04-09-2018 **Assignment Number 6 1740256**

**Measures of Central Tendency**

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**Aim:**

1. The distribution of age of males at the time of marriage was as follows.

|  |  |
| --- | --- |
| **AGE** | **NUMBER** |
| 18-20 | 5 |
| 20-22 | 18 |
| 22-24 | 28 |
| 24-26 | 37 |
| 26-28 | 24 |
| 28-30 | 22 |

Find at the time of marriage –

1. The average age
2. The modal age
3. The median age

**Procedure:**

> age<-seq(18,20,2)

> age

[1] 18 20

> age<-seq(18,30,2)

> age

[1] 18 20 22 24 26 28 30

> age<-c(19,21,23,25,27,29)

> age

[1] 19 21 23 25 27 29

> f<-c(5,18,28,37,24,22)

> f

[1] 5 18 28 37 24 22

> mar.dis<-data.frame(age,f)

> mar.dis

age f

1 19 5

2 21 18

3 23 28

4 25 37

5 27 24

6 29 22

> pro<-age\*f

> pro

[1] 95 378 644 925 648 638

> mean<-sum(pro)/sum(f)

> mean

[1] 24.83582

> mode<-which(f==max(f))

> mode

[1] 4

> f

[1] 5 18 28 37 24 22

> fm<-f[mode]

> fm

[1] 37

> f1=f[mode-1]

> f2=f[mode+1]

> f1

[1] 28

> f2

[1] 24

> l

[1] 165

> l=NULL

> l

NULL

> cl<-cumsum(f)

> cl

[1] 5 23 51 88 112 134

> n=sum(f)

> n

[1] 134

> ml<-min(which(cl>=n/2))

> ml

[1] 4

> h=6

> h

[1] 6

> p=f[ml]

> p

[1] 37

> c=cl[ml-1]

> c

[1] 51

> l=mid[ml]-h/2

> l

[1] 159.5

> median=l+(((n/2)-c)/p)\*h

> median

[1] 162.0946

> mode=l+((fm-f1)/(2\*fm-f1-f2))\*h

> mode

[1] 161.9545

> l

[1] 159.5

> l

[1] 159.5

> l=age[ml]-h/2

> l

[1] 22

> mode=l+((fm-f1)/(2\*fm-f1-f2))\*h

> mode

[1] 24.45455

> ml

[1] 4

> h

[1] 6

> h<-2

> mode=l+((fm-f1)/(2\*fm-f1-f2))\*h

> mode

[1] 22.81818

> median=l+(((n/2)-c)/p)\*h

> median

[1] 22.86486

**Conclusions:**

The mean is: 24.83582

The median is: 22.8646

The mode is: 22.81818

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