PRACTICAL 4

R Programming

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Roll No: I081

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> #Question 1
> q1 = c(6,7,10,12,12,13)
> # Cannot be solved using R

> #Question 2
> me2 = 8
> var2 = 16
> sum6t = 6*8
> newme2 = sum6t/2
> print(newme2)
[1] 24
> xix = 16*6
> yiy = xix*9
> newvar2 = yiy/6
> print(newvar2)
[1] 144

> #Question 3
> sum20t = 20*10
> cme3 = sum20t-8
> cme3 = cme3/19
> print(cme3)
[1] 10.10526
> sumsq = 104*20
> cvar3 = (sumsq-64)/19
> cvar3 = cvar3 - 102.111
> print(cvar3)
[1] 3.994263
> std3 = sqrt(cvar3)
> print(std3)
[1] 1.998565
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> cme3i = 204/20
> print(cme3i)
[1] 10.2
> cvar3i = (sumsq-64+144)/20
> print(cvar3i)
[1] 108
> cvar3i = cvar3i-104.04
> print(cvar3i)
[1] 3.96
> std3i = sqrt(cvar3i)
> print(std3i)
[1] 1.989975

> #Question 4
> covM = 12*100/42
> covP = 15*100/32
> covC = 20*100/40.49
> print(covM)
[1] 28.57143
> print(covP)
[1] 46.875
> print(covC)
[1] 49.39491
> print('Hence we can say that Chemistry has least variation and Maths has most variati
on')
[1] "Hence we can say that Chemistry has least variation and Maths has most variation"

> #Question 5
> library(rlang)
> q5i = range(c(0,10))
> q5ii = range(c(10,20))
> q5iii = range(c(20,30))
> q5iv = range(c(30,40))
> q5v = range(c(40,50))
> ca5 = c(q5i, q5ii, q5iii, q5iv, q5v)
> print(ca5)
 [1]  0 10 10 20 20 30 30 40 40 50
> f5 <- c(14,23,27,21,15)
> ia5 = sum(f5)
> q5i = sum(q5i)/2
> q5ii = sum(q5ii)/2
> q5iii = sum(q5iii)/2
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> q5iv = sum(q5iv)/2
> q5v = sum(q5v)/2
> x5 = c(q5i, q5ii, q5iii, q5iv, q5v)
> print(x5)
[1]  5 15 25 35 45

> fx5 = x5*f5
> print(fx5)
[1]  70 345 675 735 675
> fx5 = sum(fx5)
> me5 = fx5/ia5
> print(me5)
[1] 25

> fxme5 = abs(x5-me5)
> fxme5 = fxme5*fxme5
> print(fxme5)
[1] 400 100   0 100 400
> ffxme5 = f5*fxme5
> ffxme5 = sum(ffxme5)
> print(ffxme5)
[1] 16000
> v5 = ffxme5/ia5
> std5 = sqrt(v5)
> print(std5)
[1] 12.64911

> z <- rep(x5,f5)
> hist(z,breaks = 3, xlim = c (0,50), ylim = c (0,30))
> #plot(x5, f5, type = 'l')
> #polygon(c(0,x5,50), c(0,f5,0), col = 'red')
```
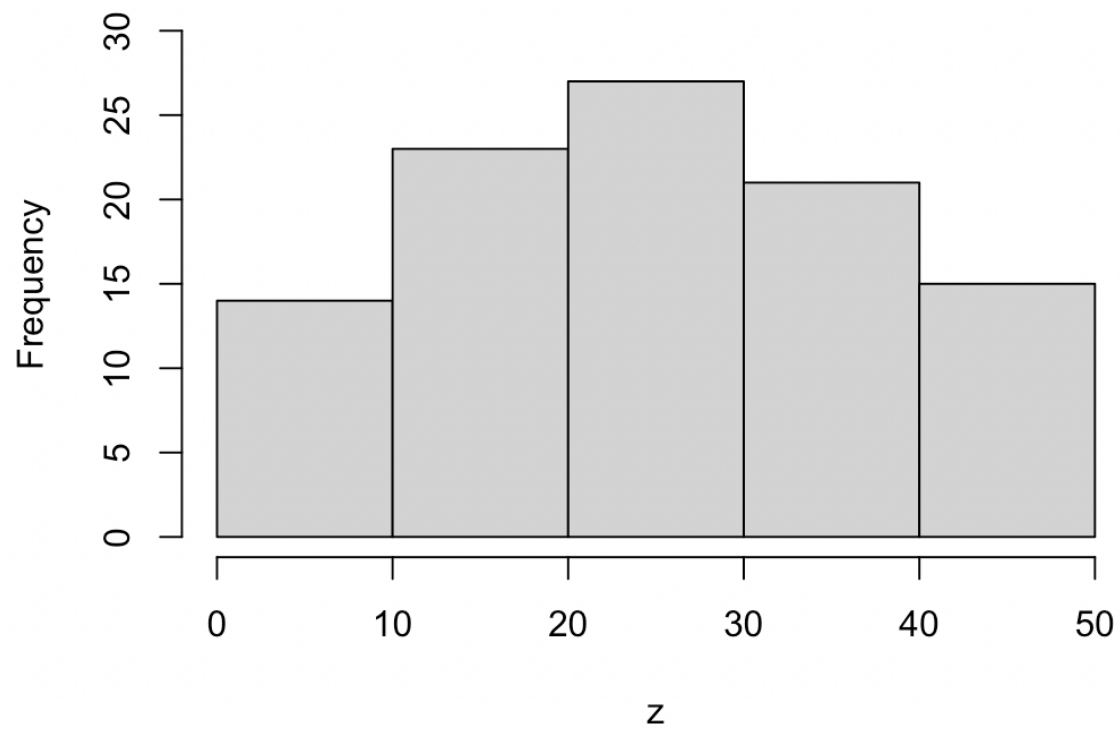
Histogram of z


```
> # Question 6
> speed = c(30,40,10,24)
> dist = c(25,50,1,24)
> time = c(0.833,1.25,0.1,1)
> tdist = sum(dist)
> ttime = sum(time)
> avgspeed = tdist/ttime
> print(avgspeed)
[1] 31.4169
```