

4)

The screenshot shows an R GUI with two windows: 'R Console' and 'Untitled - R Editor'.

R Console Output:

```
> age<-c(23,23,27,27,27,39,41,47,49,50,52,54,54,56,57,58,58,60,61)
> fat<-c(9.5,26.5,7.8,17.8,31.4,25.9,27.4,27.2,31.2,34.6,42.5,28.8,33.4,30.2,34.1,32.9,41.2,35.7)
> head(age)
[1] 23 23 27 27 27 39 41
> head(fat)
[1] 9.5 26.5 7.8 17.8 31.4 25.9
> min_max_norm<-function(age) { (age-min(age))/(max(age)-min(age)) }
> age_norm<-as.data.frame(lapply(age[0:1.0],min_max_norm))
> head(age_norm)
      1
1  NaN
> min_max_norm<-function(fat) { (fat-min(fat))/(max(fat)-min(fat)) }
> fat_norm<-as.data.frame(lapply(fat[0:1.0],min_max_norm))
> head(fat_norm)
      1
1  NaN
> m<-mean(age)
> s<-sd(age)
> age.z<-(age-m)/s
> mean(age.z)
[1] 1.373202e-16
> sd(age.z)
[1] 1
> n<-mean(fat)
> t<-sd(fat)
> fat.z<-(fat-n)/t
> mean(fat.z)
[1] -1.716262e-16
> sd(fat.z)
[1] 1
> decimascaling=(age/100)
> decimascaling
[1] 0.23 0.23 0.27 0.27 0.39 0.41 0.47 0.49 0.50 0.52 0.54 0.54 0.56 0.57 0.58 0.58 0.60 0.61
> decimascaling=(fat/100)
> decimascaling
[1] 0.095 0.265 0.078 0.178 0.314 0.259 0.274 0.272 0.312 0.346 0.425 0.288 0.334 0.302 0.341 0.329 0.412
[18] 0.357
>
```

Untitled - R Editor Code:

```
age<-c(23,23,27,27,27,39,41,47,49,50,52,54,54,56,57,58,58,60,61)
fat<-c(9.5,26.5,7.8,17.8,31.4,25.9,27.4,27.2,31.2,34.6,42.5,28.8,33.4,30.2,34.1,32.9,41.2,35.7)
head(age)
head(fat)
min_max_norm<-function(age) { (age-min(age))/(max(age)-min(age)) }
age_norm<-as.data.frame(lapply(age[0:1.0],min_max_norm))
head(age_norm)
min_max_norm<-function(fat) { (fat-min(fat))/(max(fat)-min(fat)) }
fat_norm<-as.data.frame(lapply(fat[0:1.0],min_max_norm))
head(fat_norm)
m<-mean(age)
s<-sd(age)
age.z<-(age-m)/s
mean(age.z)
sd(age.z)
n<-mean(fat)
t<-sd(fat)
fat.z<-(fat-n)/t
mean(fat.z)
sd(fat.z)
decimascaling=(age/100)
decimascaling
decimascaling=(fat/100)
decimascaling
```