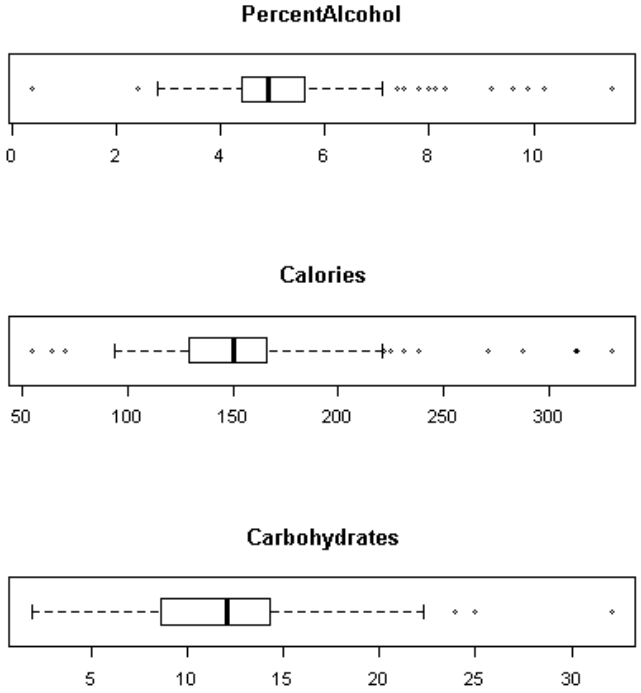
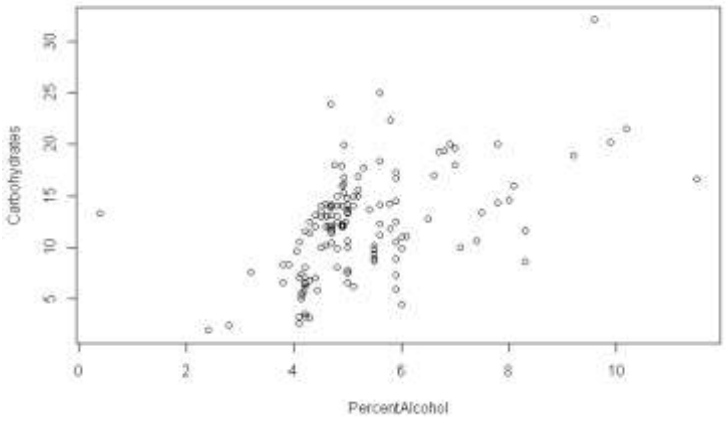
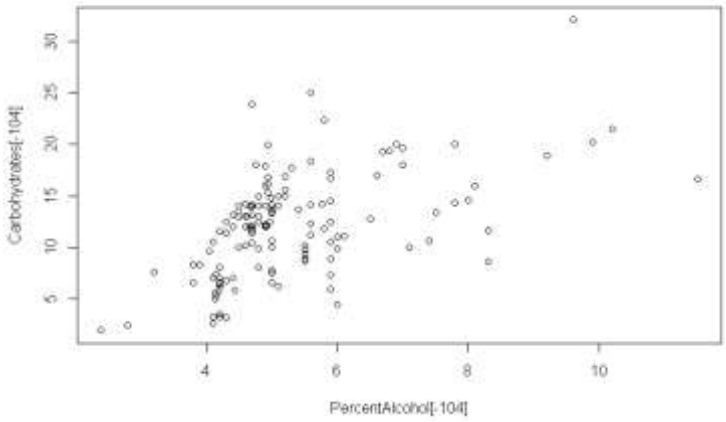
```
attach(ex02.26beer)

par(mfrow=c(3,1))
boxplot(PercentAlcohol,horizontal=TRUE,main="PercentAlcohol")
boxplot(Calories,horizontal=TRUE,main="Calories")
boxplot(Carbohydrates,horizontal=TRUE,main="Carbohydrates")
```

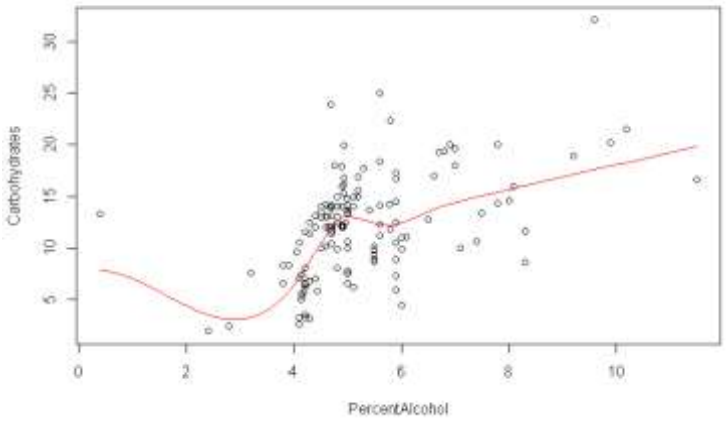
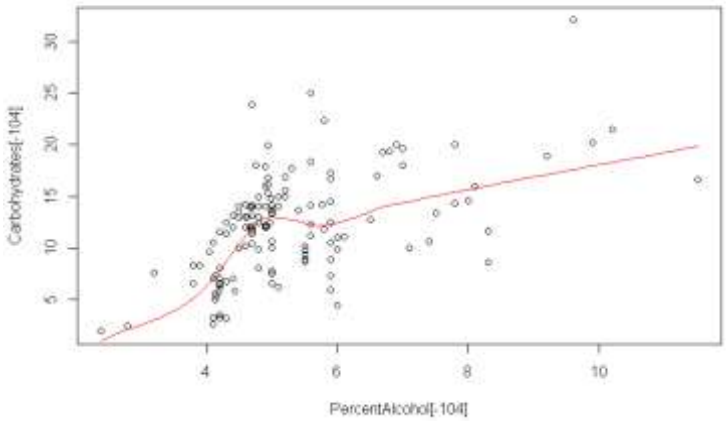



```
> c(summary(PercentAlcohol),sd(PercentAlcohol))
     Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
 0.400000  4.400000  4.900000  5.229000  5.600000 11.500000  1.428737
> c(summary(Calories),sd(Calories))
     Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
 55.00000 129.00000 150.00000 154.10000 166.00000 330.00000  44.49254
> c(summary(Carbohydrates),sd(Carbohydrates))
     Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
 1.900000  8.600000 12.000000 11.960000 14.300000 32.100000  4.905587
```

	`which.min(PercentAlcohol)`

	`> which.min(PercentAlcohol)`
	`[1] 104`
	`> PercentAlcohol[104]`
	`[1] 0.4`
	`> PercentAlcohol[which.min(PercentAlcohol)]`
	`[1] 0.4`

`plot(PercentAlcohol,Carbohydrates)`	`plot(PercentAlcohol[-104],Carbohydrates[-104])`
	

`lines(loess.smooth(PercentAlcohol,Carbohydrates),col="red")`	`lines(loess.smooth(PercentAlcohol[-104],Carbohydrates[-104]))`
	

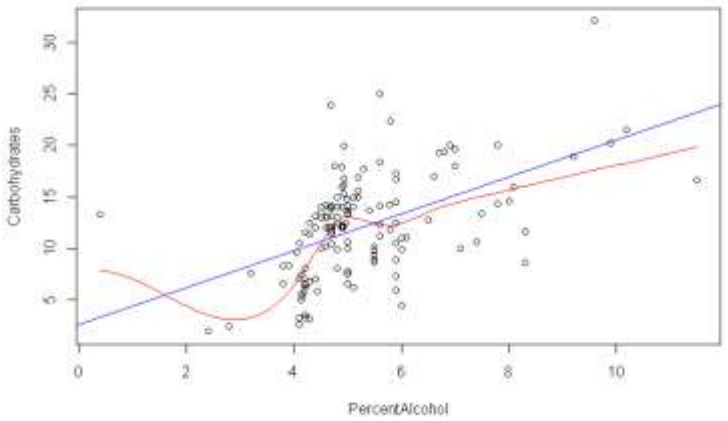
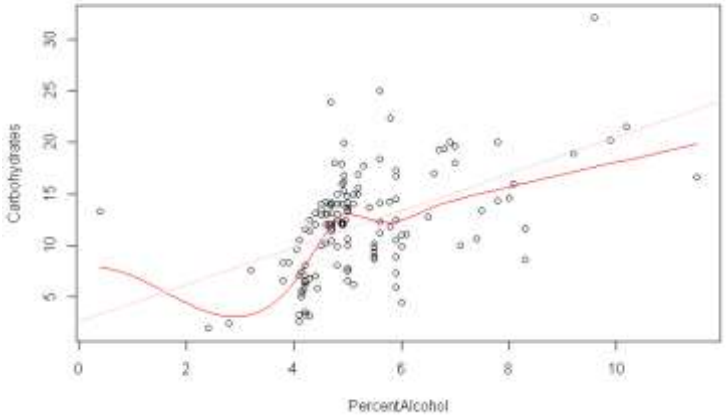
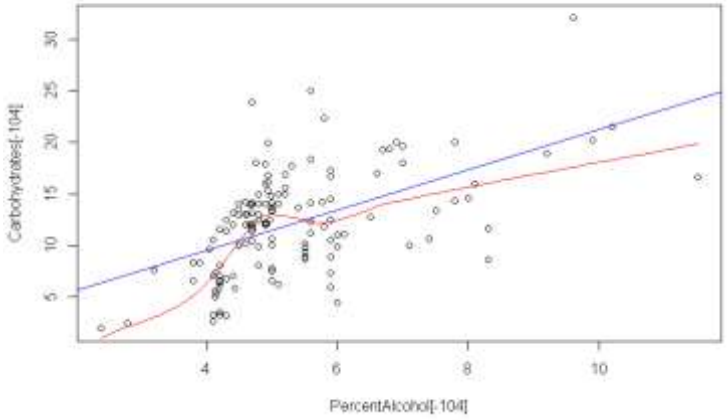
cor(PercentAlcohol,Carbohydrates) cor.test(PercentAlcohol,Carbohydrates) cor(PercentAlcohol,Carbohydrates)^2	cor(PercentAlcohol[-104],Carbohydrates[-104]) cor.test(PercentAlcohol[-104],Carbohydrates[-104]) cor(PercentAlcohol[-104],Carbohydrates[-104])^2
> cor(PercentAlcohol,Carbohydrates) [1] 0.5210898 > cor.test(PercentAlcohol,Carbohydrates) Pearson's product-moment correlation data: PercentAlcohol and Carbohydrates t = 7.5023, df = 151, p-value = 5.005e-12 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: 0.3950790 0.6278535 sample estimates: cor 0.5210898 > cor(PercentAlcohol,Carbohydrates)^2 [1] 0.2715346	> cor(PercentAlcohol[-104],Carbohydrates[-104]) [1] 0.5484863 > cor.test(PercentAlcohol[-104],Carbohydrates[-104]) Pearson's product-moment correlation data: PercentAlcohol[-104] and Carbohydrates[-104] t = 8.0338, df = 150, p-value = 2.576e-13 alternative hypothesis: true correlation is not equal to 0 95 percent confidence interval: 0.4265300 0.6508548 sample estimates: cor 0.5484863 > cor(PercentAlcohol[-104],Carbohydrates[-104])^2 [1] 0.3008373

lm(Carbohydrates~PercentAlcohol)

```
> lm(Carbohydrates~PercentAlcohol)

Call:
lm(formula = Carbohydrates ~ PercentAlcohol)

Coefficients:
   (Intercept)  PercentAlcohol
         2.605           1.789
```

lm(Carbohydrates[-104]~PercentAlcohol[-104])

```
> lm(Carbohydrates[-104]~PercentAlcohol[-104])

Call:
lm(formula = Carbohydrates[-104] ~ PercentAlcohol[-104])

Coefficients:
          (Intercept)  PercentAlcohol[-104]
                1.650                 1.958
```

?abline abline(2.605,1.789,col="blue")	# abline(2.605,1.789,col="blue")
	
abline(lm(Carbohydrates~PercentAlcohol),col="pink")	abline(lm(Carbohydrates[-104]~PercentAlcohol[-104]),col="blue")
	

summary(lm(Carbohydrates~PercentAlcohol))

```
> summary(lm(Carbohydrates~PercentAlcohol))

Call:
lm(formula = Carbohydrates ~ PercentAlcohol)

Residuals:
   Min     1Q Median     3Q    Max
-8.940 -3.145  0.586  2.628 12.904

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)      2.6049     1.2924   2.016   0.0456 *
PercentAlcohol   1.7892     0.2385   7.502    5e-12 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 4.201 on 151 degrees of freedom
Multiple R-squared:  0.2715,      Adjusted R-squared:  0.2667
F-statistic: 56.29 on 1 and 151 DF,  p-value: 5.005e-12
```

summary(lm(Carbohydrates[-104]~PercentAlcohol[-104]))

```
> summary(lm(Carbohydrates[-104]~PercentAlcohol[-104]))

Call:
lm(formula = Carbohydrates[-104] ~ PercentAlcohol[-104])

Residuals:
    Min      1Q  Median      3Q     Max
-9.3034 -3.0670  0.7311  2.6830 13.0661

Coefficients:
                     Estimate Std. Error t value Pr(>|t|)
(Intercept)            1.6495     1.3253   1.245    0.215
PercentAlcohol[-104]   1.9583     0.2438   8.034 2.58e-13 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 4.128 on 150 degrees of freedom
Multiple R-squared:  0.3008,      Adjusted R-squared:  0.2962
F-statistic: 64.54 on 1 and 150 DF,  p-value: 2.576e-13
```