

SOLUTIONS TO TEST A, SPRING 2011

1. (a)

```
Function suma1(n)
k = 1
For k = 1 To n
suma1 = suma1 + ((-1) ^ k) * (k ^ 2 + 1)
Next k
End Function
```

[10]

(b)

```
Sub suma2()
n = InputBox("enter here the value of n", "sum")
k = 1
A = 0
For k = 1 To n
A = A + ((-1) ^ k) * (k ^ 2 + 1)
Next k
Range("A1").Value = A
End Sub
```

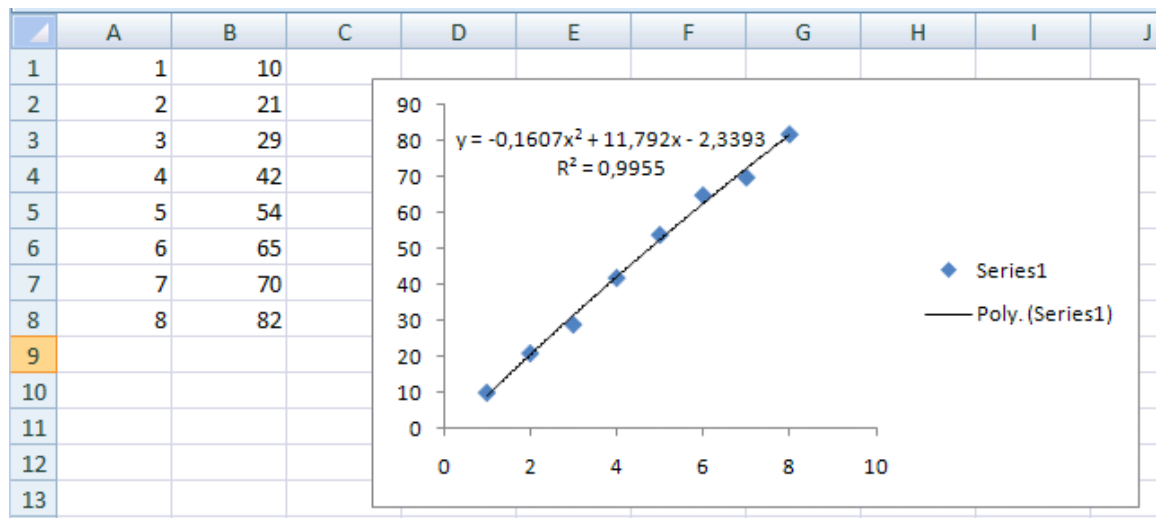
[10]

(c)

```
Function suma3(n As Integer) As Single
suma3 = (1 + ((-1) ^ n) * (1 + n + n ^ 2)) / 2
End Function
```

[5]

2. (a)



[10]

(b)

```
Sub plot()  
,  
' plot Macro  
' scatter plot + fitting of points  
,  
' Keyboard Shortcut: Ctrl+s  
,  
  
    Range("A1:B8").Select  
    ActiveSheet.Shapes.AddChart.Select  
    ActiveChart.SetSourceData Source:=Range("'Sheet1'!$A$1:$B$8")  
    ActiveChart.ChartType = xlXYScatter  
    ActiveChart.SeriesCollection(1).Select  
    ActiveChart.SeriesCollection(1).Trendlines.Add  
    ActiveSheet.ChartObjects("Chart 1").Activate  
    ActiveChart.SeriesCollection(1).Trendlines(1).Select  
    With Selection  
        .Type = xlPolynomial  
        .Order = 2  
    End With  
    Selection.Intercept = 0  
    Selection.InterceptIsAuto = True  
    Selection.DisplayEquation = True  
    Selection.DisplayRSquared = True  
End Sub
```

[10]

(c) The slope is 10,34524 and the intercept is 0,071429

[5]

3.

```
Sub matrix()  
Dim A As Variant  
A = Range("A1:C3").Value  
k = 1  
s1 = 0  
s2 = 0  
s3 = 0  
Do While k < 4  
s1 = s1 + A(1, k)  
s2 = s2 + A(2, k)  
s3 = s3 + A(3, k)  
k = k + 1  
Loop  
If s1 > 0 And s2 > 0 And s3 > 0 Then  
ret1 = MsgBox("the matrix is positive definite", , "matrix")  
Else  
ret2 = MsgBox("the matrix is negative definite", , "matrix")  
End If  
End Sub
```

The points would be roughly distributed as follows: 2 points for correct definition of A, 10 points for the correct loop structure, 5 points for the correct if structure, 8 points for the correct MsgBoxes.

4.

```
Private Sub TB_Click()  
If TB.Value = True Then  
ret = MsgBox("toggle is true", 64, "toggle")  
Else  
TBox.Value = "toggle is false"  
End If  
End Sub
```

The rough distribution of points is: 9 points for correct if structure, 9 points for correct MsgBox, 7 points for correct use of TextBox.