1.

> data()

> PlantGrowth

weight group

1 4.17 ctrl

2 5.58 ctrl

3 5.18 ctrl

4 6.11 ctrl

5 4.50 ctrl

6 4.61 ctrl

7 5.17 ctrl

8 4.53 ctrl

9 5.33 ctrl

10 5.14 ctrl

11 4.81 trt1

12 4.17 trt1

13 4.41 trt1

14 3.59 trt1

15 5.87 trt1

16 3.83 trt1

17 6.03 trt1

18 4.89 trt1

19 4.32 trt1

20 4.69 trt1

21 6.31 trt2

22 5.12 trt2

23 5.54 trt2

24 5.50 trt2

25 5.37 trt2

26 5.29 trt2

27 4.92 trt2

28 6.15 trt2

29 5.80 trt2

30 5.26 trt2

> length(PlantGrowth$group)

[1] 30

> length(PlantGrowth$weight)

[1] 30

> mean(PlantGrowth$weight[ which(PlantGrowth$group=="ctrl")])

[1] 5.032

> mean(PlantGrowth$weight[ which(PlantGrowth$group=="trt1")])

[1] 4.661

> mean(PlantGrowth$weight[ which(PlantGrowth$group=="trt2")])

[1] 5.526

> x1=PlantGrowth$weight[ which(PlantGrowth$group=="ctrl")]

> x2=PlantGrowth$weight[ which(PlantGrowth$group=="trt1")]

> x3=PlantGrowth$weight[ which(PlantGrowth$group=="trt2")]

> boxplot(x1,x2,x3,main="Data of Plant Weight",ylab="weight",xlab="Condition")



2.

> utils:::menuInstallPkgs()

Warning: package ‘MASS’ is in use and will not be installed

> library(MASS)

> data(Cars93)

> attach(Cars93)

The following objects are masked from Cars93 (position 3):

AirBags, Cylinders, DriveTrain, EngineSize, Fuel.tank.capacity,

Horsepower, Length, Luggage.room, Make, Man.trans.avail,

Manufacturer, Max.Price, Min.Price, Model, MPG.city,

MPG.highway, Origin, Passengers, Price, Rear.seat.room,

Rev.per.mile, RPM, Turn.circle, Type, Weight, Wheelbase, Width

> (max(Min.Price)-min(Min.Price))/(2\*(1+log(length(Min.Price),base=2)))

[1] 2.566599

> hist(Min.Price,50, freq=FALSE,main="Density Curve of Min.Price",col=2)

> lines(density(Min.Price,width=10,n=200))



> (max(Max.Price)-min(Max.Price))/(2\*(1+log(length(Max.Price),base=2)))

[1] 4.781701

> hist(Max.Price,50, freq=FALSE,main="Density Curve of Max.Price",col=3)

> lines(density(Max.Price,width=10,n=200))



> (max(Weight)-min(Weight))/(2\*(1+log(length(Weight),base=2)))

[1] 159.8322

> hist(Weight,50, freq=FALSE,main="Density Curve of Weight",col=4)

> lines(density(Weight,width=10,n=200))



> (max(Length)-min(Length))/(2\*(1+log(length(Length),base=2)))

[1] 5.172991

> hist(Length,50, freq=FALSE,main="Density Curve of Length",col=5)

> lines(density(Length,width=10,n=200))



3.

> x=rnorm(100,100,10)

> x

[1] 102.07029 86.36367 109.15024 111.49734 121.92334 96.50210 99.67135

[8] 108.67609 113.98094 106.85495 122.25531 95.52238 92.56299 104.84408

[15] 97.96454 111.59797 105.15463 111.31198 120.39824 104.63443 94.50303

[22] 98.77219 89.48743 103.79562 103.94266 79.49667 91.35144 96.93792

[29] 99.62017 88.40951 104.68631 95.33132 105.61950 106.73039 99.70835

[36] 87.47185 105.87480 96.12127 91.31305 95.38671 109.98837 91.72964

[43] 90.94914 99.38196 114.39898 87.92045 89.44539 95.23814 95.99745

[50] 106.11057 87.99971 102.12082 93.71719 90.86861 100.03447 94.07503

[57] 101.22051 92.35953 106.38501 122.28526 101.14751 103.73003 98.24510

[64] 111.73583 88.17109 87.07768 83.45760 92.35764 97.16308 88.88460

[71] 101.13900 103.32090 94.23912 111.56238 94.36710 116.20712 114.99291

[78] 99.83614 112.52262 109.48150 107.33697 109.23122 86.81499 110.33711

[85] 85.28926 73.28200 105.80937 105.27311 113.12508 82.07371 96.28304

[92] 102.63509 100.80729 112.24056 119.55036 80.02812 92.93136 84.38372

[99] 101.56775 91.40120

> sum(x<80,na.rm=T)+sum(x>120,na.rm=T)

[1] 6

4.、

> pnorm(2.2,0,1)

[1] 0.9860966

> pnorm(1,0,1)-pnorm(-1,0,1)

[1] 0.6826895

> pnorm(1,0,1)-pnorm(-1,0,1)

[1] 0.6826895

> 1-pnorm(2.5,0,1)

[1] 0.006209665

> -qnorm(0.05)

[1] 1.644854

5.

> utils:::menuInstallPkgs()

--- Please select a CRAN mirror for use in this session ---

> library(abd)

> data(TwoKids)

> TwoKids

num.boys count

1 0 530

2 1 1332

3 2 582

>barplot(TwoKids$count,main="Number of boys in two-kids families",xlab="boys",ylab="counts",ylim=c(0,1500),names.arg=c("0","1","2"),col=c(2,3,4))

