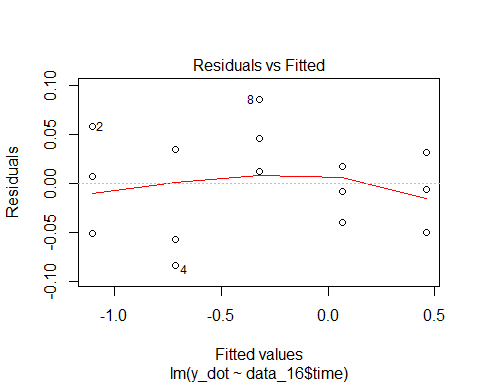
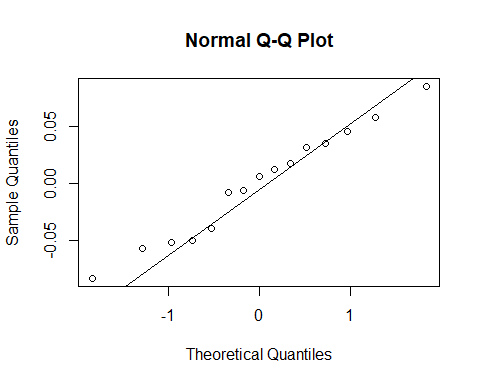


##### e. analysis the new residuals

# residual against fitted value  
plot(reg\_16\_c,1)



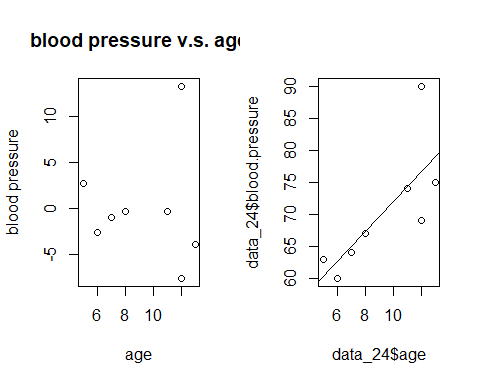
# test normality  
qqnorm(reg\_16\_c$residuals)  
qqline(reg\_16\_c$residuals)



#### problem 24

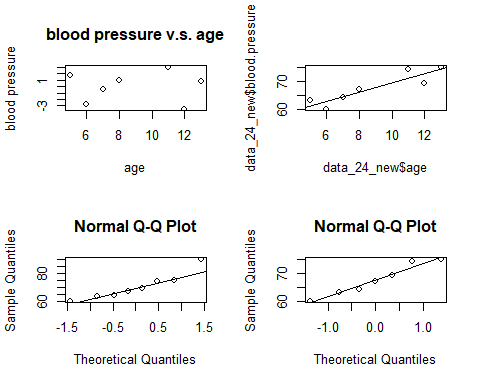
##### a. estimate the orginal data

data\_24 <- read.table('3.24.txt',header = FALSE, col.names = c('blood pressure','age'))  
reg\_24 <- lm(data\_24$blood.pressure ~ data\_24$age)  
par(mfrow=c(1,2))  
plot(reg\_24$residuals ~ data\_24$age, main='blood pressure v.s. age',xlab='age',ylab='blood pressure')  
plot(data\_24$blood.pressure ~ data\_24$age)  
abline(reg\_24)



##### b. estimate after omitting one possible outlier

data\_24\_new <- data\_24[-7,]  
reg\_24\_new <- lm(data\_24\_new$blood.pressure ~ data\_24\_new$age)  
par(mfrow=c(2,2))  
plot(reg\_24\_new$residuals ~ data\_24\_new$age, main='blood pressure v.s. age',xlab='age',ylab='blood pressure')  
plot(data\_24\_new$blood.pressure ~ data\_24\_new$age)  
abline(reg\_24\_new)  
qqnorm(data\_24$blood.pressure)  
qqline(data\_24$blood.pressure)  
qqnorm(data\_24\_new$blood.pressure)  
qqline(data\_24\_new$blood.pressure)



#### Problem 3.31

data\_31 <- read.table('3.31.txt',header = FALSE,col.names = c('indentical number','sales prive','finished square feet','nuber of bedrooms','number of bathrooms','air conditioning','garage size','pool','year built','quality','style','lot size','adjacent of high way'))  
set.seed(1)  
# obtain a random sample  
sample\_31 <- sample(500,200)  
data\_31 <- data\_31[sample\_31,]  
reg\_31 <- lm(data\_31$sales.prive~data\_31$finished.square.feet)  
summary(reg\_31)