```vb
Public Class Form1
    Private strClerk As String

    Dim dblTotal As Double
    Dim strReceiptAll As String
    Private intItemCount As Integer = 0

    Private Sub Form1_Load(sender As Object, e As EventArgs) Handles MyBase.Load 'line 2
        Const strPROMPT As String = "Name of Ice Cream Scooper: "
        Const STRTITLE As String = "Name Entry"

        strClerk = InputBox(strPROMPT, STRTITLE)
    End Sub

    'Private Sub txtConeScoops_KeyPress(sender As Object, e As KeyPressEventArgs) Handles txtConeScoops.KeyPress
    'If (e.KeyChars, "0" OrElse e.KeyChar > "9") AndAlso
    'e.KeyChars <> ControlChars.Back Then
    'e.Handled = True
    'End If
    'End Sub

    Private Sub txtConeScoops_TextChanged(sender As Object, e As EventArgs) Handles txtConeScoops.TextChanged
        cboConeFlavors.Focus()
    End Sub

    Private Sub btnAddItem_Click(sender As Object, e As EventArgs) Handles btnAddItem.Click
        Dim intScoops As Integer
        Dim dblConeCost As Double
        Dim dblScoopCost As Double
        Dim dblIceCreamTotal As Double

        Integer.TryParse(txtConeScoops.Text, intScoops)

        dblConeCost = 1.5
        dblScoopCost = 0.5
        dblIceCreamTotal = dblConeCost + (intScoops * dblScoopCost)

        Dim dblExtras As Double
        Dim strIfWaffle As String

        If chkWaffle.Checked Then
            dblExtras = 1.0
            strIfWaffle = " Waffle "
        Else
            dblExtras = 0
            strIfWaffle = ""
        End If

        Dim dblItemTotal As Double
        Dim strContainer As String

        If radCup.Checked Then
            dblExtras = dblExtras + 0.25
            strContainer = "Cup "
        Else
            dblExtras = dblExtras + 0
            strContainer = "Cone "
        End If

        dblItemTotal = dblIceCreamTotal + dblExtras
        lblTotal.Text = dblItemTotal.ToString("c2")

        'cboConeFlavors.Item.Add ("Mint")
        'cboConeFlavors.SelectedItem = "Vanilla" or SelectedIndex or Text
        Dim strFlavor As String
        strFlavor = ""
        Select Case cboConeFlavors.SelectedItem
            Case "Vanilla"
                strFlavor = "Vanilla"
            Case "Chocolate"
                strFlavor = "Chocolate"
            Case "Strawberry"
                strFlavor = "Strawberry"
            Case Else
                strFlavor = "Flavor of the Day"
        End Select

        Dim strSingleItem As String
        Dim ranLuckyNumber As New Random
        Dim intLuckyNumber As Integer

        intLuckyNumber = ranLuckyNumber.Next(1, 25)
        intItemCount = intItemCount + 1

        strSingleItem = txtConeScoops.Text & " Scoops of " & strFlavor.ToString & " Ice Cream in a " & strIfWaffle & strContainer
        dblTotal = dblTotal + dblItemTotal
        strReceiptAll = strReceiptAll & ControlChars.NewLine & strSingleItem

        lblTotal.Text = dblTotal.ToString("C2")
        lblReceipt.Text = strClerk.ToUpper & ControlChars.NewLine & strReceiptAll & ControlChars.NewLine & ControlChars.NewLine & "Total Items: " & intItemCount & ControlChars.NewLine & "Your Lucky number is: " & intLuckyNumber 'line 2

        txtConeScoops.Text = ""
        txtConeScoops.Focus()
        radCone.Checked = True
        chkWaffle.Checked = False
    End Sub

    Private Sub ClearLabels(sender As Object, e As EventArgs) Handles btnNewOrder.Click
        txtConeScoops.Text = ""
        txtConeScoops.Focus()
        radCone.Checked = True
        chkWaffle.Checked = False
        dblTotal = 0
        strReceiptAll = ""
        lblReceipt.Text = ""
        lblTotal.Text = ""
        intItemCount = 0
    End Sub

    Private Sub Exit_Click(sender As Object, e As EventArgs) Handles btnExit.Click
        Me.Close()
    End Sub

    Private Sub FrmMain_FormClosing(sender As Object, e As FormClosingEventArgs) Handles Me.FormClosing
        'varify you want to close
        Dim dlgButton As DialogResult
        dlgButton = MessageBox.Show("Do you want to Exit?", "Ice Cream", MessageBoxButtons.YesNo, MessageBoxIcon.Exclamation)
        If dlgButton = DialogResult.No Then
            e.Cancel = True
        End If
        'For intMunutes As Integer = 0 To 2
        'lblMinutes.Text = intMinutes.ToString
        'For intSecondsA As Integer 0 To 5
        'lblseconds.Text = intSecondsA.ToString
        'Next intSeconds
        'Next intMinutes
        'Me.Refresh()
        'System.Threading.Thread.Sleep(500)
    End Sub
End Class
```

Class: The variable can be used by all procedures in a form
Procedure The variable can be used within a procedure (Note: Most will be of this type in this class)
Block: The variable can be used within a specific code block

Precedence
^ exponent
- negation
*, /
\ int div
Mod
+, -
&
=, >, >=
<, <=, <>
Not
AndAlso, And
OrElse, Or
Xor
——
Arithmetic
Concatenation
Comparison
logical

- When using a timer control, the event named **tick** will determine when the code is executed
- The keyword **handles** is used to associate a procedure with an event.
- Comparison operators also called relational operators
- **Posttest loop** (aka bottom driven loop) Always runs.
- **Pretest loop** (aka top driven loop) — a loop whose condition is evaluated before the instructions in its loop body are processed—**For Next:** Counter C Loop
- To leave a Do...Loop structure earlier than its full completion, you must execute an **Exit Do** statement
- You can **stop** an **endless** loop by clicking Debug on the menu bar, and then clicking Stop Debugging
- The number of choices the user can select from a list box is controlled by the list box's SelectionMode ppty
- Procedure – Refers to a block of program code that performs a specific task. Two types of Sub procedures in VB include the following: **Event procedure**: A procedure associated with a specific object and event **Independent Sub procedure**: Independent of any object and event Processed only when called (invoked) by a Call statement
- Passing Variables by Reference Provides the address or memory location of the variable to the procedure The receiving procedure can thus access the variable Reason to pass ByRef = Procedure needs to change the variable's contents Pass by reference using the keyword ByRef before the parameter

1. Which of the following rounds the contents of the dblNum variable to two decimal places? Math.Round (dblNum, 2)Which property is used to specify a combo box's style? DropDownStyle
2. Which of the following is false? A Sub procedure can accept only one item of data passed to it.
3. The items listed in the Call statement are referred to as arguments
4. Each memory location listed in the parameterList in the procedure header is referred to as a parameter (ByRef or ByVal)
5. Which of the following statements invokes the GetArea Sub procedure, passing it two variables *by value*? Call GetArea(dblLength, dblWidth)
6. Which of the following is a valid header for a procedure that receives an integer followed by a number with a decimal place? Private Sub GetFee(ByVal intBase As Integer, ByVal decRate As Decimal)
7. Which of the following is a valid header for a procedure that is passed

the number 15? Private Function GetTax(ByVal intRate As Integer) As Decimal and Private Sub CalcTax (ByVal intRate As Integer)
8. If the statement Call CalcNet (decNetPay) passes the variable's address, the variable is said to be passed *by reference*
9. Which of the following is false? To pass a variable *by reference* in Visual Basic, you include the ByRef keyword before the variable's name in the Call statement.

1. A Sub procedure named GetEndingInventory is passed four Integer variables named intBegin, intSales, intPurchases, and intEnding. The procedure should calculate the ending inventory using the beginning inventory, sales, and purchase amounts passed to the procedure. The result should be stored in the intEndingvariable. Which of the following procedure headers is correct? Private Sub GetEndingInventory(ByVal intB As Integer, ByVal intS As Integer, ByVal intP As Integer, ByRef intFinal As Integer)
2. Which of the following statements should you use to call the GetEndingInventory procedure described in Review Question 14? Call GetEndingInventory(intBegin, intSales, intPurchases, intEnding)
3. The memory locations listed in the parameterList in a procedure header have procedure scope and are removed from the computer's internal memory when the procedure ends. T
4. Which of the following statements invokes the GetDiscount function, passing it the contents of two Decimal variables named decSales and decRate? The statement should assign the function's return value to the decDiscount variable. decDiscount = GetDiscount(decSales, decRate)

1. A procedure allows the user to enter one or more values. The first input instruction will get the first value only and is referred to as the priming read.
2. What will the following code display in the lblAsterisks control? *** / ***
3. What will the following code display in the lblSum control? 30
4. Which of the following statements pauses program execution for one second? System.Threading.Thread.Sleep(1000)

1. Which of the following methods is used to add items to a list box? Add
2. The items in a list box belong to

which collection? Items
3. Which of the following properties stores the index of the item selected in a list box? selectIndex
4. Which of the following statements selects the fourth item in the lstNames control? lstNames.SelectedIndex = 3
5. Which event occurs when the user selects a different item in a list box? SelectedValueChanged

1. The instructions in a loop might not be processed at all, whereas the instructions in a loop are always processed at least once. Pretest, posttest
2. How many times will the MessageBox.Show method in the following code be processed? zero
3. How many times will the MessageBox.Show method in the following code be processed? one
4. How many times will the MessageBox.Show method in the following code be processed? four
5. The computer will stop processing the loop in Review Question 6 when the intCount variable contains the number 14
6. Which of the following statements is equivalent to the statement dblTotal = dblTotal + dblScore? dblTotal += dblScore
7. Which of the following statements is equivalent to the statement dblTotal = dblTotal + dblScore? For intX As Integer = 10 To 99
8. The loop controlled by the correct For clause from Review Question 13 will end when the intX variable contains the number 100

1. If the txtPrice control contains the value 75, what value will the Decimal.TryParse(txtPrice.Text, decPrice) method return? T
2. Which of the following statements will hide the picCar control? picCar.Visible = False
3. Which of the following statements declares an object to represent the pseudo-random number generator in a procedure? Dim randGen As New Random
4. Which of the following statements generates a random integer from 1 to 25, inclusive? intNum = randGen.Next(1, 26)
5. Which of the following statements generates a random integer from 1 to 25, inclusive? F

1. What is the minimum number of radio buttons in a group? Two
2. If a check box is not selected, what value is contained in its Checked property? F
3. Which capitalization should be used

for the text appearing in check boxes and radio buttons? Sentence cap

4. It is customary in Windows applications to designate a default check box. F
5. A form contains six radio buttons. Three of the radio buttons are located in a group box. How many of the radio buttons on the form can be selected at the same time?
6. A form contains six check boxes. Three of the check boxes are located in a group box. How many of the check boxes on the form can be selected at the same time? Six
7. If a radio button is selected, its property contains the Boolean value True. Checked
8. Which of the following If clauses will evaluate to True when the Bonus check box is selected? If chkBonuss.Checked Then
9. Which of the following events occurs when a check box is clicked? CheckedChanged
10. If the blnSenior variable contains the Boolean value False, then the Not blnSenior condition will evaluate to True

1. When entered in the appropriate event procedure, which of the following statements cancels the key pressed by the user? e.Handled = True
2. When a user tabs to a text box, the text box's event occurs. Enter
3. The statement txtHours.Focus() invokes the txtHours Enter event.

1. What is the TabIndex value of the first control added to a group box whose TabIndex value is 3? 3.0
2. If the user clicks the Yes button in a message box, the message box returns the number 6, which is equivalent to which value? DialogResult.Yes

1. An If...Then...Else statement in the btnCalc_Click procedure declares a variable in its false path. Where can the variable be used? only the false path in the If...Then...Else statement
2. Which of the following compound conditions can be used to determine whether the value in intQuantity < 0 OrElse intQuantity > 500 the intQuantity variable is *outside* the range of 0 through 500?
3. Which of the following If clauses should you use to compare the string contained in the txtId control with the state abbreviation CA? If txtId.Text.ToUpper = "CA" Then

1. The expression 6 > 12 OrElse 4 < 5 evaluates to True
2. The expression 6 + 3 > 7 AndAlso 11

> 2 * 5 evaluates to True
3. The expression 8 >= 4 + 6 OrElse 5 > 6 AndAlso 4 < 7 evaluates to False
4. The expression 7 + 3 * 2 > 5 * 3 AndAlso True evaluates to False
5. The expression 5 * 4 > 6 ˆ 2 evaluates to False
6. The expression 5 * 4 > 6 ˆ 2 AndAlso True OrElse False evaluates to False
7.
Cancel propertya property of the e parameter in the form's FormClosing event procedure; when set to True, it prevents the form from closing

FormClosing eventoccurs when a form is about to be closed, which can happen as a result of the computer processing the Me.Close() statement or the user clicking the Close button on the form's title bar

Math.Round functionrounds a number to a specific number of decimal places

Call statementthe Visual Basic statement used to invoke (call) an independent Sub procedure

Independent Sub procedurea procedure that is independent of any object and event; the procedure is processed only when called (invoked) from code

Return statementthe Visual Basic statement that returns a function's value to the statement that invoked the function

Passing by referencerefers to the process of passing a variable's address to a procedure so that the value in the variable can be changed

Priming readthe input instruction that appears above the loop that it controls; used to get the first input item from the user

1. Which of the following events occurs when a change is made to the contents of a text box? TextChanged
2. A variable is a procedure-level variable that retains its value after the procedure in which it is declared ends. satic
3. Which of the following clauses associates a procedure with the TextChanged event of the txtMid and txtFinal controls? Handles txtMid.TextChanged, txtFinal.TextChanged
4. Which of the following statements declares a procedure-level variable that is removed from the computer's memory when the procedure ends? Dim intCounter As Integer
5. Which of the following statements declares a procedure-level variable

that retains its value after the procedure in which it is declared ends? Static intCounter as Integer

1. The strWord1 and strWord2 variables contain the strings "Input" and "Box", respectively. Which of the following will display the string "InputBox" (one word) in the lblWord control? lblWord.Text = strWord1 & strWord2

MessageBox.Show(text, caption, buttons, icon[, defaultButton])
MessageBox.Show(text, caption, buttons, icon[, defaultButton])

Assigning a Value to a Prop during Run Time: object. Property = expression
txtCity.Text = "Pasadena" 'example

Convert Class Method 'data type
Convert.Method(Value)
Decorate = Convert.ToDecimal(0.25)

Select All Method
Textbox.SelectAll()
txtScoops.SelectAll()

Comparing Boolean Values
If blnIsInsured Then
If Not blnIsInsured Then
If chkWaffle.Checked Then

Generating Random Numbers
Dim randomObjectName As New Random
Random ObjectName.Next(min,max)