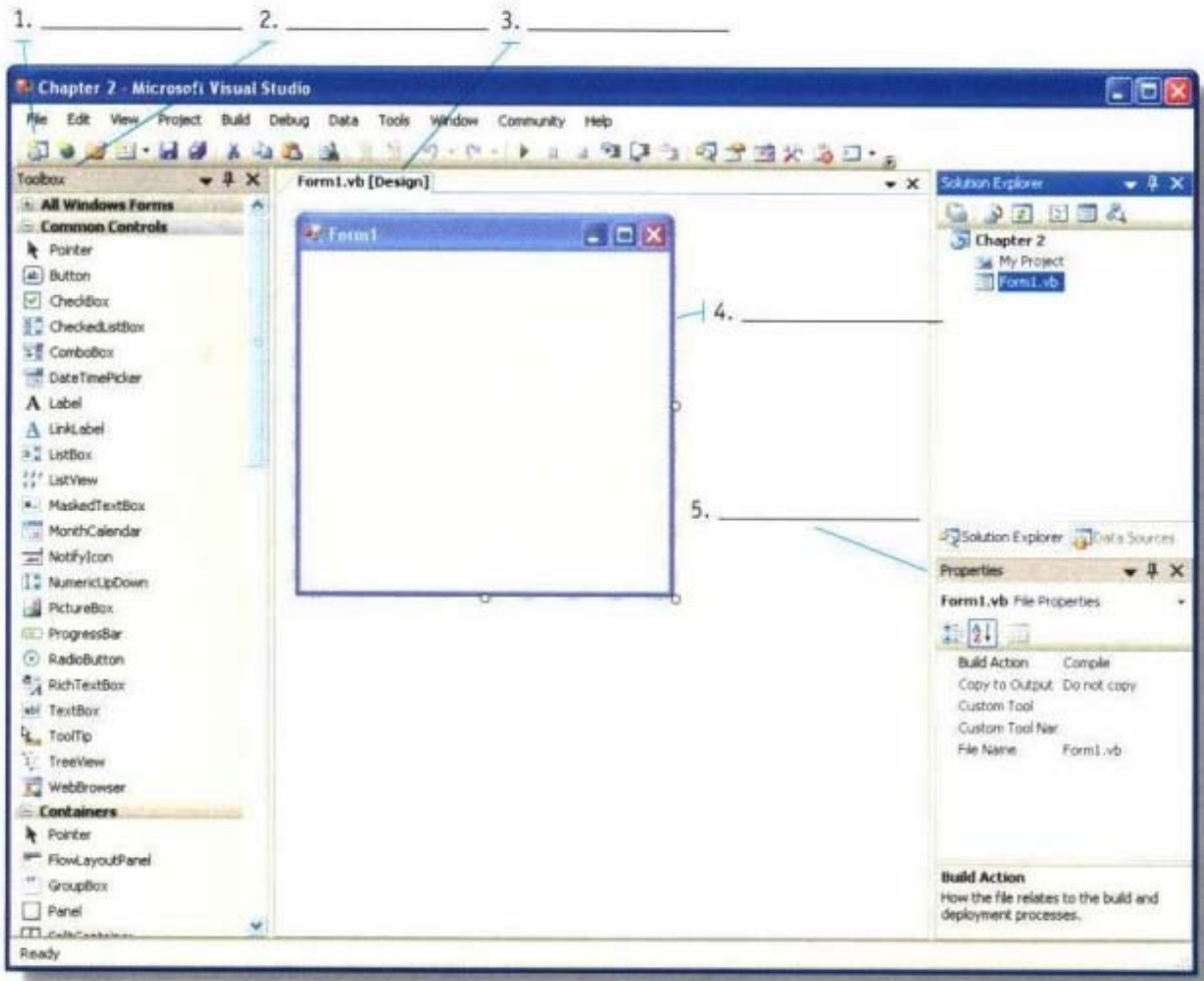
Visual Basic Programming
Chapter 1 Review

T   F   1. The set of instructions that directs a computer to perform tasks is called a GUI.

T   F   2. A scanner is a typical output device.

T   F   3. Computer hardware cannot perform any activity unless an instruction directs that hardware to act.

T   F   4. The term CPU stands for Computer Process Unit.

T   F   5. Saving data refers to placing the data electronically on a storage medium such as a hard disk.

T   F   6. A RAD means that the user has initiated an action that causes a program to perform the type of processing called for by the user.

T   F   7. All programs, regardless of their size and complexity, execute only a few fundamental operations: graphing, tools, GUI, and storage.

T   F   8. A program must be stored in RAM to control the operations of the computer.

T   F   9. Prior to performing memory and arithmetic operations, the numeric data used in the calculations must be stored in ARO.

T   F   10. Based on the result of a comparison operation, a program can perform one processing task if the condition tested for true and another processing task if the condition is not true.

T   F   11. Visual Studio can be used to write programs in four languages: Visual Basic, Visual C++, Visual C#, and Visual J#.

T   F   12. The Standard toolbar contains buttons that execute frequently used commands.

T   F   13. The main work area displays all menu names and displays .NET components.

T   F   14. Visual Basic is the most widely used programming language in the world because it is English-like and is considered one of the easier enterprise-level programming languages to learn.

T   F   15. The process of translating a program is called syntax.

Visual Basic Programming
Chapter 2 Review

Label the following parts of the window:

1. _____ 2. _____ 3. _____

4. _____

5. _____

6. What does RAD stand for?

7. What is the purpose of the Auto Hide button on the Toolbox title bar?

8. What is the difference between red and blue snap lines?

Visual Basic Programming
Chapter 2 Review

9. Which Windows Form object property was changed to display the words "Welcome Screen" on the title bar in Figure 2-71?

FIGURE 2-71

10. A Button, a Label, and a PictureBox are all _____

11. How do you select three Button objects on the \Windows Form object at the same time for formatting purposes?

12. What is the purpose of a mock-up?

13. What are the first two phases of the program development life cycle?

14. Write the Label object name, Title, together with the correct prefix.

Visual Basic Programming
Chapter 2 Review

15. Write the Button object name, Submit, together with the correct prefix.

16. Write the PictureBox object name, Computer, together with the correct prefix.

17. Which property of the Label object do you use to change the name of the label from Label1 to a new name?

18. What is the name of the button you can click to sort the property names in the Properties window from A to Z?

19. How do you save the project you have created for the user interface mock-up?

20. Name the four objects you learned in Chapter 2 together with the purpose of each object.

Visual Basic Programming
Chapter 2 Review

Debugging Exercises

1. List the steps required to change the poorly aligned buttons on the left to the properly aligned buttons on the right.

BEFORE

FIGURE 2-72a

AFTER

FIGURE 2-72b

2. Change the order of the following Use Case Definition steps to correspond to the following problem definition: A college provides every incoming freshman with either a laptop or desktop PC. The student should select the type of computer she or he wants. A program opens a window that displays each computer type when the student clicks the corresponding button, one picture at a time. When a student makes a decision about the type of computer, the student should click the Select PC button. After the student selects the type of computer, the student should exit the application.

USE CASE DEFINITION

1. User clicks the Select PC button.
2. User clicks the Laptop or Desktop button.
3. User terminates the program by clicking the Exit Window button.
4. Program displays a PC confirmation message and disables both computer type buttons. The Exit Window button becomes active.
5. Program displays a picture of the type of PC clicked by the user and will enable the Select PC button.
6. Program displays a picture of the type of PC clicked by the user.
7. User clicks Laptop or Desktop button.

Visual Basic Programming
Chapter 2 Review

Program Analysis

1. After you have placed objects on the Windows Form object (Figure 2-73), list the steps you would follow to change the font for the On-Line Auction label to Tahoma font, bold, 18 point.

FIGURE 2-73

2. List the steps you would perform to center horizontally the On-Line Auction label.

3. List the steps you would perform to center horizontally the PictureBox object on the Windows Form object in Figure 2-73.

Visual Basic Programming
Chapter 2 Review

4. List the steps you would perform to change the font for the Click to Bid label in Figure 2-73 to Tahoma, 12 point; and then center the label horizontally.

5. List the steps you would perform to align the two Button objects horizontally by the tops of the buttons on the \Windows Form object in Figure 2-73.

6. List the steps you would perform to center both the Bid Now button and the Cancel button horizontally on the Windows Form object in Figure 2-73.

7. In the real world, why is it important to get a user interface mock-up approved before proceeding with the rest of the project?

Visual Basic Programming
Chapter 2 Review

1. To start a new project, click the _____ button on the Standard toolbar.

    a. VB

    b. New Project

    c. Start

    d. Create Application

2. In the Properties window, the properties can appear in Categorized view or _____ view.

    a. Alphabetical

    b. Windows

    c. Default

    d. Home

3. To display the Solution Explorer window, click _____ on the menu bar, then click Solution Explorer on the menu.

    a. Solution

    b. Tools

    c. Window

    d. View

4. Which of the following will select a Windows From object:

    a. Click Select on the Standard toolbar

    b. Drag the sizing handles into the object

    c. Left-click anywhere in the object

    d. All of the above

5. When the mouse pointer is over the sizing handle, it changes to a _____ that indicates you can drag to change the size of the Windows Form object.

    a. plus sign in a small box

    b. blue line

    c. cross with arrowheads

    d. two-headed arrow

6. To center an object in the window, click _____ on the Menu bar and then point to Center in Form.

    a. Format

    b. Center

    c. Align

    d. View

7. To delete a selected object, _____.

    a. click REMOVE on the Insert menu

    b. press DELETE on the keyboard

    c. press Undo

    d. All of the above

8. You can undo an action you just performed by clicking the _____ button on the Standard toolbar.

    a. Remove

    b. Back

    c. Undo

    d. Do

9. To make two objects the same size, select both objects, click Format on the menu bar and then point to the _____ command.

    a. Make Same Size

    b. Size All

    c. Duplicate

    d. Copy

10. To align PictureBox objects, select the objects, click Format on the menu bar and then point to _____.

    a. Align

    b. Horizontal

    c. Vertical

    d. Either b or c

11. To add a Button object, _____.

    a. select Button on the Add menu

    b. right-click and select Button on the submenu

    c. drag the Button .NET component, and release the left mouse button

    d. all of the above

12. You can move a Button object by placing the mouse pointer on the button, the mouse pointer changes to a(n) _____, then drag the button to any location.

    a. car icon

    b. crosshair with four arrows

    c. double-headed arrow

    d. small hand icon

13. As you drag an object, _____ snap lines indicate when the sides of the object are aligned vertically with another object.

    a. black

    b. green

    c. red

    d. blue

14. A _____ indicates when text within an object is aligned.

    a. green border

    b. blue box

    c. red snap line

    d. crosshair with four arrowheads

15. Which of the following is not a phase in the program development life cycle?

    a.   Gather and analyze the program requirements

    b.   Coding the program

    c.   Designing the user interface

    d.   Awarding the contract

Visual Basic Programming
Chapter 2 Review

1. A(n) _____ is equivalent to a single program created using Visual Studio.

2. A(n) _____ is the window you use to build a program and is the window that will be displayed on your screen when you execute the program.

3. The Toolbox contains many graphical elements called _____ components that you place on the Windows Form object as graphical user interface objects.

4. _____ can describe a multitude of elements about an object, including its color, size, name, and position on the screen.

5. The _____ property in the Windows Form object Properties window contains the value that is displayed in the Title bar of the window.

6. To resize a Windows Form object, you can change the _____ property in the Properties window to the exact number of pixels you desire.

7. You use the Label .NET component in the Toolbox to place a(n) _____ on the Windows Form object.

8. To change the font, font style, and font size of a label, you can select the label and then use the _____ to make the change.

9. _____ means one element in the GUI is lined up horizontally or vertically with another element in the window.

10. A blue line, called a(n) _____, indicates the top of one button is aligned with the top of a button being added to the Windows Form object.

11. To save the work you have completed, you can click the _____ button on the Standard toolbar.

12. The _____ is a set of phases and steps that are followed by developers to design, create, and maintain a computer program.

13. The process of changing and updating programs is called _____.

14. A(n) _____ identifies the purpose of the program being developed, the application title, equations and calculations required, condition that must be tested, and other comments that would be helpful to understanding the problem.

15. The user interface is also called the _____ layer.

Visual Basic Programming
Chapter 2 Review

T   F   1. To create a new project using Visual Studio, you must specify the programming language you want to use and the type of program you will create.

T   F   2. Program names cannot contain spaces.

T   F   3. When a toolbox is in Dockable mode, it means that it can be dragged around and placed anywhere within the Visual Studio window.

T   F   4. If the Properties window is not displayed on your screen, you can display it by clicking Display on the Properties menu.

T   F   5. Visual Studio gives every object in a Visual Basic graphical user interface a default name, which then can be changed by the developer.

T   F   6. To select a Windows Form object, click Select on the Forms toolbar.

T   F   7. You cannot use the same name for two different objects in the same program.

T   F   8. The exact size of the Windows Form object is shown on the Status bar in pixels.

T   F   9. Visual Studio allows you to delete an object by clicking Delete on the Form command menu.

T   F   10. Pressing the Undo button arrow will automatically undo all actions performed during the session.

T   F   11. When the mouse pointer changes to a crosshair with four arrowheads, you can drag a PictureBox anywhere on the Windows Form object.

T   F   12. Whenever you want to select multiple objects, you can hold down the SHIFT key as you click each object.

T   F   13. Visual Studio offers two choices for alignment on the Align submenu: horizontal and vertical.

T   F   14. The AutoSize property for a Button object ensures the button is always large enough for text.

T   F   15. The Use Case Definition specifies the actions performed by the user and the actions the programmer is to take in response.

Visual Basic Programming
Chapter 3 Review

1. Which property controls the background color of the Form object?

2. Which property controls the background color of a Button object?

3. Which color palette is guaranteed to be displayed properl^y on every computer?

4. What is the use of the Image property for a PictureBox object?

5. To display an image in a PictureBox object in your application, you first must store the image in which folder within the application?

6. When you click the Ellipsis button for the Image property of a PictureBox object (Figure 3-82), what action does Visual Studio 2005 take?

FIGURE 3-82

7. What is the default setting of the PictureBox object SizeMode property?

Visual Basic Programming
Chapter 3 Review

8. Which option in the SizeMode property should be selected to make the image fit within the PictureBox object?

9. Which property has been set to False if a Button object in a window is dimmed when program execution begins?

10. Which property has been set to False if a PictureBox object is not displayed when you run the application?

11. What two options can you select for the Visible property in the Properties window?

12. Write a line of code that would set the Visible property for a PictureBox object named picHomeTown to False. (Use the Me command in your answer.)

13. Write **a** line of code that would set the Enabled property for a Button object named btnStart to True. (Use the Me command in your answer.)

Visual Basic Programming
Chapter 3 Review

14. Write a line of code that would set the Visible property for a Label object named lblDisplayTuition to True. (Use the Me command in your answer.)

15. Write a comment line of code that states, "The following code displays the image".

16. What color text is used to display comments in the code window of Visual Basic 2005?

17. Write a line of code that will close an application window and terminate the application. (Use the Me command in your answer.)

18. What does a blue squiggly line mean in the code window?

19. Why is it best that you use IntelliSense when you enter code in the code window? List two reasons.

20. Which symbol is associated with the assignment statement?

Visual Basic Programming
Chapter 3 Review

Debugging Exercises

1. Fix the following line of code to set the Visible property for the picCompanyLogo PictureBox object to True.

    > Me.picCompanyLogo.Visible.True

2. Fix the following line of code to disable the btnExitProgram Button object.

    > Me.btnExitProgram.Enabled = No

3. Fix the following line of code to set the Visible property for the lblDirections Label object to False.

    > Me.lblDirections.Visible = ' False

4. Fix the following comment line of code.

    > The ' following line of code makes the college logo visible

5. Fix the following line of code.

    > Me.Close

Visual Basic Programming
Chapter 3 Review

6. Examine the code window and the Error List window in Figure 3-83. Then, write a line of code to replace the line of code in error.
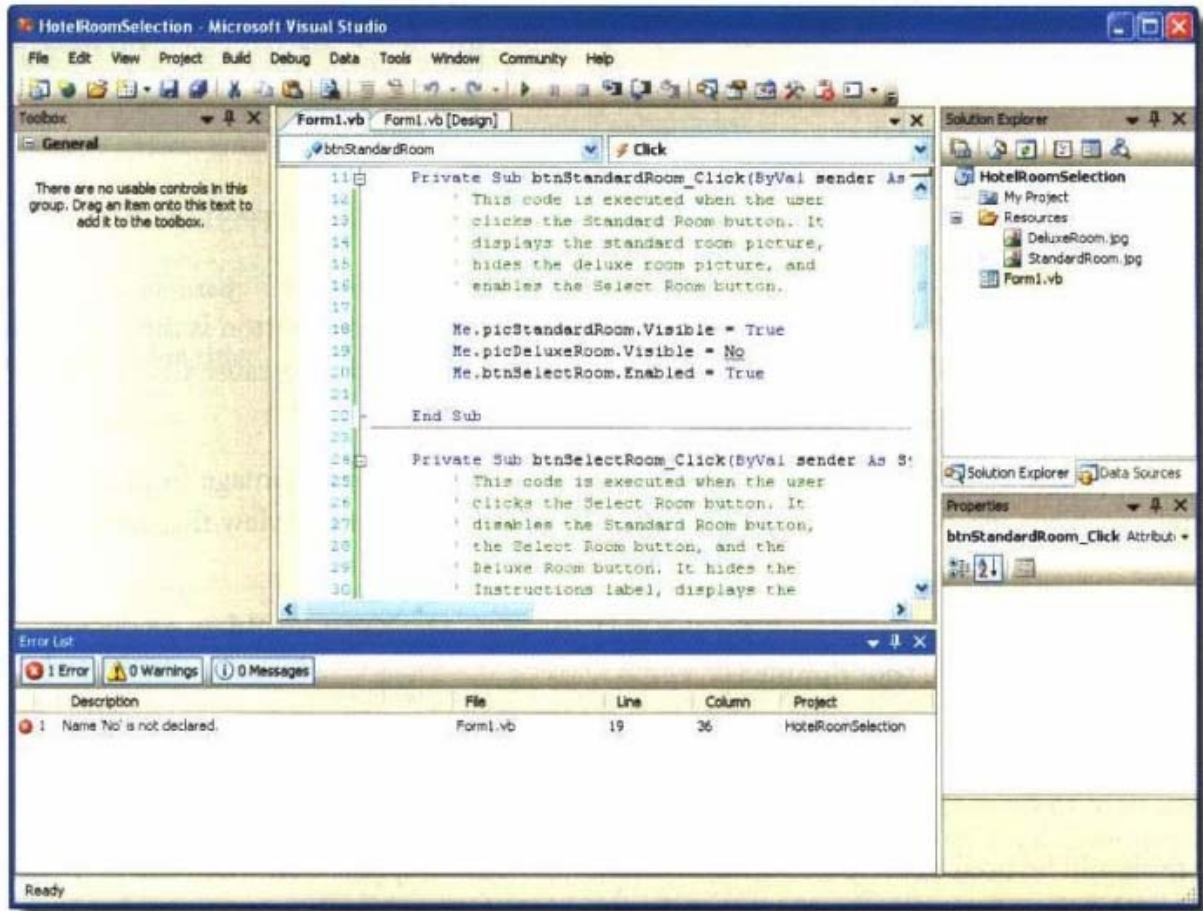

FIGURE 3-83

Visual Basic Programming
Chapter 3 Review

Program Analysis

1. For a bakery application shown in Figure 3-84, write the Visual Basic 2005 coding statement to view the cake picture when the user clicks the btnView button, assuming the Visible property for the picCake PictureBox object had been set to False in the Properties window.

FIGURE 3-84

2. Which property in the Properties window controls whether the btnPlaceOrder button is dimmed when the program begins execution? Which option for the property would you select to cause the button to be dimmed when the program begins execution?

3. When you import the picture of the cake into the Resources folder and select the image for use in the picCake PictureBox object, which SizeMode property option would you select to view the complete picture?

Visual Basic Programming
Chapter 3 Review

4. Write the Visual Basic 2005 coding statement for the btnView click event that would cause the btnPlaceOrder button to be active (not dimmed).

5. To make the window background color Yellow as shown in Figure 3-84, what property should you modify?

6. What property is used to cause the text, Birthda^y Cake Order Form, to be displayed in the window title bar?

7. What procedure should be used to close the window and terminate the application when the user clicks the Place Order button?

Visual Basic Programming
Chapter 3 Review

1. You can change the background color of an object through the use of the _____ property in the Properties window.

    a. Color

    b. BackColor

    c. Background

    d. Palette

2. For an image to display in a PictureBox object, you must place it in the _____ folder that is linked to the application.

    a. Import

    b. My Pictures

    c. Resources

    d. Web

3. The SizeMode list item _____, will place the image in the PictureBox object aligning the upper-left corners.

    a. Normal

    b. Standard

    c. Align

    d. Left-Justify

4. If a button is _____, it means that nothing will happen when you click it.

    a. visible

    b. linked

    c. enabled

    d. disabled

5. To run a program that you have created, point to the _____ button on the standard toolbar.

    a. Go

    b. Start

    c. Start Debugging

    d. Start Program

6. Visual Basic has a set of rules called, _____, that specifies how each statement must be written.

    a. syntax

    b. assignment

    c. libraries

    d. handlers

Visual Basic Programming
Chapter 3 Review

7. Which of the following code statements will result in a button being dimmed?

    a. btnSelectRoom.Enabled = Dimmed

    b. btnSelectRoom.Enabled = False

    c. btnSelectRoom.Value = Visible

    d. btnSelectRoom.Visible = ON

8. A well-written Visual Basic 2005 program contains _____ statements within the code to document what the code is doing.

    a. action

    b. block-write

    c. logic

    d. comment

9. A comment is preceded by which of the following?

    a. apostrophe

    b. period

    c. comma

    d. back slash

10. The _____ message means the Visual Basic compiler detected a coding error in the program.

    a. syntax checker

    b. run compile

    c. find errors

    d. build errors

11. A(n) _____ is a set of prewritten code that can be called by a statement in Visual Basic code.

    a. event

    b. instance

    c. syntax

    d. procedure

12. Developers can write procedures and place them in a(n) _____ so others can use them.

    a. object

    b. library

    c. program

    d. workbook folder

13. A(n) _____ means the user has initiated an action that causes the program to perform the type of processing called for by the users action.

    a. handler

    b. event

    c. occurrence

    d. trigger

14. Visual Basic 2005 provides which of the following tools to print the user interface designed on the Form1.bv [Design] tabbed page?

    a. Print Tabbed Page on the Standard toolbar

    b. Print As command on the File menu

    c. Print on the Tools menu

    d. None of the above

15. The purpose of a(n) _____ Screen is to indicate where in the Visual Studio window you should perform an activity; it also serves as a reminder of the method that you should use to create or enter code.

    a. Hint

    b. Debug

    c. Properties

    d. Intella

Visual Basic Programming
Chapter 3 Review

1. The _____ of an object is the color that is displayed in its background.

2. The _____ specifies the image that should be displayed in the selected PictureBox object.

3. The _____ property is used to adjust an image size to fit in a PictureBox object.

4. The property that controls whether an object is displayed on the Windows Form object is the _____ property.

5. When an object button becomes _____, that means it can be clicked to cause an event to occur.

6. _____ the program means the program is compiled from the instructions that you have written, into a form of instructions that the computer can execute.

7. _____ is the set of instructions written by a developer that direct a program to carry out the processing required.

8. The section of code called the _____, handles events that user actions trigger by executing code that performs the required processing.

9. An equal sign identifies a statement as a(n) _____ statement.

10. _____ displays all allowable entries you can make in a Visual Basic statement each time a dot, equal sign, or other special character required for the statement is typed.

11. If the Enabled property for a Button object is _____, the click event code for the button will be executed when the user clicks the button.

12. Comments in code are displayed as _____ text.

13. _____ should state the name of the program, the developer's name, the date, and the purpose of the program.

14. The _____ is message means that the Visual Basic compiler detected a coding error in the program.

15. The _____ document consists of a table that specifies an object in the user interface that will cause an event, the action taken by the user to trigger the event, and the event processing that must occur.

Visual Basic Programming
Chapter 3 Review

T   F   1. Visual Studio 2005 offers three palettes for BackColors and ForeColors: the Custom palette, the Web palette, and the System palette.

T   F   2. You can change the BackColor on any object except a Button object.

T   F   3. On the SizeMode list in the Properties window, Zoom will reduce or enlarge an image so it fits in the PictureBox window.

T   F   4. When you use the StretchImage option, some distortion of the image might occur in order to make the image fit within the PictureBox object.

T   F   5. When you click the Visible arrow in the Properties window, the list displays the words, On and Off.

T   F   6. Most program processing in an event-driven program occurs when the user triggers an event.

T   F   7. In Visual Basic, object names, properties, and property values are case sensitive.

T   F   8. When you enter a statement using IntelliSense, by default, IntelliSense will format the statement after you press the ENTER key.

T   F   9. You can highlight different entries that IntelliSense displays by pressing the UP and DOWN arrow keys.

T   F   10. If the Enabled property for a Button is On Click, the button will be executed when the user clicks the button.

T   F   11. Any letters or characters are allowed within comments, and will be displayed in red.

T   F   12. Because the Visual Basic compiler treats all characters following an apostrophe as comments, you must place all comments on a separate line.

T   F   13. You can use the TAB key one or more times to help vertically align your code.

T   F   14. The Compile/Debug window identifies the number of errors that occurred and displays a description of the error detected.

T   F   15. A button that is dimmed is disabled.

Visual Basic Programming
Chapter 4 Review

1. Name three numeric data types that can contain a decimal point.

2. Write a Dim statement for each of the following variables using the variable type and variable name that would be best for each value.
   a. Population of the United States
   b. Your weekly pay
   c. The smallest data type you can use for your age
   d. A constant for the first initial of your first name
   e. The minimum wage
   f. The name of the city in which you live
   g. The answer to a true/false question

3. Determine if each of the following variable names is valid or invalid. Please state the error in the invalid variable names.
   a. _intRadian
   b. PerccntOfSales#
   c. first_Input_Value
   d. R743-L56
   e. 3BZT477
   f. Close
   g. Name Of Client

4. List the steps specifying how you would perfectly align a group of TextBox objects along their left edges.

5. Which data type would be best for currency amounts?

Visual Basic Programming
Chapter 4 Review

6. Explain the precedence for the order of operations.

7. What is the solution to each of the following arithmetic expressions?

    a.   5 + 8 * 3 + 1

    b.   16 / 2 * 4 — 3

    c.   40 — 6 ^{A} 2 / 3

    d.   74 Mod 8

    e.   \ 4 + 3

    f.   2 ^{A} 3 + (8 — 5)

    g.   (15 Mod 2) — 1 + 4 * (16 \ 5)

8. What is the difference between a method and a procedure?

9. What is the difference between a variable and a literal?

10. Correct the following statements:

    `a.` Dim itAge As Integr

    `b.` Dim dblDiscountRate As Dbl

    `c.` Constant cstrCollege As String = "CVCC"

    `d.` Dim strLastName As String
       strLastName = 'McNamara'

    `e.` 1.5 * decHourlyPay   decOverTimePayRate

Visual Basic Programming
Chapter 4 Review

11. Write a statement that sets the focus on the TextBox object txtLastName.

12. Write a statement that removes the contents of the mAge TextBox object.

13. Write a statement that blanks the Text property of the 1b1F,ligibilityAge Label object.

14. Write a statement to convert the value in the String variable strWaistSize to an integer value and place the integer value in a variable named intWaistSize.

15. Write a statement to convert the value in the String variable named strHourlvPay to a Decimal value and place the Decimal value in a variable named decWage.

16. Write a statement that closes the form that currently is open.

17. Write a statement that declares a constant named decInsuranceDeductible as a Decimal data type and set its value to 250.00.

18. Which Windows Form property allows the user to press the ENTER key while the form is active and activate a button's event handler?

19. What is a local variable? How does its scope differ from that of a global variable?

20. When the following statements are executed, what would be displayed in the lblHourlyWage Label object?

```
decHourlyWage = 12.637
Me. lblHourlyWage.Text = decHourlyWage.ToString("C")
```

Visual Basic Programming
Chapter 4 Review

Debugging Exercises

1. Fix the following code:

```
Option Strict On
Dim intDistance As Integer
intDistance = 17.5
```

2. Fix the following code:

```
Dim dblRegularPay As Double Dim dblOvertimePay As Double
intRegularPay = 783.87
intOvertimePay = 105.92
lbl.TotalPay = (dblRegularPay + dblOvertimePay).ToString('C')
```

3. Analyze the following code and then correct it:

```
1 Public Class Form1
2
3     Private Sub btnCalculateArea_Click(ByVal sender As System.Object, ByVal e As System
      .EventArgs) Handles btnCalculateArea.Click
4         Dim strLengthOfSide As String
5         Dim intArea As Integer
6
7         strLengthOfSide = Me.txtLengthOfSide.Text
8         intArea = strLengthOfSide ^ 2
9         Me.lblArea.Text = intArea.ToString("C")
10
11     End Sub
12 End Class
```

Visual Basic Programming
Chapter 4 Review

Program Analysis

1. What will occur when the user clicks the btnSlope Button?

```
Private Sub btnSlope_Click(ByVal sender As System.Object, ByVal e As ⚓
System.EventArgs) Handles btnSlope.Click

Dim decRise As Decimal

Dim decRun As Decimal

Dim decSlope As Decimal

decRise = 12.3D

decRun = 2.1D

decSlope = decRise / decRun

 Me.lblSlope.Text = "The Line Slope is " & decSlope.ToString("F3") End Sub
```

2. How would the number .0256 be displayed if the format specifier ("P") is used in a Convert.ToString statement?

3. How would the number 3746.35555 be displayed if the format specifier ("F3") is used in a Convert.ToString statement?

4. If you want the user to enter her telephone number with the area code, which .NET component would be best to use on the Windows Form object?

Visual Basic Programming
Chapter 4 Review

5. Using the Format Specification with the ToString procedure, write the statement that would display:

   a. The value in the decDvdCost variable with a dollar sign and two places to the right of the decimal place in a label named lblDvd.

   b. The value in the decWithholdingTaxRate variable with a percent sign and one place to the right of the decimal point in a label named 1b1WithboldingTaxRate.

   c. The value in the decOilRevenue variable with commas as needed, two places to the right of the decimal place, and no dollar sign in a label called lblOilRevenue.

6. Write a single line of code to declare a variable decWindSpeed as a Decimal data type and assign it the value 25.47. Use a forced literal to ensure the compiler views this number as a Decimal data type.

7. What would the values of the following variables be at the end of the code that follows:

   a. intParts

   b. intBoxes

   c. intLeftovers

```
Dim intParts As Integer Dim intBoxes As Integer
Dim intLeftovers As Integer
intParts = 77 intPartsPerBox = 9

intBoxes = intParts \ intPartsPerBox
intLeftovers = intParts Mod intBoxes
```

8. Are the following statements written correctly? If not, how should they be written?

```
Dim dblPay as Double
Me.lblPay.Text = db1Pay.ToString("C2")
```

Visual Basic Programming
Chapter 4 Review

9. For a Button object named btnCalories, write the click event handler to implement the following requirements to calculate the number of calories burned in a run:

    a. Declare variables named strMilesRan, decCaloriesConsumed, and decMilesRan.

    b. Declare a constant named cdecCaloriesBurnedPerHour and assign it the value 700 (you burn 700 calories for every mile you run).

    c. Allow the user to enter the number of miles she ran today.

    d. Convert the miles to a Decimal data type.

    e. Calculate the number of calories the user burned during their run.

    f. Display the result rounded to zero decimal places in a label named 1b1CaloriesBurned.

10. What would the output be when the user clicks the btnDrivingAge Button?

```
Private Sub btnDrivingAge_Click(ByVal sender As System.Object, ByVal e As System.EventArgs)
Handles btnDrivingAge.Click

Dim intPresentAge As Integer

Const cintDrivingAge As Integer = 16

Dim intYearsToDrive As Integer

intPresentAge = 13

intYearsToDrive = cintDrivingAge - intPresentAge

    Me.lblYearsLeft.Text = intYearsToDrive.ToString() & " year(s) until you can drive."

End Sub
```

Visual Basic Programming
Chapter 4 Review

1. _____ indicate where a TextBox object aligns with other objects on the Windows Forms object.
    a. Grid lines
    b. Snap lines
    c. Alignment tabs
    d. Double arrows

2. The _____ allows you to specify the data format of the value typed into a text box.
    a. FormTextBox
    b. DataTextBox
    c. MaskedTextBox
    d. FormatedTextBox

3. A variable is a named location in _____ where data is stored.
    a. RAM
    b. ROM
    c. CMOS
    d. DIM

4. Which of the following identifies an assignment statement?
    a. Dot operator (.)
    b. Ampersand (&)
    c. Asterisk (*)
    d. Equal sign (=)

5. A _____ in a program indicates the variable is not referenced within the program.
    a. green squiggly underline
    b. red dashed underline
    c. blue italicized code
    d. highlighted area

6. A(n) _____ variable identifies a location in RAM where an integer value is stored.
    a. Data
    b. Integer
    c. Short
    d. All of the above

Visual Basic Programming
Chapter 4 Review

7. Which of the following can represent a huge positive and a very small negative number that can include values to the right of the decimal point?

   a. DecimalPoint

   b. Boolean

   c. Double

   d. Precision

8. The _____ prefix is used for string data type.

   a. str

   b. stg

   c. string

   d. char

9. A variable that can only be referenced within the region of the program where it is defined is called a _____ variable.

   a. literal

   b. program

   c. global

   d. local

10. A variable that can be used in multiple regions of a program is called a _____ variable.

   a. regional

   b. global

   c. multiple

   d. system

11. A procedure that returns a value is called a(n) _____.

   a. function

   b. sub

   c. class

   d. argument

12. A(n) _____ identifies a value required by a procedure.

   a. operator

   b. function

   c. argument

   d. literal

13. Which of the following separates a class name from a procedure name?

    a. Comma

    b. Dot operator

    c. Argument

    d. Equal sign

14. The arithmetic operator _____ will return the remainder.

    a. Rmd

    b. Div

    c. Rem

    d. Mod

15. Which of the following arithmetic operators will perform division?

    a. Backslash (\ )

    b. Slash (/)

    c. MOD

    d. All of the above

Visual Basic Programming
Chapter 4 Review

1. A(n) _____ object allows you to enter data into a program.

2. A(n) _____ is a named location in RAM that can store a string value.

3. To define a variable, the keyword _____ is required.

4. A(n) _____ data type must be used in arithmetic operations.

5. A(n) _____ data type holds a nondecimal whole number in Visual Basic.

6. A(n) _____ data type can represent accurately large or very precise decimal numbers.

7. The _____ data type represents a single keystroke such as a letter of the alphabet, punctuation, or a symbol.

8. The prefix for the date data type is _____.

9. A(n) _____ variable will contain one permanent value throughout the execution of the program.

10. The _____ specifies where within the program the variable can be referenced in a Visual Basic statement.

11. A(n) _____ is a pre-written set of code that can be called by a statement in the Visual Basic program.

12. A procedure that performs its task but does not return a value is called a(n) _____ procedure.

13. The _____ operator divides the number of the left of the operator by the number on the right of the operator and returns an integer value that is the remainder of the division operation.

14. The _____ function converts data from the Numeric data type to the String data type.

15. The process of joining two different values into a single string is called _____.

Visual Basic Programming
Chapter 4 Review

T   F   1. Users can only enter characters into a text box.

T   F   2. A text box does not contain a scroll bar.

T   F   3. If the Text property in a Label object is set to no content, the Label object will not be displayed in the Forms Window during design time.

T   F   4. When the Toolbox is closed, clicking the Toolbox button on the Standard toolbar will open the Toolbox.

T   F   5. The String data type allows only alphabetic characters to be stored in it.

T   F   6. A variable name must begin with a letter or an underline.

T   F   7. An equal sign in an assignment statement is not required, but good programming practice.

T   F   8. The Double data type represents numbers so they are exactly and precisely correct.

T   F   9. The Boolean data type has the range of values of 0 and 1.

T   F   10. The Byte data type is allocated 1 byte of memory and has a range of values from 0 to 255.

T   F   11. The Literal variable data type is a variable that can contain values from 0 to 32, 767.

T   F   12. It is mandatory when using a variable in a program that the variable is defined prior to using that variable name in a statement.

T   F   13. When a variable is defined in a procedure and the procedure ends, the values in the local variables defined in the procedure are destroyed.

T   F   14. In the statement, Convert.ToInt32(strNumberOfSongs), the procedure name is Convert.

T   F   15. Visual Basic will, by default, automatically convert data types if the data type on the right side of the equal sign is different from the data type on the left side of the equal sign.

Visual Basic Programming
Chapter 5 Review

1. Name the six relational operators and state the purpose of each operator.

2. How is input entered on an actual Pocket PC device while an application is running?

3. Write an If...Then statement that tests if the value in the variable intTemp is between 32 and 95 degrees. If the number is in that range, set the Text property for the lblWarning Label object to "Normal Temperature".

4. Write an If...Then...Else statement that assigns 30 to a variable named intMinutcs if strRoadway is equal to "Interstate". Otherwise, assign 60 to intMinutes.

5. List the three most common logical operators and explain their use.

Visual Basic Programming
Chapter 5 Review

6. Rewrite the following line of code without a Not logical operator but keeping the same logical processing:

   If Not intHeight <= 72 Then

7. The intent of the following statement is to check if the radDeluxeRoom RadioButton object is checked. What is the error in the statement? Rewrite the statement so it is correct.

   If radDeluxeRoom = Checked Then

8. The intent of following statement is to check if the value in the intGrade variable is less than 0 or greater than 100. What is the error in the statement? Rewrite the statement so it is correct.

   If intGrade < 0 And intGrade > 100 Then

9. Using the Internet for research, identify, a Wi-Fi hotspot in a city near you that can be used for a Pocket PC. Is the hotspot free? Submit your findings to your instructor.

10. Using the Internet for research, find an advertisement for a new Pocket PC. Submit the advertisement to your instructor.

11. Why do most developers indent the code within a decision structure?

12. Write a statement that creates the dialog box shown in Figure 5-99 in a Windows application.

FIGURE 5-99

13. What is the difference between a Panel object and a GroupBox object? Can you use both objects in a Windows application? In a Mobile application?

14. What is the difference between the Or logical operator and the Xor logical operator?

15. Write a data validation statement that would check to ensure the value in the intAge variable is between 1 and 120. If the age is not valid, display an error message box stating that the age is not valid.

16. How many radio buttons in a group can he selected at one time?

17. Using the concatenation operator (&), write a statement that would create the compound word teahouse from the following two strings: strFirst = "tea" and strSecond= "house". Assign the compound word to the strCompound string variable.

18. Write a statement that would clear the radio button named radSurfBoard.

19. Write a Select Case statement using the fewest Case statements possible to display the number of days in each month. The user enters the number of the month, such as 8, which is converted to an integer and assigned to the intMonth variable. The Select Case statement should display a message box that states the number of days in the month, such as "31 Days".

20. Which logical operator has the highest precedence in the order of operations?

Visual Basic Programming
Chapter 5 Review

Debugging Exercises

1. Explain how the two statements shown in Figure 5-100 are evaluated:

```
If strResponse = "Red" AndAlso strAnswer = "Green" Then

    If strResponse = "Red" And strAnswer = "Green" Then
```

FIGURE 5-100

2. Explain the error in the code shown in Figure 5-101 and explain how to correct the code.

```
If dblCommission >= 2500 Then
    Dim intBonus As Integer
    intBonus = 500
Else
    intBonus = 0
End If
```

FIGURE 5-101

3. The Select Case statement shown in Figure 5-102 contains one or more errors. identify the error(s) and rewrite the statements correctly.

```
Select Case intNumberOfSeats
    Case > 5000
        strVenueType = "Stadium"
    Case > 2000
        strVenueType = "Amphitheater"
    Case > 1000
        strVenueType = "Auditorium"
    Case > 200
        strVenueType = "Theater"
    Case > 0
        strVenueType = "Club"
    Else Case
        strVenueType = "Error"
Select End
```

FIGURE 5-102

4. The Select Case statement shown in Figure 5-103 contains one or more errors. Identify the error(s) and rewrite the statements correctly.

```
Select Case charFlightCode
        Case 'F', 'A'
                Me.lblFare.Text = 'First Class'
        Case 'B', 'Q'
                Me.lblFare.Text = 'Business Class'
        Case 'Y', 'S', 'M'
                Me.lblFare.Text = 'Full Fare Economy'
        Case 'K', 'C'
                Me.lblFare.Text = 'Preferred Economy'
        Case 'U', 'J', 'P', 'G'
                Me.lblFare.Text = 'Economy'
        Else
                Me.lblFare.Text = 'Unknown'
End Select
```

FIGURE 5-103

5. The If...Then...Else statement shown in Figure 5-104 contains one or more errors. identify the error(s) and rewrite the statements correctly.

```
If strShippingMethod = "Overnite" Then
        If strDeliveryTime = "Morning"
            decDeliveryCost = 29.00D
    Else
            decDeliveryCost = 24.00D
Else
        If strShippingMethod = "Two Days" Then
            decDeliveryCost = 14.00D
    Else
            decDeliveryCost = 4.00D
End If
```

FIGURE 5-104

Visual Basic Programming
Chapter 5 Review

Program Analysis

1. Write an If...Then...Else decision structure to compare the two numbers in the intPayl and intPay2 variables. Display a message box stating intPayl is greater than intPay2, or intPayl is less than or equal to intPay2.

2. Write an If statement that displays the message box "Snow is possible" if the value in the variable decTemp is within the range 0 to 32.

3. Write an If...Then...Else statement that checks the value in the variable charGender for the value M (Male) or F (Female) and assigns the information shown in Figure 5-105 to lhlCollcgeExpectation.Text based on the gender. If the variable charGender contains a value other than M or F, assign the message "Invalid Gender" to 1b1CollegeExpectation.Text.

Gender	College Expectation
Male	75% plan to graduate from college
Female	85% plan to graduate from college

FIGURE 5-105

4. Write a Select Case statement that tests the user's age in a variable named intAge and assigns the name of the favorite snack of that age group to the variable strSnack, according to the preferences shown in Figure 5-106.

Age	Favorite Snack
Under age 7	Yogurt
Age 7 to 12	Potato Chips
Age 13 to 18	Chocolate
Over Age 18	Gum

FIGURE 5-106

5. Rewrite the Select Case statement shown in Figure 5-107 as an If...Then...Else statement.

```
Select Case charDepartment
    Case "B", "b"
        strDept = "Baby / Infant Clothing"
    Case "T", "t"
        strDept = "Technology"
End Select
```

FIGURE 5-107

6. Rewrite the If...Then...Else statement shown in Figure 5-108 as a Select Case statement.

```
If intGrade >= 9 And intGrade <= 12 Then
    Me.lblSchool.Text = "High School"
ElseIf intGrade >= 7 Then
    Me.lblSchool.Text = "Middle School"
ElseIf intGrade >= 1 Then
    Me.lblSchool.Text = "Elementary School"
Else
    Me.lblSchool.Text = "Invalid Grade"
End If
```

FIGURE 5-108

7. What is the output of the code shown in Figure 5-109 if the word Black is entered in the txtSkiSlope text box?

```
Select Case Me.txtSkiSlope.Text
    Case "Green"
        MessageBox.Show("Beginner Slope")
    Case "Blue"
        MessageBox.Show("Intermediate Slope")
    Case "Black"
        MessageBox.Show("Expert Slope")
    Case Else
        MessageBox.Show("Invalid Entry")
End Select
```

FIGURE 5-109

8. After the execution of the Select Case structure in Figure 5-110, what value will he found in the Text property of lblFemaleHeight if the user enters the number 74 into the txtEnterHeight text box? If the number 81 is entered? If the number 59 is entered?

```
Dim intHeightInches As Integer
intHeightInches = Convert.ToInt32(Me.txtEnterHeight.Text)
Select Case intHeightInches
    Case Is < 61
        Me.lblFemaleHeight.Text = "Petite"
    Case 61 To 69
        Me.lblFemaleHeight.Text = "Average"
    Case 70 To 80
        Me.lblFemaleHeight.Text = "Tall"
    Case 80 To 120
        Me.lblFemaleHeight.Text = "Towering"
    Case Else
        Me.lblFemaleHeight.Text = "Not Possible"
End Select
```

FIGURE 5-110

9. In each of the following examples, is the condition True or False?

   a. "C" > = "C"

   b. "G" > itg),

   c. **C.** "Content" < "Contented"

   d. "Apple" <> "apple"

   e. "40" > = "Forty"

   f. ("Paris" < "Barcelona") And ("Amsterdam" <_ "Prague")

   g. ("Ford" > "Chevrolet") Or ("Toyota" < "Honda")

   h. $3\;^A\;2 <= 3 * 2$

   i. Not ("CNN" >_ "ABC")

   j. Not ("Tim" > "Tom") And Not ("Great" <> "great")

Visual Basic Programming
Chapter 5 Review

1. Visual Studio has a built-in _____ that displays a working Pocket PC.

    a. Plug-in

    b. Emulator

    c. Pocket device

    d. PDA

2. You develop an application as a(n) _____ application for a Pocket PC.

    1. PDA

    2. Emulator

    3. Smart Device

    4. IntelliSense

3. Which of the following two container objects can you use in a Pocket PC application to group objects?

    a. Panel & TabControl

    b. Radio & Group

    c. Container & Group

    d. Panel & Radio

4. You drag and drop RadioButton objects from the _____ onto the PocketPC Form object.

    a. Control Panel

    b. Button Form

    c. Drag & Drop menu

    d. Toolbox

5. When a RadioButton is selected, the Checked property of the button will display _____.

    a. Checked

    b. On

    c. True

    d. Enabled

6. A Panel object in a Pocket PC application displays which of the following?

    a. A labeled border

    b. Scroll bars

    c. A caption

    d. None of the above

7. The MessageBoxButton argument _____ displays an OK and Cancel button.

    a. OKCancel

    b. DisplayOK

    c. CancelOK

    d. YesNoOKRetryCancel

Visual Basic Programming
Chapter 5 Review

8. Which of the following is used to concatenate Visual Basic strings?

    a. con

    b. &

    c. -

    d. /

9. The statement that tests the radio button is called a(n) _____ statement.

    a. RadioDecision

    b. RadioTest

    c. conversational

    d. conditional

10. Which of the following relational operator means not equal to?

    a. =/

    b. /=

    c. <>

    d. ><

11. When more than one condition is included in an If…Then…Else statement, the conditions are called a(n) _____ condition.

    a. Logical

    b. Compound

    c. Expression

    d. Case

12. The _____ logical operator allows you to state conditions that are best expressed in a negative way.

    a. Not

    b. Null

    c. Opposite

    d. Switch

13. Which of the following logical operator has the lowest order of precedence?

    a. Not

    b. Also

    c. Or

    d. And

Visual Basic Programming
Chapter 5 Review

14. Visual Basic includes a code library called IntelliSense _____, that you can insert into an application.

    a. Applets

    b. Macros

    c. Emulator

    d. Code snippets

15. The Pocket PC has the _____ to enter data into applications.

    a. Forms object

    b. Input emulator

    c. Input panel

    d. Pocket Keyboard

Visual Basic Programming
Chapter 5 Review

1. A user can enter data into a handheld device by pressing a pointing device called a(n) _____ on a displayed keyboard.

2. The term PDA stands for _____.

3. A(n) _____ object associates items as a group, allowing the user to select one item from the group.

4. The MessageBoxButton argument _____ displays the Yes and No buttons.

5. A(n) _____ separates the arguments in a message Box.

6. When entering code, you type the _____ to insert the dot operator.

7. All _____ statements result in the tested condition either being true or false.

8. When using Visual Studio 2005, characters are stored and sequenced in _____, which is a coding methodology that can accommodate more than 60,000 characters.

9. When you place one If statement within another If statement, it is called a(n) _____ statement.

10. For the _____ logical operator to return a true value, all of the conditions tested must be true.

11. The _____ logical operator has the highest order or precedence.

12. When using relational operators in a Select Case statement, you use the keyword _____ with the relational operator.

13. When using a range of values in a case statement, you use the beginning value, the word _____, and then the ending value.

14. Visual Basic includes a code library of almost five hundred pieces of code, called IntelliSense _____ that you can insert in an application.

15. The Visual Basic _____ function can check the input value to determine if the value can be converted into a numeric value.

Visual Basic Programming
Chapter 5 Review

T   F   1. The health care industry is the largest user of PDAs.

T   F   2. Visual Studio can be used to create mobile applications on any smart device that uses a form of the Windows operating system.

T   F   3. RadioButton objects allow the user to make choices.

T   F   4. A message in a Smart Device application looks different from a message box in a Windows application, and they are coded in a different way.

T   F   5. A message box on a Smart Device has the room display a message or a caption in the title bar, but not both.

T   F   6. When in the code editing window press CTRL+SPACE to have IntelliSense assist you.

T   F   7. In the older versions of Visual Basic, the & was used to concatenate strings, but newer versions only support the use of the + sign for concatenating strings.

T   F   8. Visual Basic automatically indents code in an If…Then statement.

T   F   9. All characters found in strings, including letters, numbers, and special characters are in a sequence from low to high based on the manner in which the characters are coded internally on the computer.

T   F   10. If a condition is both true and false at the same time, the first one in the program takes precedence when the code is run.

T   F   11. When you write a nested If statement, the inner If statement must be fully contained within the outer If statement.

T   F   12. You are limited to three levels of nested If statements.

T   F   13. The Or logical operator is used to compare two, and only two, conditions.

T   F   14. A Select Case statement is used for numbers only.

T   F   15. To deploy an application, click the Start Debugging button on the Standard toolbar, select the application, then click the Deploy button.

Visual Basic Programming
Chapter 6 Review

1. Write a statement that displays the default value of 12.50 in the input box shown in Figure 6-106 and assigns the return value from the InputBox function to a variable named strPavRate.
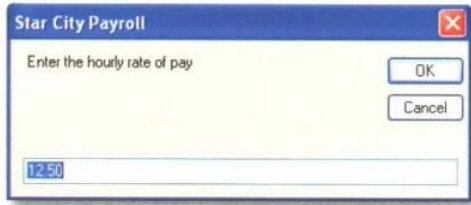

FIGURE 6-106

2. Write compound operators for the following equations:

   a. intTouchdown = intTouchdown + 6

   b. dblSquare = dblSquare ^{A} 2

   c. strFast = strFast & "Comet"

3. Write For...Next loops that calculate the sum of the following ranges and assign their sum to a variable named intSum:

4. Find the errors in the following For...Next header statements:

   a.   For intCounter = "1" To "19"

   b.   For intNumber = 98 To 71 Step 2

   c.   For intValue = 12 To 52 Step —4

   d.   For strCount = —15 To 5 Step 5

Visual Basic Programming
Chapter 6 Review

5. Explain the purpose of placing an ampersand before or within a MenuStrip item.

6. Write the command to clear a ListBox object named lstBaseballPlayers.

7. Write a command to add your favorite sports team to a ListBox object named lstFavoriteTeam.

8. Using a compound operator, write an assignment statement to increment the value in intAmount by 7.

9. Using a compound operator, write an assignment statement to decrease the value in intCounter by 4.5.

10. Using a compound operator, write an assignment statement to increment the value in intQpantity by 10.

Visual Basic Programming
Chapter 6 Review

11. Write a top-controlled Do Until loop with an empty body that would continue until intValue is greater than 19.

12. Write a bottom-controlled Do While loop with an empty body that continues while the user enters "Yes" into the strContinue variable.

13. Write a Do While loop to validate that the user enters a non-zero integer into an input box for a variable named intDenominator.

14. Is the For...Next loop top-controlled or bottom-controlled?

15. Write the code for an infinite Do Until loop with the variable intInfinite.

16. Which loop should be used if you know the required number of times the loop will be executed?

17. What is the fewest number of times a top-controlled Do Until loop is executed?

18. Write a data validation Do loop to check that the variable intAge entered from an input box is between 1 and 115.

19. A loop inside another loop is called a _____

20. When you insert standard items in a MenuStrip object, what File menu items are automatically created by default?

Visual Basic Programming
Chapter 6 Review

Debugging Exercises

1. The loop shown in Figure 6-107 should repeat 10 times. If it will not repeat 10 times, change the code so it will.

```
9          For intRepeat = 20 To 10
10             MessageBox.Show("The value is " & intRepeat.ToString("C0"))
11         Next
```

FIGURE 6-107

2. What output does the code shown in Figure 6-108 produce? How would you change the code to produce a list box containing the values 12-20?

```
15         intRate = 12
16         Do While intRate <= 10
17             Me.lstDisplay.Items.Add(intRate)
18             intRate += 1
19         Loop
```

FIGURE 6-108

3. What is the output of the code shown in Figure 6-109?

```
21         Dim intAdd As Integer
22         Dim intOuterLoop As Integer
23         Dim intInnerLoop As Integer
24
25         intAdd = 0
26         For intOuterLoop = 1 To 8
27             For intInnerLoop = 3 To 7
28                 intAdd += 1
29             Next
30         Next
31         MessageBox.Show("The final value is " & intAdd.ToString())
```

FIGURE 6-109

4. What is the output of the code shown in Figure 6-110?

```
33          Dim intValue As Integer
34
35          intValue = 2
36          Do While intValue <= 9
37              Me.lstDisplay.Items.Add(intValue & " " & intValue ^ 3)
38              intValue += 2
39          Loop
```

FIGURE 6-110

5. Fix the errors in the loop shown in Figure 6-111.

```
41          Dim intStart As Integer = 8
42
43          Loop
44          intStart = +4
45          Do While intStart < 24
```

FIGURE 6-111

6. What is the output of the code shown in Figure 6-112?

```
53          intCount = 40
54          Do Until intCount < 26
55              intCount -= 2
56              Me.lstCount.Items.Add(intCount)
57          Loop
```

FIGURE 6-112

7. Fix the following errors in the code shown in Figure 6-113.

```
59        Dim decCost As Decimal = 3.5D
60
61        Do Until decCost > 10.5D
62            MessageBox.Show("The cost is now " & decCost.ToString("F1"))
63            decCost -= 0.5
64        Loop
```

FIGURE 6-113

8. In the example shown in Figure 6-114, you want the code to count the odd numbers from 1 to 99. What is missing?

```
66        Dim intOddNumber As Integer = 1
67
68        Do While intOddNumber <= 99
69            Me.lstDisplay.Items.Add("Odd Numbers: " & intOddNumber.ToString())
70        Loop
```

FIGURE 6-114

Visual Basic Programming
Chapter 6 Review

Program Analysis

1. What is the value of lblResult after the code shown in Figure 6-115 is executed?

```
73        Dim intCounter As Integer = -20
74
75        Do While intCount < 25
76            intCount += 5
77            Me.lblResult.Text &= intCount.ToString() & " "
78        Loop
```

FIGURE 6-115

2. What is the value of lblResult after the code shown in Figure 6-116 is executed?

```
80        Dim intCountIt As Integer
81
82        intCountIt = 6
83        Do
84            intCountIt += 3
85            Me.lblResult.Text &= intCountIt.ToString() & " "
86        Loop Until intCountIt = 21
```

FIGURE 6-116

3. Rewrite the top-controlled Do While loop shown in Figure 6-117 as a top-controlled Do Until loop.

```
88        Dim intQuantity As Integer
89
90        intQuantity = -5
91        Do While intQuantity < 30
92            intQuantity += 5
93        Loop
```

FIGURE 6-117

4. Convert the Do loop shown in Figure 6-118 to a For...Next loop:

```
95          Dim intIncrease As Integer
96
97          intIncrease = 10
98          Do While intIncrease < 40
99              Me.lstDisplay.Items.Add(intIncrease)
100             intIncrease += 2
101         Loop
```

FIGURE 6-118

5. Flow many times will the inner statement inside the nested loop in Figure 6-119 be executed?

```
103         For intOuterLoop = 3 To 5
104             For intInnerLoop = 6 To 10
105                 Me.lstDays.Items.Add("Value: " & intOuterLoop.ToString() & _
106                     " Count: " & intInnerLoop.ToString())
107             Next
108         Next
```

FIGURE 6-119

6. How many times will the loop in Figure 6-120 be executed?

```
110         Dim intQuantitySold As Integer
111         Dim decTax As Decimal
112
113         intQuantitySold = 1
114         Do Until intQuantitySold = 5
115             decTax = intQuantitySold * 0.07
116             Me.lstDisplay.Items.Add("Tax Amount: " & decTax.ToString())
117             intQuantitySold += 1
118         Loop
```

FIGURE 6-120

7. Write a For...Next loop that adds the odd numbers 1 through 49 and assigns their sum to the variable intSum. The program should start with the lines shown in Figure 6-121 (use the following variables in your code).

```
120        Dim intStartValue As Integer
121        Dim intEndValue As Integer
122        Dim intSum As Integer
123
124        intStartValue = 1
125        intEndValue = 49
126        intSum = 0
```

FIGURE 6-121

Visual Basic Programming
Chapter 6 Review

1. Another term for looping is _____.

   a. structure

   b. Do…While

   c. looping

   d. action tag

2. A _____ is a group of commands, or items, presented in a list.

   a. menu

   b. ListBox

   c. TextBox

   d. loop

3. If a subcategory is not open, click the _____ next to the subcategory name.

   a. minus sign

   b. plus sign

   c. ampersand

   d. Open Subcategory menu item

4. To use a keyboard shortcut, press and hold the _____ key and then press the designated hot key.

   a. ESC

   b. CTRL

   c. SHIFT

   d. ALT

5. Which of the following is not a compound operator?

   a. +=

   b. */

   c. &=

   d. *=

6. Which of the following is the string concatenation operator?

   a. _+

   b. \+

   c. /=

   d. &=

Visual Basic Programming
Chapter 6 Review

7. Visual Basic indicates keywords such as For, To, and Next in the color _____.

   a. blue

   b. red

   c. green

   d. yellow

8. Which of the following loops are used when a process is repeated an exact number of times?

   a. While…Until

   b. Do…While

   c. For…Next

   d. Count…For

9. A(n) _____ loop is tested before the loop is entered.

   a. top-controlled

   b. bottom-controlled

   c. condition

   d. infinite

10. Use a _____ loop if you want the body of a loop to execute one time then test the condition to see if it continues.

    a. top-controlled

    b. bottom-controlled

    c. count-controlled

    d. condition-controlled

11. A(n) _____ is a loop that never ends.

    a. structured loop

    b. primed loop

    c. infinite loop

    d. data tip

12. A loop within a loop is called a(n) _____ loop.

    a. validated

    b. primed

    c. infinite

    d. nested

Visual Basic Programming
Chapter 6 Review

13. Resolving defects in code is called _____.

    a. bugging

    b. debugging

    c. validating

    d. breakpointing

14. To run and test a program with a breakpoint, click Start Debugging on the _____.

    a. Execute toolbar

    b. menu bar

    c. Standard toolbar

    d. Tools Menu

15. To continue a program that is paused at a breakpoint, click the _____.

    a. Continue button on the Standard toolbar

    b. Resume on the Menu Bar

    c. double-click the highlighted line of code

    d. All of the above

Visual Basic Programming
Chapter 6 Review

1. The process of repeating a set of instructions while a condition is true or until a condition is true is called _____.

2. A(n) _____ provides a keyboard shortcut.

3. Action tags provide a way for you to specify a set of actions, called _____, for an object as you design a form.

4. A(n) _____ object allows you to gather input without placing a TextBox for the requested value on the windows Form object.

5. A(n) _____ displays a group of values, with one item per line.

6. A variable that contains an accumulated value is called a(n)_____.

7. Each repetition of a loop is called a(n) _____.

8. The _____ loop executes as long as a condition is true.

9. A(n) _____ loop tests the condition at the bottom of the loop, so the body of the loop is executed at least once.

10. A loop that does not end is called a(n) _____.

11. You can interrupt an infinite loop by clicking the _____ on the toolbar.

12. Starting a loop with a preset value in the variable tested in the condition is called _____.

13. _____ are stop points placed in the code to tell the debugger where and when to pause the execution of the application.

14. When an application is in break mode, the Breakpoint line is highlighted in _____.

15. When programming using Visual Basic 2005, you can create a deployed program by using _____.

Visual Basic Programming
Chapter 6 Review

T   F   1. An advantage of a menu is that it conserves space instead of cluttering the form with objects.

T   F   2. A letter representing a hot key appears bold in the menu name.

T   F   3. Visual Basic 2005 contains a Smart Menu Wizard Tab that allows you to create a full standard menu bar.

T   F   4. The InputBox object returns all entered data as string, which can be converted to the appropriate data type needed.

T   F   5. After placing a ListBox on the Windows Form object, you can adjust the size as needed by dragging the size handles.

T   F   6. To clear the items in a ListBox object, the Clear method works as is does for the TextBox object.

T   F   7. If the number of items exceeds the number that can be displayed in the designated space of a ListBox, you must select Scroll Bar in the Properties window to add a scroll bar.

T   F   8. The variable that contains an accumulated value such as the total of all vehicle speeds entered is called a counter.

T   F   9. The code, intResult += 3, shows an example of a compound operator.

T   F   10. Visual Basic has two main types of loops: Do…Next loops, and For…Until loops.

T   F   11. In a Do loop, the body of the loop is executed until a condition is false.

T   F   12. You can use a top-controlled loop if you want to test the condition before entering the body of the loop.

T   F   13. While in break mode, you can examine the values in all variables that are within the scope of execution through the use of Data Tips.

T   F   14. A breakpoint is identified by a bullet to the left of the line numbers and the highlight on the code.

T   F   15. When a breakpoint is set, the program pauses after executing the statement containing the breakpoint.

Visual Basic Programming
Chapter 7 Review

I. Name five Web sites that incorporate Web forms and state the purpose of each Web form (such as to enter customer information for purchasing an item). Do not list any sites that were mentioned in this chapter.

2. What type of Web page does ASPNET 2.0 create?

3. When you test a Web application, the page opens in a(n) _____

4. A Web page or Web site is hosted on a(n) _____

5. A Web site that allows you to enter information is considered a(n) _____ Web page.

6. In an active server page, what computer executes the event handler code you write in Visual Basic 2005?

7. In a Windows application, each object has a (Name) property. In a Web application, each object has a _____ property, which is similar to the Name property.

8. Write a line of code that would display the date selected by the user in the TextBox shown in Figure 7-85.

FIGURE 7-85

9. In the ListBox object shown in Figure 7-86, write the lines of code that would display in a Label named lblSizeDisplay "you have selected size: Large" if the user selects "L".
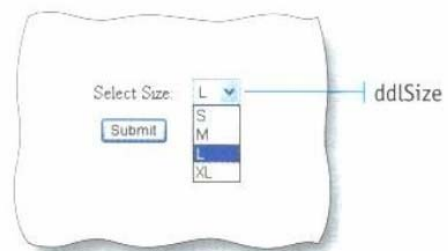
FIGURE 7-86

10. Explain the major difference between CheckBox and RadioButton objects.

Visual Basic Programming
Chapter 7 Review

11. What color arc validation error messages by default?

12. Which control validator confirms that the user enters the constant value of 9.0?

13. Which control validator checks if a value is between 10 and 30?

14. Which control validator confirms that a TextBox object is not left blank?

15. Write a line of code that would convert strResponse to all uppercase letters.

16. Write a line of code that would assign the length of a string named strCompany to the variable intSizeOfCompanyName.

Visual Basic Programming
Chapter 7 Review

17. Write a line of code that would display in a Label object named lblDisplayBirthday the date a user selected from a Calendar object named cldBirthdate.

18. How does the PictureBox object called an Image object in ASP.NET differ from an image in a Windows application?

19. In the browser window shown in Figure 7-87, name the type of validation and list any changes that were made in the Properties window.
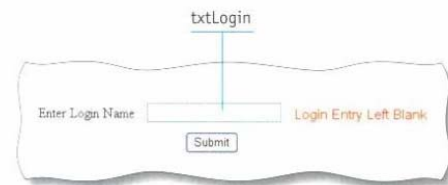

FIGURE 7-87

20. What three keys can you press simultaneously to open the full screen option?

Visual Basic Programming
Chapter 7 Review

Debugging Exercises

1. Fix the error in the following line of code.

   intFindLength = strHomeName.Text(Length)

2. Fix the error in the following lines of code.

   If (Me.chkDormStudent.Checked)= True Then
   decTuitionCost += 3400

   End If

3. What will be contained in the Text property of the 1b1Result Label object after executing the following code?

   ```
   Dim strPhrase As String
   strPhrase = "          On the Wings"
   strPhrase += " of an Eagle!          "
   strPhrase = strPhrase.Trim()
   Me.lblResult.Text=strPhrase
   ```

Visual Basic Programming
Chapter 7 Review

4. What is the output of the following code?

> DimstrPhraseAs String
>
> strPhrase = "Don't judge a book by its cover"
>
> Me.lblResult.Text= "Count =" & strPhrase.Length

5. Write the output that would be displayed in the Info label after the following statements are executed ?

```
lblInfo.Text = "Home Address: " & "<br>" & "3506 Wards Rd" & "<br>"
& "Lynchburg, VA 02443"
```

Visual Basic Programming
Chapter 7 Review

Program Analysis

1. Name each of the property changes that are required in the Properties window for a Range Validator in order to validate that a TextBox named txtDeductibleRange contains a value in the range 250.00 up to and including 10,000.00. Display an error message that states "Please enter an acceptable deductible between 250 and 10,000".

2. Write a Visual Basic statement that displays the length of a variable named strSentence in a Label object named 1b1StringLength.

3. Write the section of code that would display a list of services in a Label object named 1b1Service if the user selects any of the corresponding CheckBoxes shown in Figure 7-88.

FIGURE 7-88

Visual Basic Programming
Chapter 7 Review

1. A _____ Web page reacts to the data that a user enters.

    a. virtual

    b. static

    c. dynamic

    d. server

2. A(n) _____ computer runs the Web browser that requests a Web page from the Web server and displays the page.

    a. server-side

    b. client-side

    c. dynamic-side

    d. static-side

3. To create a Visual Basic Web project, start Visual Studio, and click the _____ button on the Standard toolbar.

    a. New Web Site

    b. Web Project

    c. Create Web Site

    d. Begin Project

4. You specify the title bar text for a Web form using the _____ property.

    a. Text

    b. Button

    c. Object

    d. Title

5. An Image object needs a(n) _____ to specify where a picture resides.

    a. ASP

    b. URL

    c. label

    d. ID

6. A _____ object allows the user to choose from several options.

    a. CheckBox

    b. Scroll

    c. RadioButton

    d. List

Visual Basic Programming
Chapter 7 Review

7. The prefix for the name of a DropDownList object in Visual Basic is _____.

   a. lis

   b. drp

   c. ddl

   d. dpl

8. The custom _____ object allows you to enter the number of rows and columns for a table.

   a. Size

   b. Table

   c. Design

   d. Layout

9. You can customize the response to missing data by changing the _____ property of a RequiredFieldValidator.

   a. DisplayMessage

   b. RequiredData

   c. MissingData

   d. ErrorMessage

10. Which of the following controls verifies that a required field contains data?

    a. RequiredDataValidator

    b. RequiredFieldValidator

    c. RequiredInputValidator

    d. RangeValidator

11. The RangeValidator control uses the prefix _____ in its name.

    a. rvl

    b. ran

    c. rgv

    d. rnv

12. The CompareValidator object uses the prefix _____ in its name.

    a. cmv

    b. cpv

    c. com

    d. cmp

13. Which of the following HTML tags is used to break text by starting a new line?

    a. <bk>

    b.

    c. <new>

    d. <ln>

14. The prefix used for naming a ValidationSummary object is _____.

    a. vsy

    b. vsm

    c. vls

    d. code

15. The _____ procedure converts a string to all uppercase.

    a. StringUpper

    b. ConvertUpper

    c. ToUpper

    d. ConvertString

Visual Basic Programming
Chapter 7 Review

1. A _____ is a page displayed in a Web browser that requests data from a user.

2. A Web page that displays information such as text and pictures with no interactivity is called a(n) _____ Web page.

3. _____ allows you to anchor to a specific position on the page when you drag objects to a form.

4. A(n) _____ object allows a user to choose only one option from a group of related options.

5. The _____ object allows users to select one item from a pre-defined list.

6. The _____ object is organized by month and displays the number of days in each month as appropriate for the year.

7. To place a custom Table object on a Web form, you can click Layout on the menu bar, and then click _____.

8. The _____ object finds a specified object to validate and determines whether the object is empty.

9. You use the _____ object to compare an object's value with another object or constant value.

10. The _____ control confirms whether the user entered data that matches standard formats such as phone numbers, e-mail addresses, URLs, or Social Security numbers.

11. The prefix _____ is used for the RegularExpressionValidator control.

12. The _____ control lets you display validation error messages in a single location.

13. You can use the _____ property of a String class to determine the number of characters in a particular string.

14. Visual Basic provides a procedure named _____ to remove spaces from the beginning and end of a string.

15. The _____ procedure converts a string to all lowercase.

Visual Basic Programming
Chapter 7 Review

T F 1. When you create an ASP.NET 2.0 Web application you must have IIS or FrontPage server extensions installed.

T F 2. You cannot use blank spaces in Web application filenames because browsers do not support blank spaces in Web page addresses.

T F 3. HTML tools and Standard tools on the Toolbox are completely interchangeable because they function the same way.

T F 4. Both the PictureBox and Image object place an image into an application, but the Image object needs a URL to specify where the picture resides.

T F 5. After you set absolute positioning, you can freely position any object on the Web form by dragging it.

T F 6. With ASP.NET 2.0 you must create labels for entering text on a Web form.

T F 7. The CheckBox and RadioButton objects work the same in Web, Windows, and mobile applications.

T F 8. Placeholder text for a CheckBox will remain on the screen and will display when the page is viewed in a Web browser, until you change the Text property.

T F 9. With a DropDownList object, the list of items remains hidden until the user right-clicks the first item in the list.

T F 10. When creating a Calendar object, always use the prefix cal in the name.

T F 11. To use a custom Table object to lay out a Web form, you place the Table object on the form first and then add objects to it.

T F 12. When you drag to resize columns in a Table object, the width is shown in pixels (px) in the column.

T F 13. In the Toolbox, you can expand the Validation tools by clicking the plus sign next to Validation.

T F 14. RequiredFieldValidator is a built-in control which is used to test whether an entry falls within a given range.

T F 15. You can apply more than one type of validation control to an object to validate more than one aspect of the data entered.

Visual Basic Programming
Chapter 8 Review

1. Write the line of code that would hold frmSplashScreen for approximately three seconds.

2. What is the name of the property that allows you to place a graphic on the background of the Windows Form object?

3. What is the difference between passing by value and passing by reference?

4. What is the least number of arguments you can pass to a Sub procedure?

5. What is the section of code called that performs a specific task and does not return a value?

6. What is the section of code called that performs a specific task and does return a value?

Visual Basic Programming
Chapter 8 Review

7. What happens to the variables that were passed by value when you leave a Sub procedure?

8. Name the two types of procedures.

9. How many value(s) can a Function procedure return?

10. Write the Visual Basic statements that will declare a Sub procedure called VotingBooth that receives one variable called intCount. The variable intCount will be changed in the procedure. Write only the first and last lines of the Sub procedure.

11. What is the name of a variable that is passed to a procedure?

12. If you want a copy of a variable passed to a procedure, which way should you pass it?

13. You must have a return statement in a Function procedure. True or false?

14. When multiple arguments are passed to a procedure, the order is not important. True or false?

15. Which type of exception would be detected if you use the conversion command Convert.ToInt32 to convert a non-integer value?

16. Which type of exception would be detected in the code in Figure 8-58?

```
Dim intMultiple As Integer
Dim intProduct As Integer

intMultiple = 2000000000
intProduct = intMultiple ^ 10
```
FIGURE 8-58

17. Which type of exception would be detected if you used the conversion command Convert.ToDecimal to try to convert a letter of the alphabet?

FIGURE 8-59

18. If you use multiple Catch blocks in a Try-Catch block of code, how do you determine the order of the Catch blocks?

19. If you include an optional Finally block, it should follow directly after the Try block. True or false?

20. When deciding whether a set of programming steps should be placed in a Sub procedure or a Function procedure, what are three questions you should ask?

Visual Basic Programming
Chapter 8 Review

Debugging Exercises

1. Fix the code in Figure 8-59:

```
Private Sub btnItemPrice_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles btnItemPrice.Click
        Dim decPrice As Decimal
        Dim decTax As Decimal

        decPrice = Convert.ToDecimal(Me.txtCost.Text)
        TaxCost(decPrice, decTax)
        Me.lblDisplay.Text("The tax amount is " & decTax.ToString())
End Sub

Private Sub TaxCost(price, tax)
        tax = price * .06
End Sub
```

FIGURE 8-59

2. Fix the code in Figure 8-60:

```
Private Sub btnBaseball_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles btnBaseball.Click
        Dim decHits As Decimal = 200
        Dim decTimesAtBat As Decimal = 498
        Dim decBattingAverage As Decimal

        decBattingAverage=FindRunsBattedIn(decHits, decTimesAtBat)
        Me.lblHits.Text("The batting average is " & _
            decBattingAverage.ToString())
End Sub

Private Function BattingAverage(byVal decHitsCount as Decimal, byVal
decNumberAtBat as Decimal)
        Dim decAverageAtBat as Decimal
        decAverage = decHitsCount / decNumberAtBat
        Return decAverage
End Sub
```

FIGURE 8-60

3. Fix the code in Figure 8-61:

```vb
Private Sub btnInventory_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles btnInventory.Click
        Dim intItemNumber As Integer
        Dim decCost As Decimal
        decCost = Convert.ToDecimal(Me.txtPrice.Text)
        DisplayProducts(intItemNumber, decCost)
End Sub

Private Sub DisplayProducts(ByRef decCostValue As Decimal, ByRef intItem As
Integer)
        Me.lblItemDisplay.Text("Item: " & intItem & " Costs: " & _
            decCostValue.ToString())
End Sub
```

FIGURE 8-61

Visual Basic Programming
Chapter 8 Review

Analysis Exercises

1. What is the output of the code in Figure 8-62?

```
Private Sub btnSevens_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles btnSevens.Click
    Dim intCount As Integer
    For intCount = 1 To 7
        CalculateSevens(intCount)
    Next
End Sub

Private Sub CalculateSevens(ByVal intCountValue As Integer)
    Dim intResult As Integer
    intResult = intCountValue ^ 3
    Me.lstAnswer.Items.Add(intResult.ToString())
End Sub
```

FIGURE 8-62

2. What is the output of the code in Figure 8-63?

```
Private Sub btnJoke_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles btnJoke.Click
    DisplayRiddle()
    DisplayAnswer()
End Sub

Private Sub DisplayAnswer()
    Me.lblAnswer.Text = "Because it has a spring in it"
End Sub

Sub DisplayRiddle()
    Me.lblRiddle.Text = "Why should you carry a watch when crossing a
desert?"
End Sub
```

FIGURE 8-63

3. What is the output of the code in Figure 8-64?

```
Private Sub btnBedrock_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles btnBedrock.Click
        Dim strFullName As String = "Fred Flintstone"
        Dim strSecondName As String = "Barney Rubble"

        CountLength(strFullName, strSecondName)
        Me.lblEnd.Text = "My favorite was " & strSecondName
End Sub

Private Sub CountLength(ByVal strFullName As String, ByRef strSecondName As
String)
        Me.lblFirst.Text = "The first name has " & strFullName.Length & "
letters."
        Me.lblSecond.Text = "The second name has " & strSecondName.Length &
" letters."
        strSecondName = "Dino"
End Sub
```

FIGURE 8-64

4. A program contains the procedure declaration shown in Figure 8-66. Write the Function call statement that assigns the returned value to intCubed and passes a variable named intValue.

```
Private Function Cube(ByVal intNum As Integer) As Integer
      Return intNum * intNum * intNum
End Function
```

FIGURE 8-66

5. What is the output of the code ini Figure 8-65?

```vb
Private Sub btnStrangeFacts_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles btnStrangeFacts.Click
        Dim intHangerLength As Integer = 44
        Dim intMen As Integer = 2000
        Dim intWomen As Integer = 7000
        Dim intValue As Integer

        intValue = Talk(intMen, intWomen)
        Me.lblResponse.Text = "The couple would say " & intValue & " words a
day"
        AverageHanger(intHangerLength)
 End Sub

Private Sub AverageHanger(ByVal intHanger As Integer)
        Me.lblPhrase.Text = "The average length of a coat hanger when
straightened is " & intHanger & " inches."
 End Sub

 Function Talk(ByVal intM As Integer, ByVal intW As Integer) As Integer
        Me.lblPhrase1.Text = "The average man says " & intM & " words a day"
        Me.lblPhrase2.Text = "The average woman says " & intW & " words a
day"
        Return intM + intW
 End Function
```

FIGURE 8-65

6. Write a statement that passes the variable intBase to a procedure and assigns the return value to a variable named intSolution. Write the code that would declare a variable named intPopulation as an Integer. Allow the user to enter the population of their city in a TextBox object named txtCityPopulation. Convert the value to an integer within a Try block. Write a Try-Catch block with an overflow Catch block first, a format exception Catch block second, and a generic exception last. Each Catch block should display a MessageBox explaining the problem with the user's input.

Visual Basic Programming
Chapter 8 Review

7. Write the code for a Sub procedure named FindHeight that will calculate the total number of inches based on the height of a person when given the feet and inches. For example, if a person is 5'10", they are 70 inches tall. Display the result in a MessageBox.

Visual Basic Programming
Chapter 8 Review

1. As an application grows, it is important to divide each facet of a problem into separate sections of code called _____.

   a. plug-ins

   b. procedures

   c. blocks

   d. ComboBoxes

2. To pause a splash screen for a specific period of time, you can use the _____ procedure.

   a. Time

   b. Pause

   c. Sleep

   d. Wait

3. The following line of code will suspend the execution of an application for 5 seconds.

   a. Thread.Sleep(5)

   b. Thread.Sleep(50)

   c. Thread.Sleep(500)

   d. Thread.Sleep(5000)

4. When using a ComboBox, if the user has not made a selection the SelectedIndex property is set to _____.

   a. 0

   b. 1

   c. -1

   d. null

5. A _____ procedure is a procedure that completes its task but does not return any data.

   a. Sub

   b. Call

   c. ByVal

   d. Function

6. A Sub procedure is a series of Visual Basic statements enclosed by the _____ and _____ statement.

   a. Start, End

   b. Sub, End Sub

   c. Start, Exit

   d. Begin Sub, End Sub

Visual Basic Programming
Chapter 8 Review

7. The word _____ appearing before the Sub keyword specifies the Sub procedure can be called only by code within the class where the Sub procedure is located.

    a. Private

    b. Public

    c. ByRef

    d. Class

8. What is the argument in the following line of code: intPartyNumber = Convert.ToInt32(Me.txtNumberInParty.Text)?

    a. intPartyNumber

    b. Me

    c. txtNumberInParty

    d. Me.txtNumberInParty.Text

9. When an argument is passed _____, the original value of the variable in the calling procedure is not affected.

    a. ByRef

    b. ByVal

    c. Private

    d. Public

10. When you pass a variable _____ the original variable in the calling procedure is changed.

    a. ByRef

    b. ByVal

    c. ByInt

    d. ByChg

11. In a Function procedure, _____ is the default, which means any code in any class can reference the Function procedure.

    a. ByRef

    b. Keyword

    c. Public

    d. Private

12. It is best to use a _____ procedure when you plan to return a value from a called procedure.

    a. Function

    b. Sub

    c. Return

    d. Splash

13. You can only return one value with a Function when you use the _____ keyword.
    a. Single
    b. Ref
    c. One
    d. Return

14. Visual Basic provides a tool to detect exceptions and take corrective action called
    _____.
    a. Catch-It
    b. Try-Catch
    c. Error-Check
    d. Code-Check

15. Which of the following is the exception type when a variable that has no value is passed to a procedure?
    a. FormatException
    b. ArgumentNullException
    c. NullReferenceException
    d. SystemException

Visual Basic Programming
Chapter 8 Review

1. A(n) _____ is an opening screen that appears as an application in loading, signaling that the program is about to start displaying an image.

2. The ComboBox object has a(n) _____ property which returns a string value that represents the selected list item.

3. The _____ property for the ComboBox object is assigned to the number that represents a zero-based index of the selected item.

4. When a program is broken into manageable parts, each part is called a(n) _____.

5. Visual Basic treats variables passed from a calling procedure to a called procedure in one of two ways: _____ or _____.

6. When an argument is passed _____, it means the Sub procedure has access to the value of the passed argument, but does not actually reference the variable declared in the calling procedure.

7. Passing a variable _____ means the Sub procedure can change the original value.

8. Passing a variable _____ means the Sub procedure cannot change the original value.

9. A(n) _____ procedure is similar to a Sub procedure except that it returns a single value to the calling procedure.

10. The keyword _____ is used in the Function procedure to return a single value.

11. A(n) _____ variable is defined within the class but outside any procedure.

12. By default, a class-level variable declared using the Dim statement has _____ access.

13. When a value exceeds its assigned data type, a(n) _____ occurs.

14. The _____ document identifies the purpose of the program being developed.

15. The _____ document consists of a table that specifies an object in the user interface that will cause an event, the action taken by the user to trigger the event, and the event processing that must occur.

Visual Basic Programming
Chapter 8 Review

T   F   1. The Sleep procedure uses an integer value that determines how long the application should pause.

T   F   2. A Slash screen is absolutely needed in all applications.

T   F   3. A Splash screen makes programs load faster.

T   F   4. Visual Basic provides two types of procedures: Sub procedures and Function procedures.

T   F   5. A Sub procedure is the series of Visual Basic statements enclosed by the Sub and End Sub statements.

T   F   6. Sub procedures are usually triggered by clicking a button or in reaction to an event.

T   F   7. The name of a Sub procedure will be found inside of a set of parentheses.

T   F   8. After a Sub procedure is completed, control returns to the calling procedure.

T   F   9. A Sub procedure cannot be called within a loop.

T   F   10. ByVal is default for all passed arguments.

T   F   11. Visual Basic treats passed variables from a calling procedure in one of three ways: ByVal, ByRef, or ByInt.

T   F   12. Variables can be passed to a Sub procedure, while literals cannot be passed.

T   F   13. Passing ByVal means the Sub procedure cannot change the original value.

T   F   14. You can pass up to 10 arguments to a Sub procedure.

T   F   15. The Try-Catch set of statements is a tool you can use to detect exceptions and take corrective action.

Visual Basic Programming
Enrichment Chapter Review

1. Which Office programs can be programmed using VSTO 2005?

2. How can you obtain VSTO?

3. What is the name of the VB control that can be placed in the task pane on the right side of an Office window?

4. What is the difference between a Word document and a Word template?

5. What is the file extension for a Word document?

6. What is the file extension for a Word template?

Visual Basic Programming
Enrichment Chapter Review

7. Write a line of code that displays the Actions Pane Control on the right side of a window.

8. What procedure should the code for question #7 use?

9. Write a line of code that displays the day of the week determined by a DateTimePicker object named datPayDay in a Label object named 1b1WeekDay.

10. 'Write a line of code that displays the date chosen by the user in a DateTimePicker object named datReservation. Print the following sentence in a Label object named 1b1PlaneReservation. "Your flight will depart on _____ (date chosen)".

11. Rewrite the command line shown in Figure EC-54 with the ^A symbol.

```
me.lblDisplay.Text = Math.Pow(4.0, 3.0)
            FIGURE EC-54
```

Visual Basic Programming
Enrichment Chapter Review

12. Variables should be of the Integer data type to use the Math class methods. True or false?

13. You can place VB controls in a Word table. True or false?

14. Write the statement that assigns the square root of 81.0 to a Label object named lblSquareRoot.

15. The formula that computes the area of a circle is Pi * radius^2. Write a VB equation using two Math class methods to compute the area of a circle. Assign this statement to the variable decCircicArea. The radius variable is decCircleRadius.

16. Write a statement that assigns the smaller of two numbers (8.3 and 2.9) to a variable named decLessNumber.

Visual Basic Programming
Enrichment Chapter Review

17. Write a line of code that computes the cost of a loan payment made over 15 years for a home mortgage of S175,000 at an interest rate of 6.8%. Assign the payment amount to a variable named decPaymentAmount.

18. Write a line of code that computes the cost of a loan payment for a gaming computer system made over two years for a loan amount of $5000 at 8.9%. Assign the monthly payment amount to a variable named decGameComputcr.

19. Write a line of code that computes the amount of money that you need to invest to save $10,000 for a kitchen makeover for your home. You will invest a monthly amount for the next five years at an interest rate of 4% at the beginning of each month. Assign your monthly investment amount to a variable named decKitchenRedo.

20. What is the name of the Math class that computes the absolute value of any number?

Visual Basic Programming
Enrichment Chapter Review

Debugging Exercises

1. Rewrite the code shown in Figure EC-55 correctly:

```
Dim firstValue As Integer = 29.25
MessageBox.Show(Math.Round(firstValue)
```
FIGURE EC-55

2. Rewrite the code shown in Figure EC-56 correctly:

```
' The following statement computes a loan
' for 6 years, $16,000 at 12%
loanPayment = Pmt(0.12, 6, 16000)
```
FIGURE EC-56

3. Rewrite the code shown in Figure EC-57 correctly:

```
MessageBox.Show(Math.Max(decFirstValue, decSecondValue, decThirdValue)
```
FIGURE EC-57

Visual Basic Programming
Enrichment Chapter Review

Program Analysis

In exercises 1 – 8, evaluate the expression to find the resulting value:

1. Math.Sqrt(16.0)

2. Math.Round(– 2.45)

3. Math.Ahs(-5.999)

4. Math.Ceiling(5.01)

5. Math.Floor(— 2.2)

6. Math.Max(Math.PI, 3.4)

7. Math.Pow(4.0, 2.0)

8. Math.Min(1.9, Math.E)

9. Determine the output that is displayed in the ListBox object according to the code shown in Figure EC-58:

```
Dim startValue As Decimal
decStartValue = 8.0
Me.lstDisplay.Add(decStartValue)
Me.lstDisplay.Add(Math.Pow(decStartValue, 3.0))
Me.lstDisplay.Add(Math.Ceiling(decStartValue + 0.56))
Me.lstDisplay.Add(Math.Pow(Math.PI, 2.14))
Me.lstDisplay.Add(Math.Max(decStartValue, 7.99))
```
FIGURE EC-58

Visual Basic Programming
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10. Determine the output that is displayed in the ListBox object according to the code shown in Figure EC-59:

```
Dim decMonthlyPayment As Decimal
decMonthlyPayment = Pmt(0.08 / 12, 7 * 12, 50000)
Me.lstMortgage.Add(decMonthlyPayment.ToString("C"))
```
FIGURE EC-59

11. Write lines of code for each step to determine the monthly payments for a car loan of $21,095 over 60 months at an interest rate 10.9%.

    a. Declare all the variables for the values given: decPrinciple, decMonths, decRate.

    b. Declare a variable named decLoanPayment to hold the monthly payment.

    c. Compute the payment.

    d. Display the payment in a ListBox named lstDisplayPayment.

12. Write code for each step to determine the largest of three numbers.

    a. Declare three variables named decFirstNum, decSecondNum, decThirdNum, and assign the values 5.2, 3.8, and 12.1 to them

    b. Declare a decimal data type named decTempNum.

    c. Declare a decimal data type named decLargestNurn.

    d. Using a Math procedure, assign the larger of the first and second variable to decTempNum.

    e. Using a Math procedure, assign the larger of decTempNum and decThirdNum to decLargestNutn.

    f. Display the largest number as a Label named 1b1BigNumber.

Visual Basic Programming
Enrichment Chapter Review

1. A _____ is a special type of Office document that determines the basic structure for a document.

   a. template

   b. wizard

   c. VSTO

   d. workbook

2. To create a VSTO project, start Visual Studio and click the _____ button on the Standard toolbar.

   a. Open Project

   b. New Project

   c. Create VSTO

   d. Start VSTO

3. Which of the following extension indicates a Word template?

   a. .tem

   b. .doc

   c. .dot

   d. .vsto

4. When working with Word in VSTO, you work in _____, which enables you to customize the template by adding interactive objects.

   a. .NET view

   b. VSTO view

   c. Object view

   d. Design view

5. The prefix used for a DateTimePicker object is _____.

   a. dtp

   b. dat

   c. dtm

   d. pic

6. To add a table to a Word document, click the _____ button on the Word Standard toolbar.

   a. VSTO Table

   b. Table object

   c. Insert Table

   d. Create Table

Visual Basic Programming
Enrichment Chapter Review

7. To change the style of a table, _____ can apply one of many built-in table formats.

    a. Formatter

    b. Styler

    c. .NET

    d. AutoFormat

8. A function called _____ performs calculations for loan payments.

    a. Pmt

    b. Calc

    c. Loan

    d. Math

9. The ComboBox object has a _____ property that returns an integer value corresponding to the selected list item.

    a. ListIndex

    b. PropertyList

    c. SelectedItem

    d. SelectedList

10. The Math class method _____ returns the number rounded to the nearest integer.

    a. Math.Near(x)

    b. Math.Integer(x)

    c. Math.Abs(x)

    d. Math.Round(x)

Visual Basic Programming
Enrichment Chapter Review

1. The term VSTO stands for _____.

2. A(n) _____ is a special type of Office file that determines the basic structure for a document.

3. Using VSTO in Design view, you can create Word or Excel documents and drag _____ component objects onto the document.

4. You name a TextBox object using the _____ property.

5. The _____ object allows the user to select one date from a calendar of dates and times.

6. To include an image in a table, you can place a picture in a(n) _____ object.

7. The _____ is a customizable task pane that appears in the office application window.

8. To include any toolbox object in a Document Actions task pane, use the _____ object, which acts as a container for Visual Basic objects.

9. You can test your application by clicking the _____ button on the Standard toolbar.

10. Procedures in the _____ class provide you with most of the standard procedures you can use for required computations.

Visual Basic Programming
Enrichment Chapter Review

T   F   1. When working with VSTO, you cannot use the Visual Studio Toolbox to add standard objects such as Label and Button objects.

T   F   2. If you save a document with the file extension .dot instead of the standard .doc and store the document in the proper place, Word recognizes it as a template.

T   F   3. Most of the objects you will use on a daily basis in VSTO are listed in alphabetical order in the category named Common Controls.

T   F   4. You can drag objects in the Common Controls category from the Visual Studio Toolbox directly into Word.

T   F   5. The GroupBox object is not available in VSTO.

T   F   6. The CalendarPicker object allows the user to select one date from a calendar of dates and times.

T   F   7. To enter text in a table, you can type directly in its cells, advancing from one cell to the next by using the TAB key.

T   F   8. One event is included by default when the code window of VSTO is first opened--the StartDocument event.

T   F   9. You can resize the Actions Pane Control, but it will still be the standard size on the right of the Office window when the application is executed.

T   F   10. The Math.RoundDown(x) method returns the integer to the left of the number on the number line.