

Exam B: Solution

Question 1: The three required codes are:

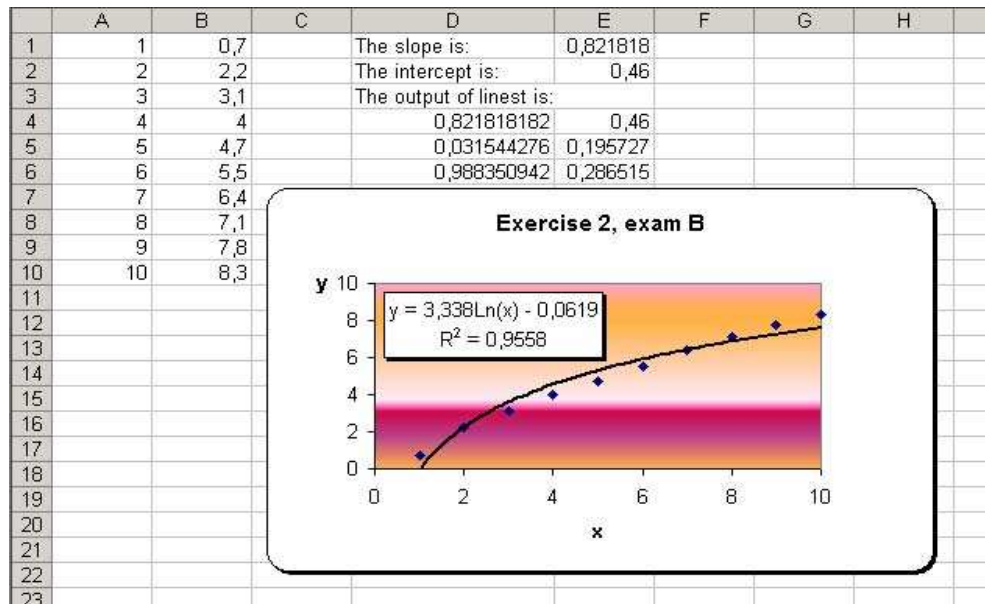
```

Function f(p)
f = 2 ^ (-p)
End Function
-----
Sub sumf()
n = Range("c1").Value
For p = 1 To n
a = a + f(p)
Next p
Range("c2").Value = a
End Sub
-----
Function poly(n)
p = 1
Do Until p = n + 1
poly = poly + p ^ 3 + 1
p = p + 1
Loop
End Function
    
```

For $n = 2$ the sum is 0.75 and for $n = 4$ it is 0,9375.

Marks: 10 points for i), 5 points for ii) and 10 points for iii)

Question 2: The answers are:



Marks: 8 points for i), 8 points for ii) and 9 points for iii)

Question 3: A possible code would be:

```
Sub vaproduct()  
Dim A, v As Variant  
A = Range("A1:B2").Value  
v = Range("A3:B3").Value  
Dim pro(1 To 1, 1 To 2)  
i = 1  
pro(1, 1) = 0  
pro(1, 2) = 0  
Do While i < 3  
pro(1, 1) = pro(1, 1) + A(i, 1) * v(1, i)  
pro(1, 2) = pro(1, 2) + A(i, 2) * v(1, i)  
i = i + 1  
Loop  
Range("D1").Value = "The product vector is:"  
Range("E1:F1").Value = pro  
End Sub
```

Marks: 8 points for correct variable definition, 9 points for correct loop structure, 8 points for correct display of the program's output.

Question 4: The code would be:

```
Sub diffcheck()  
1  
t = "difference sign-check"  
p1 = "Enter here a real number:"  
t1 = "First number"  
p2 = "Enter here another real number:"  
t2 = "Second number"  
p3 = "the difference is negative"  
p4 = "the difference vanishes"  
p5 = "the difference is positive"  
p6 = "this is not a number"  
n1 = InputBox(p1, t1)  
n2 = InputBox(p2, t2)  
If n1 - n2 < 0 Then  
ret = MsgBox(p3, 0, t)  
Range("c1").Value = n1 - n2  
ElseIf n1 - n2 = 0 Then  
ret = MsgBox(p4, 16, t)  
Range("c1").Value = n1 - n2  
ElseIf n1 - n2 > 0 Then  
ret = MsgBox(p5, 64, t)  
Range("c1").Value = n1 - n2  
Else  
ret = MsgBox(p6, 32, t)  
GoTo 1  
End If  
End Sub
```

Marks: 5 points for correct variable definition, 5 points for correct InputBox structure, 5 points for correct If structure, 10 points for correct MsgBox structure and WS display of $n1 - n2$.

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