一、

1 、

```
dataframe <- data.frame(name = c("zhangsan","lisi","wangwu","zhaoliu")
                        height = c(170,165,178,174),
                        weight = c(50,60,59,62),
                        age = c(13,18,45,32))
dataframe$weight <- as.factor(dataframe$weight)
```

	name	height	weight	age
1	zhangsan	170	50	13
2	lisi	165	60	18
3	wangwu	178	59	45
4	zhaoliu	174	62	32

2、

```
dataframe$weight <- as.numeric(as.character(dataframe$weight))
```

3、

```
> mean(dataframe$height[dataframe$age<20])
[1] 167.5
> mean(dataframe$weight[dataframe$age>=20])
[1] 60.5
```

二、

```
> #二、
> ##1
> name2=c("小张","小李","小王","小叶")
> grade2=c(90,87,54,51)
> dataframe2=data.frame(name2,grade2);dataframe2
  name2 grade2
1  小张      90
2  小李      87
3  小王      54
4  小叶      51
> fail=dataframe2$name2[dataframe2$grade2<60];fail
[1] 小王 小叶
Levels: 小李 小王 小叶 小张
> ##2
> name2_=c("小芬","小陆")
> test2_=c(87,76)
> normal2_=c(70,85)
> dataframe2_=data.frame(name2_,test2_,normal2_)
> dataframe2_$total=0.6*test2_+0.4*normal2_;dataframe2_$total
[1] 80.2 79.6
> ##3
> day1=c("mon","tue","wen");day1
[1] "mon" "tue" "wen"
> day2=c(day1,"thu","fri");day2
[1] "mon" "tue" "wen" "thu" "fri"
>
```

三、

1、

```
dataframe <- data.frame(name = c("lieren","shushi","saman"),
                        height = c(180,180,210),
                        weight = c(65,70,85))
```

2、

```
dataframe$name <- as.character(dataframe$name)
dataframe <- rbind(dataframe,c("fashi",165,45))
```

3、

```
dataframe <- dataframe[dataframe$name!="shushi",]
```

四、

1、

```
dataframe <- data.frame(name=c("A","B","C","D"),gender=c("男","女","女","男"),is.plus=c("是","是","否","否"),score=c(58,59,85,90),stringsAsFactors=F)
dataframe$score[dataframe$score<60&dataframe$is.plus=="是"] <- dataframe$score[dataframe$score<60&dataframe$is.plus=="是"]+10
dataframe$score[dataframe$score>80&dataframe$gender=="男"] <- dataframe$score[dataframe$score>80&dataframe$gender=="男"]-5
```

2、

```
dataframe <- rbind(dataframe,c("E","女","否",89))
```

3、

```
dataframe$acti <- 0
dataframe$acti[dataframe$gender=="男"] <- "否"
dataframe$acti[dataframe$gender=="女"] <- "是"
```

五、

```
> #五
> ##1
> grade5=c(61,75,90,82,NA)
> mean=mean(61,75,90,82);mean
[1] 61
> score=c(61,75,90,82,mean);score
[1] 61 75 90 82 61
> ##2
> score1=rep(score,c(4,2,1,4,2));score1
 [1] 61 61 61 61 75 75 90 82 82 82 82 61 61
> ##3
> normal=c(30,24,33,28,25)
> score2=0.7*score+normal;score2
[1] 72.7 76.5 96.0 85.4 67.7
>
```

六

1

```
dataframe <- data.frame(name=c("A","B","C","D"),gender=c("男","男","女","女"),yanguo=c(30,55,55,70),run=c(11,13,10,9),jump=c(2,2.5,3.5,4),stringsAsFactors=F)
```

2

```
dataframescore <- function(a,b,c,d,e)
{ score <- array(0,4);
  score[which(dataframe$gender=="男"&dataframe[,a]>=b)] <- 100;
  score[which(dataframe$gender=="男"&dataframe[,a]<b)] <- 100-c*(b-dataframe[which(dataframe$gender=="男"&dataframe[,a]<b),a]);
  score[which(dataframe$gender=="女"&dataframe[,a]>=d)] <- 100;
  score[which(dataframe$gender=="女"&dataframe[,a]<d)] <- 100-e*(d-dataframe[which(dataframe$gender=="女"&dataframe[,a]<d),a]);
  return(score)
}
dataframescore1 <- function(a,b,c,d,e)
{ score <- array(0,4);
score[which(dataframe$gender=="男"&dataframe[,a]<=b)] <- 100;
score[which(dataframe$gender=="男"&dataframe[,a]>b)] <- 100-c*(dataframe[which(dataframe$gender=="男"&dataframe[,a]>b),a]-b);
score[which(dataframe$gender=="女"&dataframe[,a]<=d)] <- 100;
score[which(dataframe$gender=="女"&dataframe[,a]>d)] <- 100-e*(dataframe[which(dataframe$gender=="女"&dataframe[,a]>d),a]-d);
return(score)
}

score <- t(rbind(dataframescore(3,70,1,60,1),dataframescore1(4,9,10,10,10),dataframescore(5,4.5,20,3,20)))
score1 <- cbind(dataframe,apply(score,1,mean))
```

3

```
dataframe[3,4] <- dataframe[3,4]-5
score <- t(rbind(dataframescore(3,70,1,60,1),dataframescore1(4,9,10,10,10),dataframescore(5,4.5,20,3,20)))
score1 <- cbind(dataframe,apply(score,1,mean))
```

七

```
#1
xiaoming.height = 165
xiaoming.height=xiaoming.height*(1+0.3)
```

```
> xiaoming.height
[1] 214.5
```

```
#2
names=c("aa","bb","cc","dd")
weight=c(65,66,64,63)
data5=data.frame(names,weight)
```

	names	weight
1	aa	65
2	bb	66
3	cc	64
4	dd	63

```
#3
tmp=seq(1,4,1)
result=10*10^tmp
```

```
> result
[1] 1e+02 1e+03 1e+04 1e+05
```

八、

1、

```
seq(1,100,1)
seq(2,100,2)
c(rep(1,3),rep(2,2),rep(3,4))
```

2、

```
dataframe <- data.frame(name=c("xiaoli","xiaowang","xiaohong"),height=c(188,177,166),stringsAsFactors = F)
dataframe <- cbind(dataframe,score=c(66,77,88))
dataframe[dataframe$name=="xiaoli",3] <- 99
```

3、

```
dataframe[which(dataframe$score==min(dataframe$score)),1]
dataframe[which(dataframe$height==max(dataframe$height)),1]
dataframe[which(dataframe$height>170&dataframe$score>60),1]
```

九

```
#四
#1
gender7 = c("F","F","F","F","F","M","M","M","M","M")
height7 = c(150,155,163,166,168,170,177,180,185,190)
weight7 = c(40,44,50,55,46,60,65,90,70,90)
data7 = data.frame(gender7,height7,weight7)
for (i in 1:length(gender7))
{
  if (data7[i,1]=="F")
  {
    if (data7[i,2]>165&data7[i,3]<50)
    {
      print(data7[i,])
    }
  }
}

for(i in 1:length(gender7))
{
  if (data7[i,1]=="M")
  {
    if(data7[i,2]>180&data7[i,3]<80)
    {
      print(data7[i,])
    }
  }
}
```

```
  gender7 height7 weight7
5       F     168      46

  gender7 height7 weight7
9       M     185      70
```

```
#2
stars.name = c("Jason Statham","Vin Diesel","Dwayne Johnson","Will Smith")
stars.name= tolower(stars.name)
```

```
> stars.name
[1] "jason statham"  "vin diesel"     "dwayne johnson" "will smith"
```

```
#3(利用矩阵计算)
left.matrix = matrix(c(1,1,2,4),nrow = 2,byrow = TRUE)
right.matrix = matrix(c(30,88),nrow = 2)
chicken.rabbit = solve(left.matrix,right.matrix)
```

```
> left.matrix
     [,1] [,2]
[1,]    1    1
[2,]    2    4
> right.matrix
     [,1]
[1,]   30
[2,]   88
> chicken.rabbit
     [,1]
[1,]   16
[2,]   14
```