1. Let’s review the terminology of procedures and functions by completing the following fill-in-the-blank questions:

a) A(n) __________________________ is a named block of code that performs a specific task and does not return a value.

b) A(n) __________________________ is a named block of code that executes and returns a value.

c) You return a value from a function with the __________________________ statement.

d) Values passed to a procedure or function are called ____________________________.

e) A(n) __________________________ is a special variable that receives an argument passed to a procedure or function.

f) When an argument is passed by __________________ a copy of the argument is assigned to the parameter variable.

g) When an argument is passed by __________________ the procedure has access to the original argument.

2. An application contains the following procedure:

   Sub Display(ByVal intArg1 As Integer, ByRef strArg2 As String, ByRef sngArg3 As Single)
      intArg1 = intArg1 + 1
      strArg2 = strArg2 & “ Fienup”
      sngArg3 = sngArg3 + 1.5
   End Sub

   a) Write a statement that calls the procedure and passes it the following variables:
   Dim strName As String = “Mark”
   Dim intAge As Integer = 13
   Dim sngGPA As Single = 2.09

   b) After returning from the procedure call from part (a), what would be the value of each of the following variables:
   strName:
   intAge:
   sngGPA:
3. The following statement calls a function named Half that returns a Decimal, which is half of the argument.
   \[
   \text{decResult} = \text{Half}(\text{decValue})
   \]
   Write the function Half.

4. Recall Tutorial 4-10 (Health Club Membership Fee Calculator) in-class exercise from chapter 4 (pp. 254-258). Much of the code was crammed into the btnCalculate_Click event procedure. Using procedures and functions we can modularize this code to make it more readable, maintainable, etc.... Determine what procedures and functions you would use.

```vbnet
Public Class Form1
    ' Health Club Membership Fee Calculator.
    ' This application calculates the monthly and total membership fees for the Bay City Health and Fitness Club. The base monthly fees are:
    
    ' Standard adult membership: $40/month
    ' Child (12 and under): $20/month
    ' Student: $25/month
    ' Senior citizen (65 and over): $30/month
    
    ' The club offers the following radional services, which increase the base monthly fee:
    
    ' Yoga lessons: Add $10 to the monthly fee
    ' Karate lessons: Add $30 to the monthly fee
    ' Personal trainer: Add $50 to the monthly fee
    
    ' Discounts are available, depending on the length of membership. Here is a list of discounts:
    
    ' 1 - 3 months: No discount
    ' 4 - 6 months: 5% discount
    ' 7 - 9 months: 8% discount
    ' 10 or more months: 10% discount
    
    ' The following class-level constants are used to calculate discounts.
    Const decDiscount4to6 As Decimal = 0.05D ' 4 to 6 months
    Const decDiscount7to9 As Decimal = 0.08D ' 7 to 9 months
    Const decDiscount10orMore As Decimal = 0.1D ' 10 or more mo.
```
Private Sub btnCalculate_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnCalculate.Click
' This method calculates and displays the membership fees.
' Declare local variables.
Dim decBaseFee As Decimal ' Base Monthly Fee
Dim decDiscount As Decimal ' Discount
Dim decTotalFee As Decimal ' Total Membership Fee
Dim intMonths As Integer ' Number of months

' Check the number of months, and exit if it contains invalid data.
If Not Integer.TryParse(txtMonths.Text, intMonths) Then
    MessageBox.Show("Months must be a valid integer", "Input Error")
    Return
End If

' Check the month range: must be 1-24.
If (intMonths < 1) Or (intMonths > 24) Then
    MessageBox.Show("Enter a value in the range of 1 - 24 for months.", "Input Error")
    Return
End If

' If we reach this point, we assume the input data is valid.
' Calculate the base monthly fee.
If radAdult.Checked = True Then
decBaseFee = 40
ElseIf radChild.Checked = True Then
decBaseFee = 20
ElseIf radStudent.Checked = True Then
decBaseFee = 25
ElseIf radSenior.Checked = True Then
decBaseFee = 30
End If

' Look for additional services.
If chkYoga.Checked = True Then
decBaseFee += 10
End If
If chkKarate.Checked = True Then
decBaseFee += 30
End If
If chkTrainer.Checked = True Then
decBaseFee += 50
End If

' Determine the discount, based on membership months.
Select Case intMonths
    Case Is <= 3
decDiscount = 0
    Case 4 To 6
decDiscount = decBaseFee * decDiscount4to6
    Case 7 To 9
decDiscount = decBaseFee * decDiscount7to9
    Case Is >= 10
decDiscount = decBaseFee * decDiscount10orMore
End Select

' Adjust for discounts, calculate total fee.
decBaseFee -= decDiscount
decTotalFee = decBaseFee * intMonths

' Display the fees.
lblMonthlyFee.Text = decBaseFee.ToString("c")
lblTotalFee.Text = decTotalFee.ToString("c")
End Sub