PRACTICAL 2

R Programming

Aniruddh Kulkarni

Roll No: I081

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> # SM Practical 2
> # Question 1
> q1 <- c(6,7,10,12,13,4,8,12)
> me1 = sum(q1)/8
> print(me1)
[1] 9
> x1 = q1 - me1
> x1 = x1*x1
> x1 = sum(x1)
> print(x1)
[1] 74
> v1 = x1/8
> print(v1)
[1] 9.25


> #Question 2
> q2 <- c(6,10,14,18,24,28,30)
> f2 <- c(2,4,7,12,8,4,3)
> ia2 = sum(f2)
> qf2 = q2*f2
> qf2 = sum(qf2)
> me2 = qf2/ia2
> print(me2)
[1] 19
> x2 = q2 - me2
> x2 = x2*x2
> fx2 = f2*x2
> fx2 = sum(fx2)
> print(fx2)
[1] 1736
> v2 = fx2/ia2
> print(v2)
[1] 43.4
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> #Question 3
> q3 <- c(60,61,62,63,64,65,66,67,68)
> f3 <- c(2,1,12,29,25,12,10,4,5)
> ia3 = sum(f3)
> qf3 = q3*f3
> qf3 = sum(qf3)
> me3 = qf3/ia3
> print(me3)
[1] 64
> x3 = q3 - me3
> x3 = x3*x3
> fx3 = f3*x3
> fx3 = sum(fx3)
> print(fx3)
[1] 286
> v3 = fx3/ia3
> std3 = sqrt(v3)
> print(std3)
[1] 1.691153
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> # Question 4
> q4i = range(c(0,10))
> q4ii = range(c(10,20))
> q4iii = range(c(20,30))
> q4iv = range(c(30,40))
> q4v = range(c(40,50))
> ca4 = c(q4i,q4ii,q4iii,q4iv,q4v)
> print(ca4)
 [1]  0 10 10 20 20 30 30 40 40 50
> f4 <- c(5,8,15,16,6)
> ia4 = sum(f4)
> q4i = sum(q4i)/2
> q4ii = sum(q4ii)/2
> q4iii = sum(q4iii)/2
> q4iv = sum(q4iv)/2
> q4v = sum(q4v)/2
> x4 = c(q4i,q4ii,q4iii,q4iv,q4v)
> print(x4)
[1]  5 15 25 35 45
> fx4 = x4*f4
> print(fx4)
[1]  25 120 375 560 270
> fx4 = sum(fx4)
> me4 = fx4/ia4
> print(me4)
[1] 27
> fxme4 = abs(x4 - me4)
> fxme4 = fxme4*fxme4
> print(fxme4)
[1] 484 144   4  64 324
> ffxme4 = f4*fxme4
> ffxme4 = sum(ffxme4)
> print(ffxme4)
[1] 6600
> v4 = ffxme4/ia4
> print(v4)
[1] 132
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> # Question 5
> q5i = range(c(33,36))
> q5ii = range(c(37,40))
> q5iii = range(c(41,44))
> q5iv = range(c(45,48))
> q5v = range(c(49,52))
> ca5 = c(q5i,q5ii,q5iii,q5iv,q5v)
> print(ca5)
 [1] 33 36 37 40 41 44 45 48 49 52
> f5 <- c(15,17,21,22,25)
> ia5 = sum(f5)
> q5i = sum(q5i)/2
> q5ii = sum(q5ii)/2
> q5iii = sum(q5iii)/2
> q5iv = sum(q5iv)/2
> q5v = sum(q5v)/2
> x5 = c(q5i,q5ii,q5iii,q5iv,q5v)
> print(x5)
[1] 34.5 38.5 42.5 46.5 50.5
> fx5 = x5*f5
> print(fx5)
[1]  517.5  654.5  892.5 1023.0 1262.5
> fx5 = sum(fx5)
> me5 = fx5/ia5
> print(me5)
[1] 43.5
> fxme5 = abs(x5 - me5)
> fxme5 = fxme5*fxme5
> print(fxme5)
[1] 81 25  1  9 49
> ffxme5 = f5*fxme5
> ffxme5 = sum(ffxme5)
> print(ffxme5)
[1] 3084
> v5 = ffxme5/ia5
> std5 = sqrt(v5)
> print(std5)
[1] 5.553377
```