Functions

Problem 1. Given the rational function

\[ f(x) = \frac{8x}{3x^2 + 5x + 2} \]

write a Visual Basic program that computes the values of \( f(x) \) when \( x \) varies between –5 and 5 with an increment of 0.5. Your program should use a “function” subprocedure to compute \( f(x) \). Display \( x \) and the corresponding \( f(x) \) values in a table within a picture box or a list box. Be sure to include screenshots of your VB code and your program output in your solution.

Problem 2. Text, page 213, Sec. 5.3, Problem 2

You can park about 500 cars.

Problem 3. Text, page 214, Sec. 5.3, Problem 4

3

Problem 4. Text, page 214, Sec. 5.3, Problem 8

15
Problem 5. Text, page 217, Sec. 5.3, Problem 16

```
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
    Dim age, RHR, MHR, THR As Double
    age = CDbl(TextBox1.Text)
    RHR = CDbl(TextBox2.Text)
    MHR = 220 - age
    THR = (MHR - RHR) * 0.6 + RHR
    ListBox1.Items.Add("Training Heart Rate = " & THR)
End Sub
```

Problem 6. Text, page 218, Sec. 5.3, Problem 20

```
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
    Dim New_Bal, Prev_Bal, Payment As Double
    Payment = CDbl(TextBox1.Text)
    For i As Integer = 1 To 4
        New_Bal = (1.005 * Prev_Bal) + Payment
        ListBox1.Items.Add("Month " & i & vbTab & FormatCurrency(New_Bal, 2))
        Prev_Bal = New_Bal
    Next
End Sub
```

Loops

Problem 7. Text, page 244, Sec. 6.1, Problem 2

```
0 1000
1 1100
2
```
Problem 8. Text, page 246, Sec. 6.1, Problem 16

While balance < 100

Problem 9. Text, page 249, Sec. 6.1, Problem 36

```vbscript
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
    Dim amt, r, total As Double
    Dim i As Integer
    amt = CDbl(TextBox1.Text)
    r = CDbl(TextBox2.Text)
    total = amt
    i = 0
    Do Until total > (2 * amt)
        total = (1 + r) * total
        i = i + 1
    Loop
    TextBox3.Text = i
    total = amt
    i = 0
    Do Until total > 1000000.0
        total = (1 + r) * total
        i = i + 1
    Loop
    TextBox4.Text = i
End Sub
```

Problem 10. Text, page 249, Sec. 6.1, Problem 39

```vbscript
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
    Dim n, m, T As Integer
    m = CDbl(TextBox1.Text)
    n = CDbl(TextBox2.Text)
    Do While n <> 0
        T = m
        n = n Mod n
        m = T
    Loop
    ListBox1.Items.Add(“M = “ & m)
End Sub
```