Statistics

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

## [1] 2 23 9 13 25 1 20 10 24 1 1 4 14 21 17 18 25 13 19 12 17 17 5 1 13  
## [26] 10 12 21 21 17 7 8 12 8 19 24 4 22 8 6 6 8 9 7 17 1 5 13 7 22

mean(d)

## [1] 12.38

# 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] 54.7302

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

## [1] 7.397986

# Min & Max Functions  
min(d)

## [1] 1

max(d)

## [1] 25

median(d)

## [1] 12

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

## 20% 40% 60% 80%   
## 5.8 9.0 13.4 20.2

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