

# Solutions Lab-Session 7

1) The solutions to parts i) and ii) are:

```
Function fmark(x As String) As Single
Dim y1, y2, y3 As Integer
y1 = Application.WorksheetFunction.VLookup(x, [a2:d6], 2, False)
y2 = Application.WorksheetFunction.VLookup(x, [a2:d6], 3, False)
y3 = Application.WorksheetFunction.VLookup(x, [a2:d6], 4, False)
fmark = ((y1 + y2) * 10 + y3 * 80) / 100
End Function
```

```
Function howgood(x As String) As String
Dim y As Single
y = fmark(x)
If y < 40 Then
howgood = "the student will have to re-sit the exam"
ElseIf y >= 40 And y <= 54 Then
howgood = "this is an average student"
ElseIf y > 54 And y < 74 Then
howgood = "this is a good student"
Else
howgood = "this is a very good student"
End If
End Function
```

For part iii) we have that:

=fmark("Lai") → 62,5

=howgood("Sanchez") → "this is a very good student"

2) The tables would look like this:

	A	B	C	D	E	F	G	H	I
1	BMI	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2
2	50	29,59	25,51	22,22	19,53	17,30	15,43	13,85	12,50
3	55	32,54	28,06	24,44	21,48	19,03	16,98	15,24	13,75
4	60	35,50	30,61	26,67	23,44	20,76	18,52	16,62	15,00
5	65	38,46	33,16	28,89	25,39	22,49	20,06	18,01	16,25
6	70	41,42	35,71	31,11	27,34	24,22	21,60	19,39	17,50
7	75	44,38	38,27	33,33	29,30	25,95	23,15	20,78	18,75
8	80	47,34	40,82	35,56	31,25	27,68	24,69	22,16	20,00
9	85	50,30	43,37	37,78	33,20	29,41	26,23	23,55	21,25
10	90	53,25	45,92	40,00	35,16	31,14	27,78	24,93	22,50
11	95	56,21	48,47	42,22	37,11	32,87	29,32	26,32	23,75
12	100	59,17	51,02	44,44	39,06	34,60	30,86	27,70	25,00

Where the entries in the table are obtained using the function bmi from lecture 8 and the autofill function.

Male	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2
50	overweight	overweight	normal weight	underweight	underweight	underweight	underweight	underweight
55	obese	overweight	normal weight	normal weight	underweight	underweight	underweight	underweight
60	obese	obese	overweight	normal weight	normal weight	underweight	underweight	underweight
65	obese	obese	overweight	overweight	normal weight	normal weight	underweight	underweight
70	extreme obese	obese	obese	overweight	normal weight	normal weight	underweight	underweight
75	extreme obese	obese	obese	overweight	overweight	normal weight	normal weight	underweight
80	extreme obese	extreme obese	obese	obese	overweight	normal weight	normal weight	normal weight
85	extreme obese	extreme obese	obese	obese	overweight	overweight	normal weight	normal weight
90	extreme obese	extreme obese	extreme obese	obese	obese	overweight	overweight	normal weight
95	extreme obese	extreme obese	extreme obese	obese	obese	overweight	overweight	normal weight
100	extreme obese	extreme obese	extreme obese	obese	obese	obese	overweight	overweight
Female	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2
50	obese	overweight	normal weight	normal weight	underweight	underweight	underweight	underweight
55	obese	overweight	overweight	normal weight	normal weight	underweight	underweight	underweight
60	obese	obese	overweight	normal weight	normal weight	underweight	underweight	underweight
65	obese	obese	overweight	overweight	normal weight	normal weight	underweight	underweight
70	extreme obese	obese	obese	overweight	overweight	normal weight	normal weight	underweight
75	extreme obese	obese	obese	obese	overweight	normal weight	normal weight	underweight
80	extreme obese	extreme obese	obese	obese	overweight	overweight	normal weight	normal weight
85	extreme obese	extreme obese	obese	obese	obese	overweight	normal weight	normal weight
90	extreme obese	extreme obese	extreme obese	obese	obese	overweight	overweight	normal weight
95	extreme obese	extreme obese	extreme obese	obese	obese	obese	overweight	normal weight
100	extreme obese	extreme obese	extreme obese	extreme obese	obese	obese	overweight	overweight

Where the entries on the table are obtained by using the functions male and female from lecture 8 and the autofill function.

One possible solution to question iii) is:

```

Function bmitable(we As Single, he As Single) As Single
    Dim x As Integer
    If he >= 1.3 Then x = 2
    If he >= 1.4 Then x = 3
    If he >= 1.5 Then x = 4
    If he >= 1.6 Then x = 5
    If he >= 1.7 Then x = 6
    If he >= 1.8 Then x = 7
    If he >= 1.9 Then x = 8
    If he >= 2 Then x = 9
    bmitable = WorksheetFunction.VLookup(we, [a2:i12], x)
End Function

```

Alternatively one could have an IF structure on the weight variable and an Hlookup function on the height!