

```

moments<-function(x)
{
  l = length(x) # total no of observation
  print(l)
  s=sum(x)

  m<-round((s/l), 2) ## mean
  print(paste("mean is", m))

  m2<-round((sum((x-m)^2)/l),2)
  print(paste("second central central is", m2))

  m3<-round((sum((x-m)^3)/l ), 2)
  print(paste("third central central is", m3))

  m4<-round((sum((x-m)^4)/l ), 2)
  print(paste("fourth central central is", m4))

  beta1 <-round( ((m3)^2/(m2)^3),2)
  print(paste("Skewness is", beta1))

  beta2<-round( ((m4)/ (m2)^2),2)
  print(paste("Kurtosis is", beta2))

  gamma1<-round( (sqrt(beta1)) , 2)
  print(paste("Skewness is", gamma1))

  gamma2<-round((beta2-3),2)
  print(paste("Kurtosis is", gamma2))

}

cars
##      speed dist
## 1         4    2
## 2         4   10
## 3         7    4
## 4         7   22
## 5         8   16
## 6         9   10
## 7        10   18
## 8        10   26
## 9        10   34
## 10       11   17
## 11       11   28

```

```
## 12      12      14
## 13      12      20
## 14      12      24
## 15      12      28
## 16      13      26
## 17      13      34
## 18      13      34
## 19      13      46
## 20      14      26
## 21      14      36
## 22      14      60
## 23      14      80
## 24      15      20
## 25      15      26
## 26      15      54
## 27      16      32
## 28      16      40
## 29      17      32
## 30      17      40
## 31      17      50
## 32      18      42
## 33      18      56
## 34      18      76
## 35      18      84
## 36      19      36
## 37      19      46
## 38      19      68
## 39      20      32
## 40      20      48
## 41      20      52
## 42      20      56
## 43      20      64
## 44      22      66
## 45      23      54
## 46      24      70
## 47      24      92
## 48      24      93
## 49      24     120
## 50      25      85

moments(cars$speed)

## [1] 50
## [1] "mean is 15.4"
## [1] "second central central is 27.4"
## [1] "third central central is -16.34"
```

```
## [1] "fourth central central is 1818.98"  
## [1] "Skewness is 0.01"  
## [1] "Kurtosis is 2.42"  
## [1] "Skewness is 0.1"  
## [1] "Kurtosis is -0.58"
```

M1	15.4
M2	27.4
M3	-16.34