# Solutions Lab-session 5

**1)** a) i)
```
Function bmiUK(weight As Single, height As Single) As Double
    bmiUK = Round(weight / (height) ^2 * 703, 1)
End Function
```

ii)
```
Function bmiUKI(weight As Single, height As Single) As Integer
    bmiUKI = weight / (height) ^2 * 703
End Function
```

b)
```
Function bmimean(bmin As Single, mf As String) As String
    If mf = "male" Then
    If (bmin < 20) Then
        bmimean = "underweight"
    ElseIf (bmin >= 20 And bmin < 25) Then
        bmimean = "normal weight"
    ElseIf (bmin >= 25 And bmin < 30) Then
        bmimean = "overweight"
    ElseIf (bmin >= 30 And bmin < 40) Then
        bmimean = "obese"
    Else
        bmimean = "extreme obese"
    End If
ElseIf mf = "female" Then
    If (bmin < 19) Then
        bmimean = "underweight"
    ElseIf (bmin >= 19 And bmin < 24) Then
        bmimean = "normal weight"
    ElseIf (bmin >= 24 And bmin < 29) Then
        bmimean = "overweight"
    ElseIf (bmin >= 29 And bmin < 39) Then
        bmimean = "obese"
    Else
        bmimean = "extreme obese"
    End If
Else
    bmimean = "Specify gender!"
End If
End Function
```

c) Table:

| | | | | | | |
|---|---|---|---|---|---|---|
| 7 | male | 0 | 20 | 25 | 30 | 40 |
| 8 | female | 0 | 19 | 24 | 29 | 39 |
| 9 | | underweight | normal weight | overweight | obese | extreme obese |

HLOOKUP table

```
Function bmitab(bmin, mf)
    If mf = "male" Then
        bmitab = WorksheetFunction.HLookup(bmin, [b7:f9], 3)
    ElseIf mf = "female" Then
        bmitab = WorksheetFunction.HLookup(bmin, [b8:f9], 2)
    Else
        bmitab = "Specify gender!"
    End If
End Function
```

d)
```
Function Idealweightp(height As Single, mf As String) As Double
    If mf = "male" Then
        Idealweightp = Round(22 * height ^2 / 703, 1)
    ElseIf mf = "female" Then
        Idealweightp = Round(21 * height ^2 / 703, 1)
    Else
        Idealweightp = "Specify gender!"
    End If
End Function
```

e) Table:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4 | | 60 | 62 | 64 | 66 | 68 | 70 | 72 | 74 | 76 |
| 5 | 110 | 21.5 | 20.1 | 18.9 | 17.8 | 16.7 | 15.8 | 14.9 | 14.1 | 13.4 |
| 6 | 120 | 23.4 | 21.9 | 20.6 | 19.4 | 18.2 | 17.2 | 16.3 | 15.4 | 14.6 |
| 7 | 130 | 25.4 | 23.8 | 22.3 | 21 | 19.8 | 18.7 | 17.6 | 16.7 | 15.8 |
| 8 | 140 | 27.3 | 25.6 | 24 | 22.6 | 21.3 | 20.1 | 19 | 18 | 17 |
| 9 | 150 | 29.3 | 27.4 | 25.7 | 24.2 | 22.8 | 21.5 | 20.3 | 19.3 | 18.3 |
| 10 | 160 | 31.2 | 29.3 | 27.5 | 25.8 | 24.3 | 23 | 21.7 | 20.5 | 19.5 |
| 11 | 170 | 33.2 | 31.1 | 29.2 | 27.4 | 25.8 | 24.4 | 23.1 | 21.8 | 20.7 |
| 12 | 180 | 35.2 | 32.9 | 30.9 | 29 | 27.4 | 25.8 | 24.4 | 23.1 | 21.9 |
| 13 | 190 | 37.1 | 34.7 | 32.6 | 30.7 | 28.9 | 27.3 | 25.8 | 24.4 | 23.1 |
| 14 | 200 | 39.1 | 36.6 | 34.3 | 32.3 | 30.4 | 28.7 | 27.1 | 25.7 | 24.3 |

body mass index from weight/height

```
Function bmitableH(weight As Single, height As Single) As Double
    Dim x As Integer
```

```
    If weight >= 110 Then x = 2
    If weight >= 120 Then x = 3
    If weight >= 130 Then x = 4
    If weight >= 140 Then x = 5
    If weight >= 150 Then x = 6
    If weight >= 160 Then x = 7
    If weight >= 170 Then x = 8
    If weight >= 180 Then x = 9
    If weight >= 190 Then x = 10
     bmitableH = WorksheetFunction.HLookup(height, [b4:j14], x)
End Function
```

f) Tables:

| male | 60 | 62 | 64 | 66 | 68 | 70 | 72 | 74 | 76 |
|---|---|---|---|---|---|---|---|---|---|
| 110 | normal weight | normal weight | underweight | underweight | underweight | underweight | underweight | underweight | underweight |
| 120 | normal weight | normal weight | normal weight | underweight | underweight | underweight | underweight | underweight | underweight |
| 130 | overweight | normal weight | normal weight | normal weight | underweight | underweight | underweight | underweight | underweight |
| 140 | overweight | overweight | normal weight | normal weight | normal weight | normal weight | underweight | underweight | underweight |
| 150 | overweight | overweight | overweight | normal weight | normal weight | normal weight | normal weight | underweight | underweight |
| 160 | obese | overweight | overweight | overweight | normal weight | normal weight | normal weight | normal weight | underweight |
| 170 | obese | obese | overweight | overweight | overweight | normal weight | normal weight | normal weight | normal weight |
| 180 | obese | obese | obese | overweight | overweight | overweight | normal weight | normal weight | normal weight |
| 190 | obese | obese | obese | obese | overweight | overweight | overweight | normal weight | normal weight |
| 200 | obese | obese | obese | obese | obese | overweight | overweight | overweight | normal weight |

body mass index interpretation (male)

| female | 60 | 62 | 64 | 66 | 68 | 70 | 72 | 74 | 76 |
|---|---|---|---|---|---|---|---|---|---|
| 110 | normal weight | normal weight | underweight | underweight | underweight | underweight | underweight | underweight | underweight |
| 120 | normal weight | normal weight | normal weight | normal weight | underweight | underweight | underweight | underweight | underweight |
| 130 | overweight | normal weight | normal weight | normal weight | normal weight | underweight | underweight | underweight | underweight |
| 140 | overweight | overweight | overweight | normal weight | normal weight | normal weight | normal weight | underweight | underweight |
| 150 | obese | overweight | overweight | overweight | normal weight | normal weight | normal weight | normal weight | underweight |
| 160 | obese | obese | overweight | overweight | overweight | normal weight | normal weight | normal weight | normal weight |
| 170 | obese | obese | obese | overweight | overweight | overweight | normal weight | normal weight | normal weight |
| 180 | obese | obese | obese | obese | overweight | overweight | overweight | normal weight | normal weight |
| 190 | obese | obese | obese | obese | overweight | overweight | overweight | overweight | normal weight |
| 200 | extreme obese | obese | obese | obese | obese | overweight | overweight | overweight | overweight |

female body mass index interpreation (female)

```
Function BTT(weight As Single, height As Single, mf As String) As String
    Dim x As Integer
    If height >= 60 Then x = 2
    If height >= 62 Then x = 3
    If height >= 64 Then x = 4
    If height >= 66 Then x = 5
    If height >= 68 Then x = 6
    If height >= 70 Then x = 7
    If height >= 72 Then x = 8
    If height >= 74 Then x = 9
```

```
    If height >= 76 Then x = 10
    If mf = "female" Then
        BTT = WorksheetFunction.VLookup(weight, [a30:j39], x)
    ElseIf mf = "male" Then
        BTT = WorksheetFunction.VLookup(weight, [a18:j27], x)
    Else
        BT = "Specify gender!"
    End If
End Function
```