

SOLUTIONS TO EXAM A

1) i) (7 points)

$$= \text{IF}(x \geq -1, \text{IF}(x \leq 1, \sin(x), \sin((x^2 + 1)/2)), \sin(x)/x).$$

$$f(1) = \sin(1) = 0.841471..., \quad f(-2) = \sin(2)/2 = 0.454649...$$

ii) (7 points)

Function g(x)

If $-1 \leq x$ and $x \leq 1$ Then

$g = \sin(x)$

ElseIf $x > 1$ Then

$g = \sin((x^2 + 1)/2)$

Else

$g = \sin(x)/x$

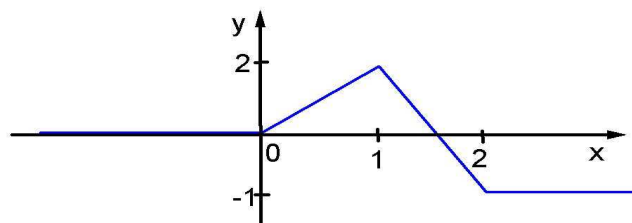
End If

End Function

$$g(2) = 0.598472..., \quad g(-1) = -0.841471...$$

iii) (11 points)

$$f(x) = \begin{cases} 0, & \text{for } x < 0 \\ 2x, & \text{for } 0 \leq x < 1 \\ 5-3x, & \text{for } 1 \leq x < 2 \\ -1, & \text{for } x \geq 2 \end{cases}$$



2)

= VLOOKUP (1, A1:D4, 2)	→	5
= VLOOKUP (1.8, A1:D4, 3)	→	6
= VLOOKUP (9, C1:D4, 2)	→	February
= HLOOKUP (1.8, A1:D4, 4)	→	4
= HLOOKUP (9, A2:D4, 3)	→	24
= HLOOKUP (9, A1:D3, 2)	→	8
= VLOOKUP (16, C1:D4, 2)	→	March
= VLOOKUP (8, B1:D4, 2)	→	8
= VLOOKUP (8, C1:D4, 2)	→	February
= HLOOKUP (3, A2:D4, 2)	→	3
= HLOOKUP (7.2, A2:D4, 3)	→	23
= HLOOKUP (5, A1:D4, 3)	→	9
= VLOOKUP (4, A1:D4, 4, FALSE)	→	April
= VLOOKUP (9, B1:D3, 2, FALSE)	→	11
= VLOOKUP (9, B2:D3, 3, FALSE)	→	March
= HLOOKUP ("January", B1:D4, 4, FALSE)	→	April
= HLOOKUP (8, A2:D4, 3, FALSE)	→	24
= HLOOKUP (2, A2:D3, 2, FALSE)	→	3

3)

Function whichday(x As Date) As String

y = weekday(x)

Select Case y

Case Is = 2: whichday = "Monday"

Case Is = 3: whichday = "Tuesday"

Case Is = 4: whichday = "Wednesday"

Case Is = 5: whichday = "Thursday"

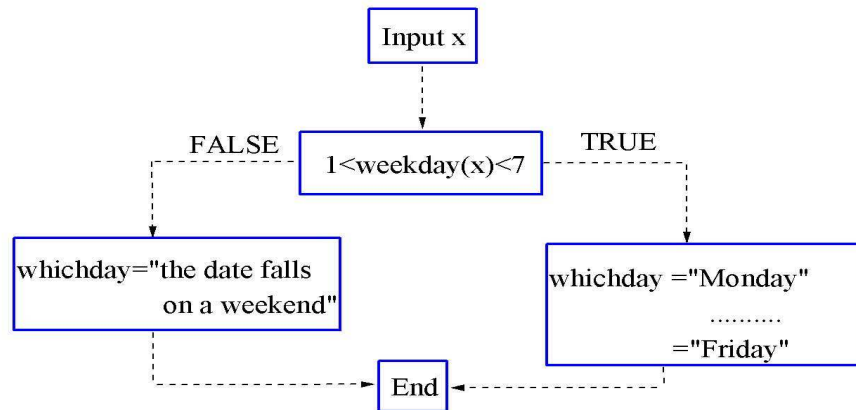
Case Is = 6: whichday = "Friday"

Case Else: whichday = "This date falls on a weekend"

End Select

End Function

whichday(20/11/1945) = "Tuesday"



4)

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Function avehours(x As String) As Single
avehours = (Application.WorksheetFunction.HLookup(x, [a1:f4], 2)
+ Application.WorksheetFunction.HLookup(x, [a1:f4], 3)
+ Application.WorksheetFunction.HLookup(x, [a1:f4], 4)) / 3
End Function

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Function class(x As String) As String
y = avehours(x)
If y < 42 Then
class = "not enough work"
ElseIf 42 <= y < 47 Then
class = "decent performance"
Else
class = "to be recommended for promotion"
End If
End Function

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avehours("Lopez") = 43.3333,

class ("Lopez")="decent performance"

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