

Exam B: Solution

Question 1:

Function LHSB(n) 8

$k = 1$

Do Until $k = n + 1$

$LHSB = LHSB + 5^k$

$k = k + 1$

Loop

End Function

Function RHSB(n) 5

$RHSB = 5 * (5^n - 1) / 4$

End Function

The values of all three functions for $n = 10, 13$ are 4

$$LHSB(10) = RHSB(10) = \mathbf{12207030}$$

and

$$LHSB(13) = RHSB(13) = \mathbf{1525878905}$$

The code for the macro would be simply:

Sub RHSB2() 8

$n = \text{Range}("B1").\text{Value}$

$\text{Range}("C3").\text{Value} = 5 * (5^n - 1) / 4$

End Sub

Question 2:

$a = 24.8909$ and $b = -275.0182$. 9
 $r^2 = 0.9340$. 6
 $y = -0.0021x^6 + 0.1787x^5 - 6.3758x^4 + 121.15x^3 - 1289.9x^2 + 7282x - 17010$ and $r^2 = 0.9999$. 10

Question 3:

```
Sub TraceB() 1
  Dim B As Variant 2
  Dim B(1 To 3, 1 To 3) 3
  B = Range("A1:C3").Value 4
  i=1 1
  Do While i < 5 4
    TrB = TrB + A(i,i) 4
    i=i+1 1
  Loop 1
  ret=MsgBox("The trace of B is:" & TrB, , "Programming Part II 4
Exam")
End Sub
```

Question 4:

Sub login()	1
pr = " Please press OK if you remember your password. Otherwise, press Cancel"	1
ti = "City University London"	1
111:	1
ret = MsgBox(prompt:=pr, Buttons:=1, Title:=ti)	3
If ret = vbCancel Then	1
ret = MsgBox("Please contact computer services!", 16, ti)	3
Else	1
ret = InputBox("Enter your password below:",ti)	3
If ret = "city" Then	2
ret = MsgBox("Welcome to City Space!", 64, ti)	3
Else	1
GoTo 111	2
End If	1
End If	1
End Sub	1

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