#Ryan Allison

#Assignment 2

**INPUT**

#Problem 1

a<-5:8

a

a[2]

a[4]

a[2]\*a[4]

b<-c(3,4)

a[b]

a[c(-2)]

a[-b]

#Problem 2

a<-1:9

dim(a)<-c(3,3)

matrix(a,3,3,byrow=TRUE)

a[2,2]

a[2,]

a[,3]

t(a)

a\*t(a)

t(a)\*a

det(a)

diag(a)

#Problem 3

SALARY<-c(23,23,25,27,25,24,24,31)

SALARY

barplot(SALARY)

mean(SALARY)

abline(h=mean(SALARY))

median(SALARY)

abline(h=median(SALARY), col='red')

stdev<-sd(SALARY)

abline(h=mean(SALARY)-2\*stdev, col='blue')

abline(h=mean(SALARY)+2\*stdev, col='blue')

#Problem 4

x<-rnorm(10000, mean=200, sd=15)

head(x)

mean(x)+2\*sd(x)

mean(x)-2\*sd(x)

hist(rnorm(10000, mean=200, sd=15), main="Normal")

mean(x)

abline(v=mean(x), col='red')

stdev<-sd(x)

stdev

abline(v=mean(x)-2\*stdev, col='blue')

abline(v=mean(x)+2\*stdev, col='green')

**OUTPUT**

**> #Ryan Allison**

**> #Assignment 2**

**>**

**> #Problem 1**

**> a<-5:8**

**> a**

**[1] 5 6 7 8**

**> a[2]**

**[1] 6**

**> a[4]**

**[1] 8**

**> a[2]\*a[4]**

**[1] 48**

**> b<-c(3,4)**

**> a[b]**

**[1] 7 8**

**> a[c(-2)]**

**[1] 5 7 8**

**> a[-b]**

**[1] 5 6**

**>**

**> #Problem 2**

**> a<-1:9**

**> dim(a)<-c(3,3)**

**> matrix(a,3,3,byrow=TRUE)**

**[,1] [,2] [,3]**

**[1,] 1 2 3**

**[2,] 4 5 6**

**[3,] 7 8 9**

**> a[2,2]**

**[1] 5**

**> a[2,]**

**[1] 2 5 8**

**> a[,3]**

**[1] 7 8 9**

**> t(a)**

**[,1] [,2] [,3]**

**[1,] 1 2 3**

**[2,] 4 5 6**

**[3,] 7 8 9**

**> a\*t(a)**

**[,1] [,2] [,3]**

**[1,] 1 8 21**

**[2,] 8 25 48**

**[3,] 21 48 81**

**> t(a)\*a**

**[,1] [,2] [,3]**

**[1,] 1 8 21**

**[2,] 8 25 48**

**[3,] 21 48 81**

**> det(a)**

**[1] 0**

**> diag(a)**

**[1] 1 5 9**

**>**

**> #Problem 3**

**> SALARY<-c(23,23,25,27,25,24,24,31)**

**> SALARY**

**[1] 23 23 25 27 25 24 24 31**

**> barplot(SALARY)**

**> mean(SALARY)**

**[1] 25.25**

**> abline(h=mean(SALARY))**

**> median(SALARY)**

**[1] 24.5**

**> abline(h=median(SALARY), col='red')**

**> stdev<-sd(SALARY)**

**> abline(h=mean(SALARY)-2\*stdev, col='blue')**

**> abline(h=mean(SALARY)+2\*stdev, col='blue')**

**>**

**> #Problem 4**

**> x<-rnorm(10000, mean=200, sd=15)**

**> head(x)**

**[1] 211.2338 194.3379 207.3101 194.7738 188.3128 166.5227**

**> mean(x)+2\*sd(x)**

**[1] 230.063**

**> mean(x)-2\*sd(x)**

**[1] 170.0931**

**> hist(rnorm(10000, mean=200, sd=15), main="Normal")**

**> mean(x)**

**[1] 200.0781**

**> abline(v=mean(x), col='red')**

**> stdev<-sd(x)**

**> stdev**

**[1] 14.99249**

**> abline(v=mean(x)-2\*stdev, col='blue')**

**> abline(v=mean(x)+2\*stdev, col='green')**

**>**

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