Statistics

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19/12/2020

# Generate a random sample  
d=sample(x=1:25,size=50,replace=TRUE)  
d

## [1] 25 4 9 1 18 4 8 6 10 17 21 2 9 25 13 3 2 5 5 1 16 19 17 15 1  
## [26] 24 13 10 15 11 9 6 18 5 4 5 21 2 12 6 23 21 16 23 8 24 22 24 11 8

mean(d)

## [1] 11.94

# Weighted means  
grade=c(95,92,91,87)  
weights= c(1/2,1/4,1/8,1/8)  
mean(grade)

## [1] 91.25

weighted.mean(x=grade,w=weights)

## [1] 92.75

# Variance & SD  
var(d)

## [1] 59.24122

sd(x=d,na.rm=FALSE)

## [1] 7.696832

# Min & Max Functions  
min(d)

## [1] 1

max(d)

## [1] 25

median(d)

## [1] 10.5

quantile(d,probs=c(0.2,0.4,0.6,0.8))

## 20% 40% 60% 80%   
## 4.8 8.6 13.8 21.0

library("ggplot2")  
head(economics)

## # A tibble: 6 x 6  
## date pce pop psavert uempmed unemploy  
## <date> <dbl> <dbl> <dbl> <dbl> <dbl>  
## 1 1967-07-01 507. 198712 12.6 4.5 2944  
## 2 1967-08-01 510. 198911 12.6 4.7 2945  
## 3 1967-09-01 516. 199113 11.9 4.6 2958  
## 4 1967-10-01 512. 199311 12.9 4.9 3143  
## 5 1967-11-01 517. 199498 12.8 4.7 3066  
## 6 1967-12-01 525. 199657 11.8 4.8 3018

# Covariance  
cor(economics$pce,economics$psavert)

## [1] -0.7928546