36401_HW5

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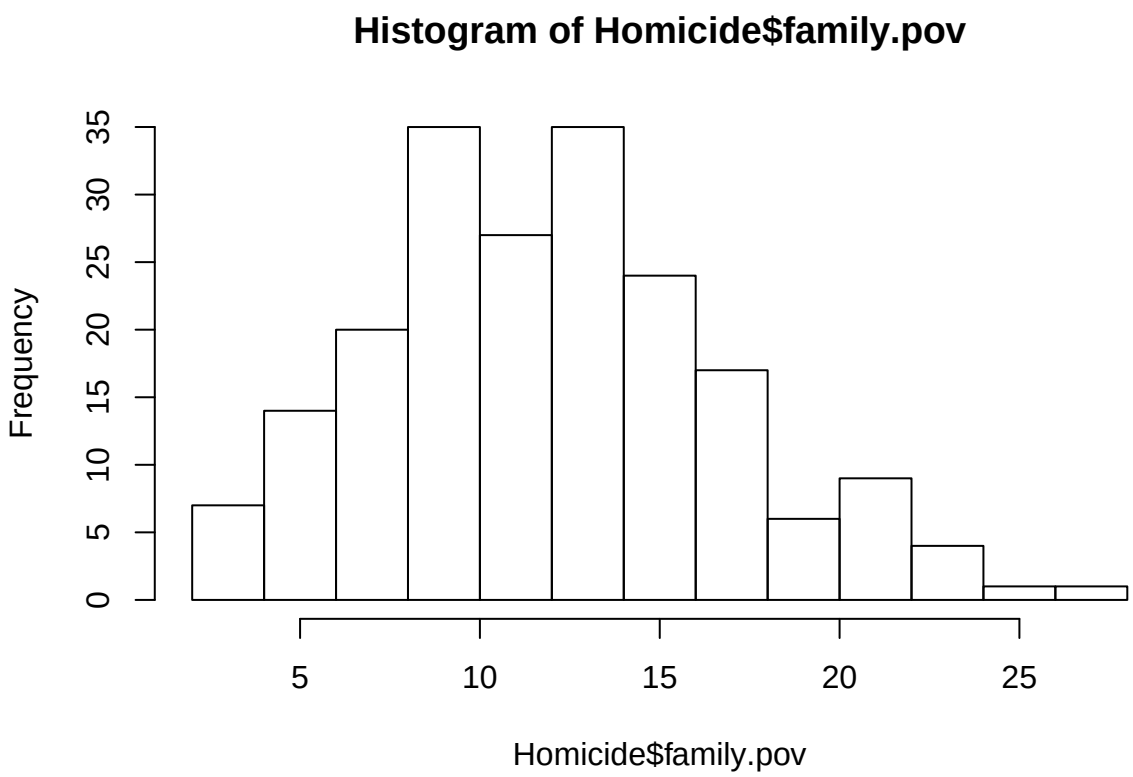
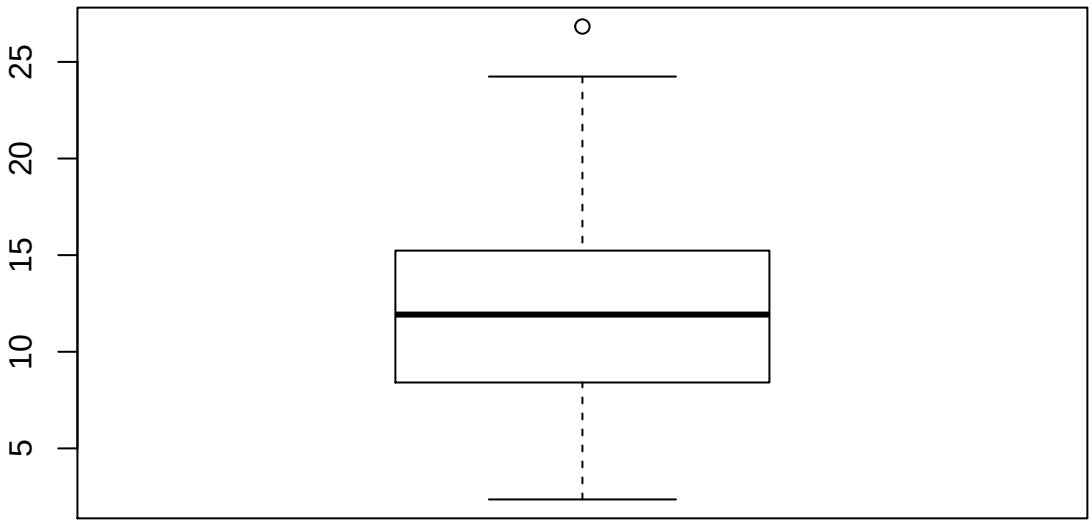
```
Homicide <- read.table("Homicide_sample.txt", header = TRUE)
```

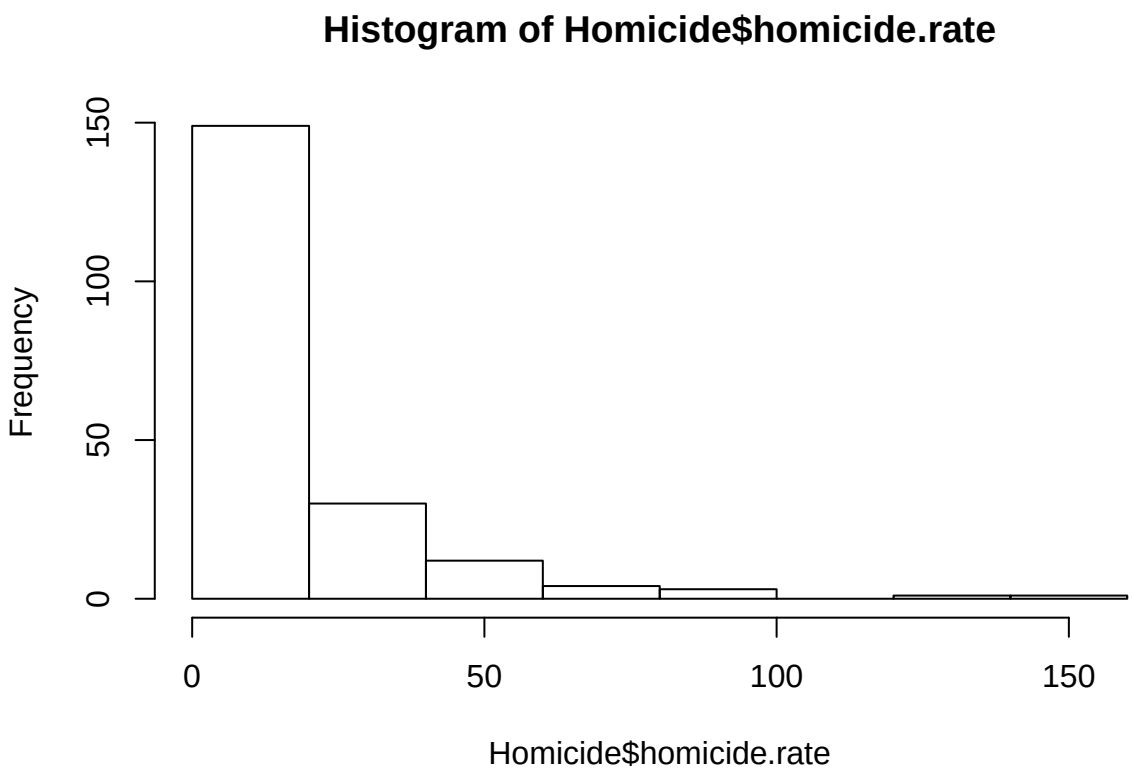
```
hist(Homicide$family.pov)
```



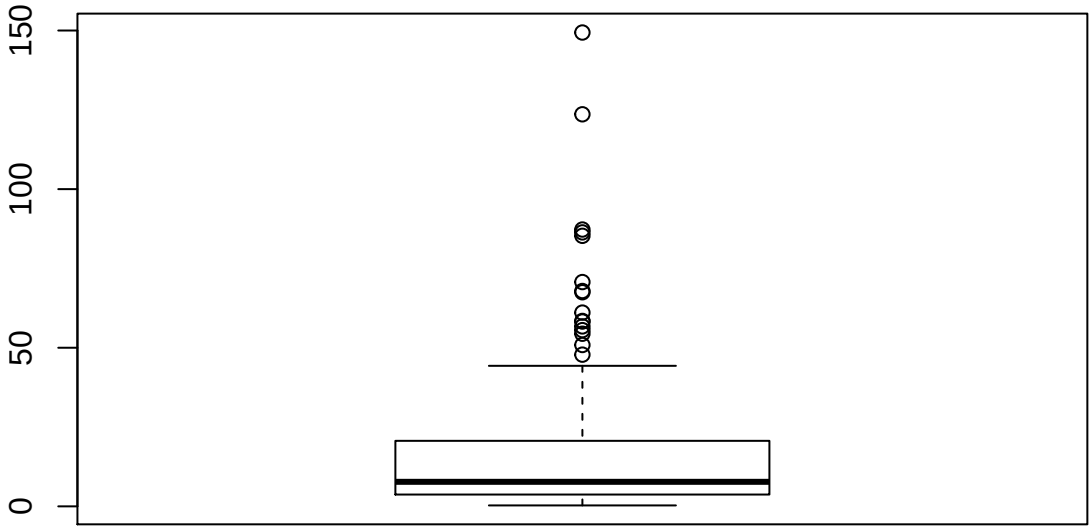

```
boxplot(Homicide$family.pov)
```



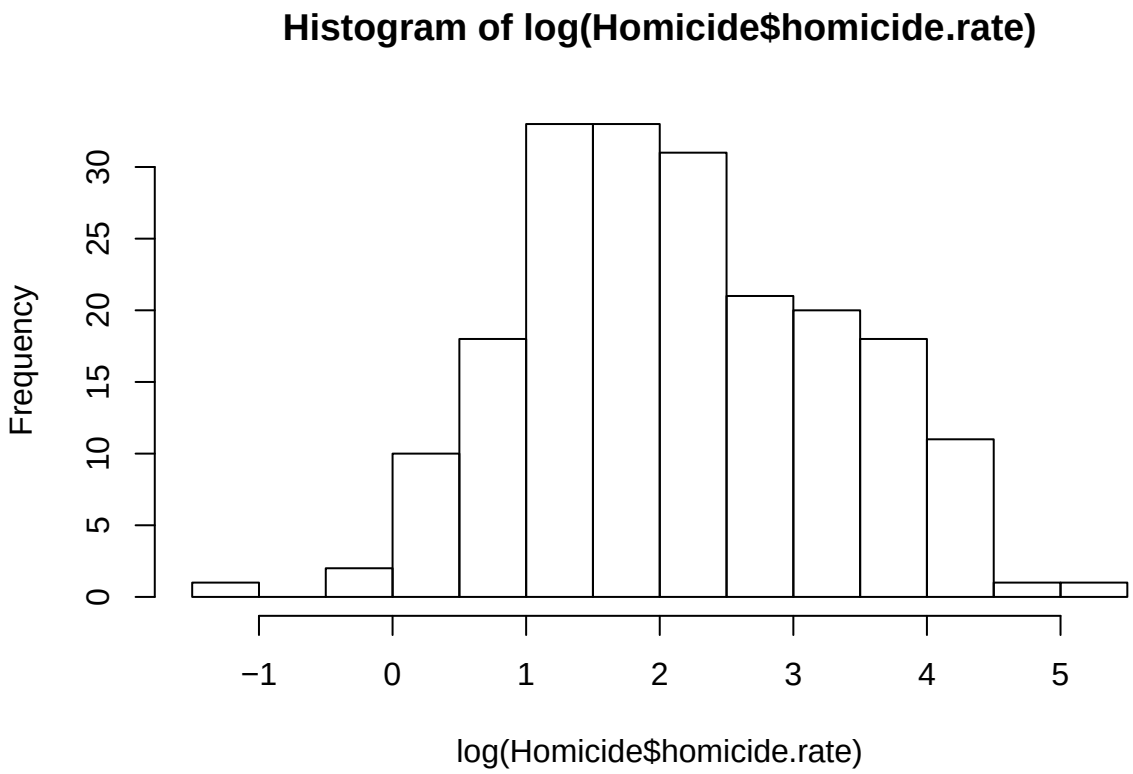
```r
hist(Homicide$homicide.rate)
```



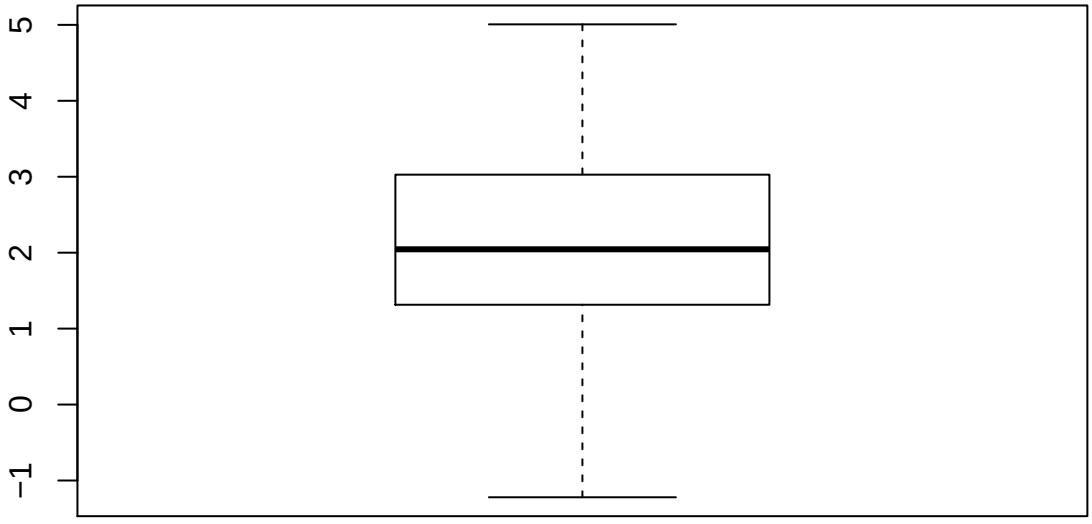

```r
boxplot(Homicide$homicide.rate)
```



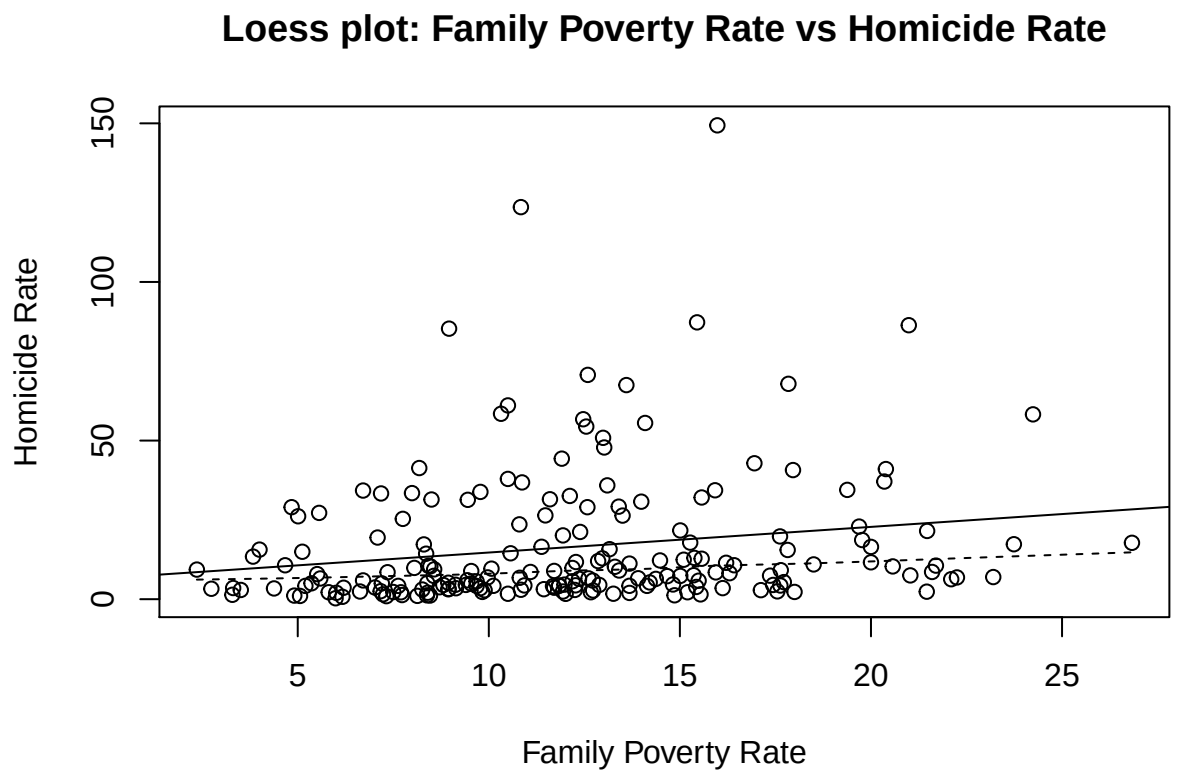

```r
hist(log(Homicide$homicide.rate))
```



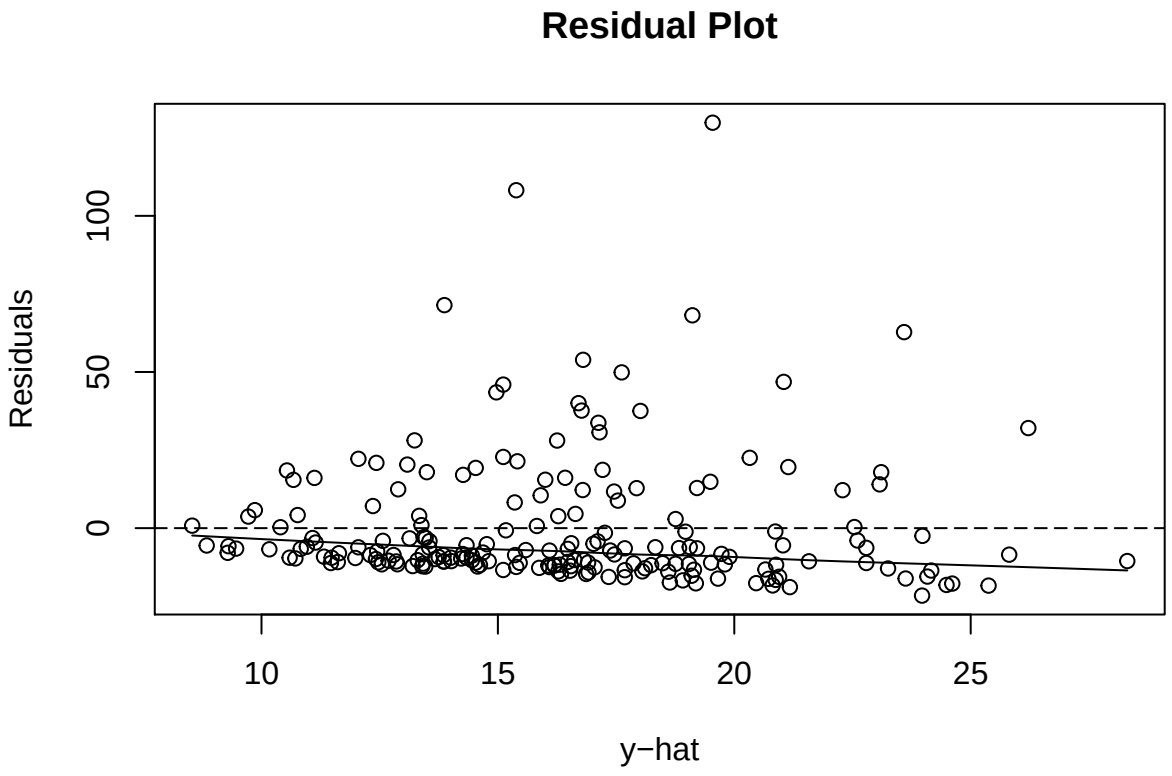

```r
boxplot(log(Homicide$homicide.rate))
```



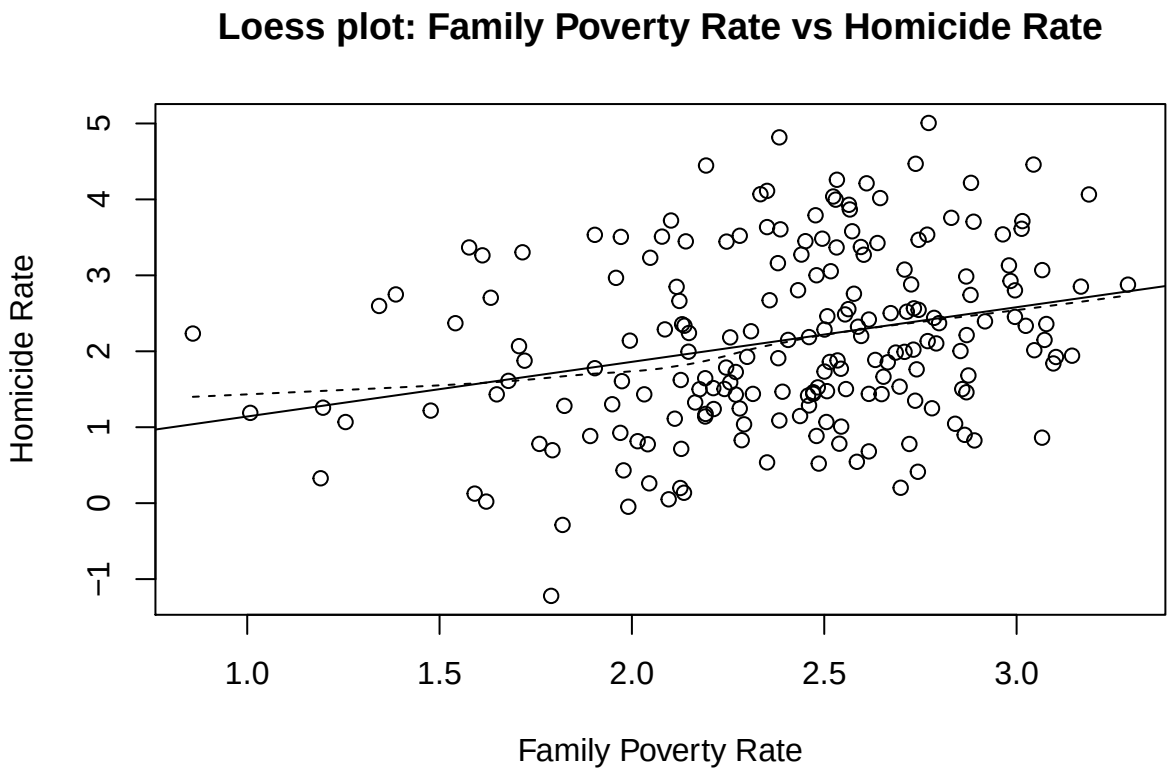

```r
#Original

plot(Homicide$homicide.rate~Homicide$family.pov, main = "Loess plot: Family Poverty Rate vs Homicide Ra
lines(lowess(Homicide$homicide.rate~Homicide$family.pov, f = 8/10), lty = 2)
abline(lm(Homicide$homicide.rate~Homicide$family.pov), lty = 1)
```



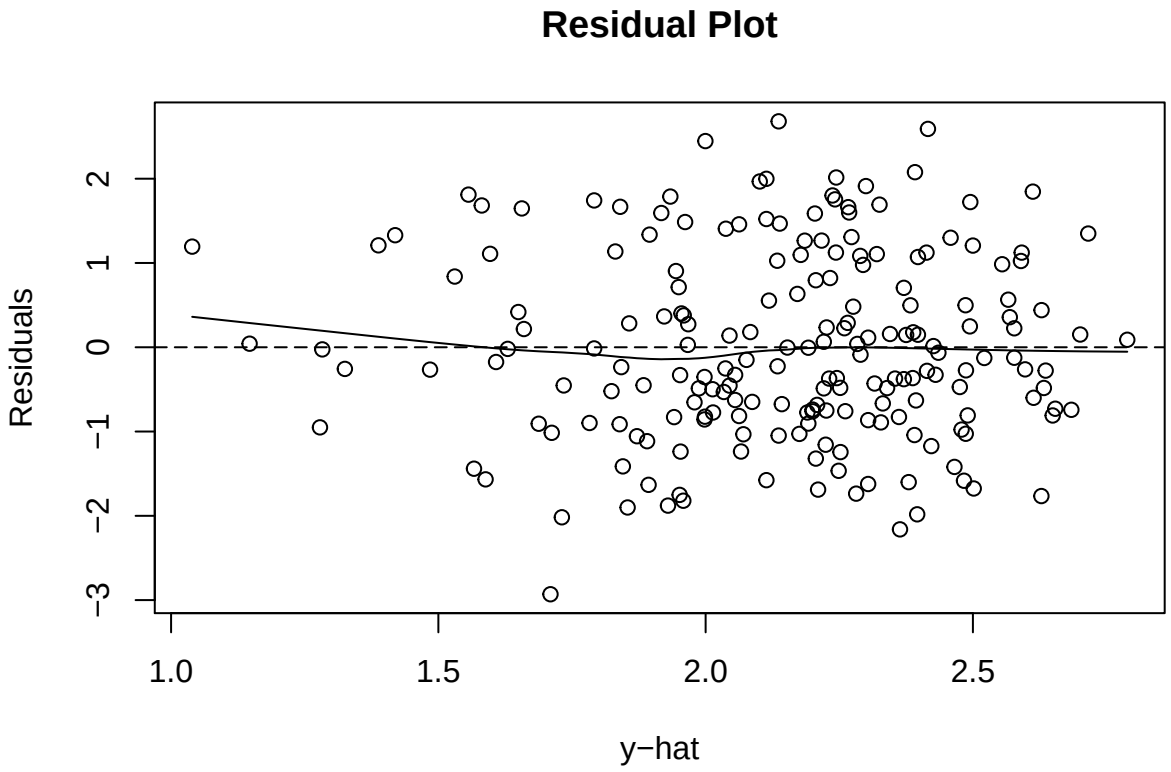

```
y.hat1 <- fitted(lm(Homicide$homicide.rate~Homicide$family.pov))
ep.hat1 <- resid(lm(Homicide$homicide.rate~Homicide$family.pov))
plot(y.hat1, ep.hat1, main = "Residual Plot", ylab = "Residuals", xlab = "y-hat")
abline(h=0, lty = 5)
lines(lowess(ep.hat1~y.hat1, f = 8/10, iter = 3), lty = 1)
```



```r
#log both
plot(log(Homicide$homicide.rate)~log(Homicide$family.pov), main = "Loess plot: Family Poverty Rate vs H
lines(lowess(log(Homicide$homicide.rate)~log(Homicide$family.pov), f = 8/10), lty = 2)
abline(lm(log(Homicide$homicide.rate)~log(Homicide$family.pov)), lty = 1)
```



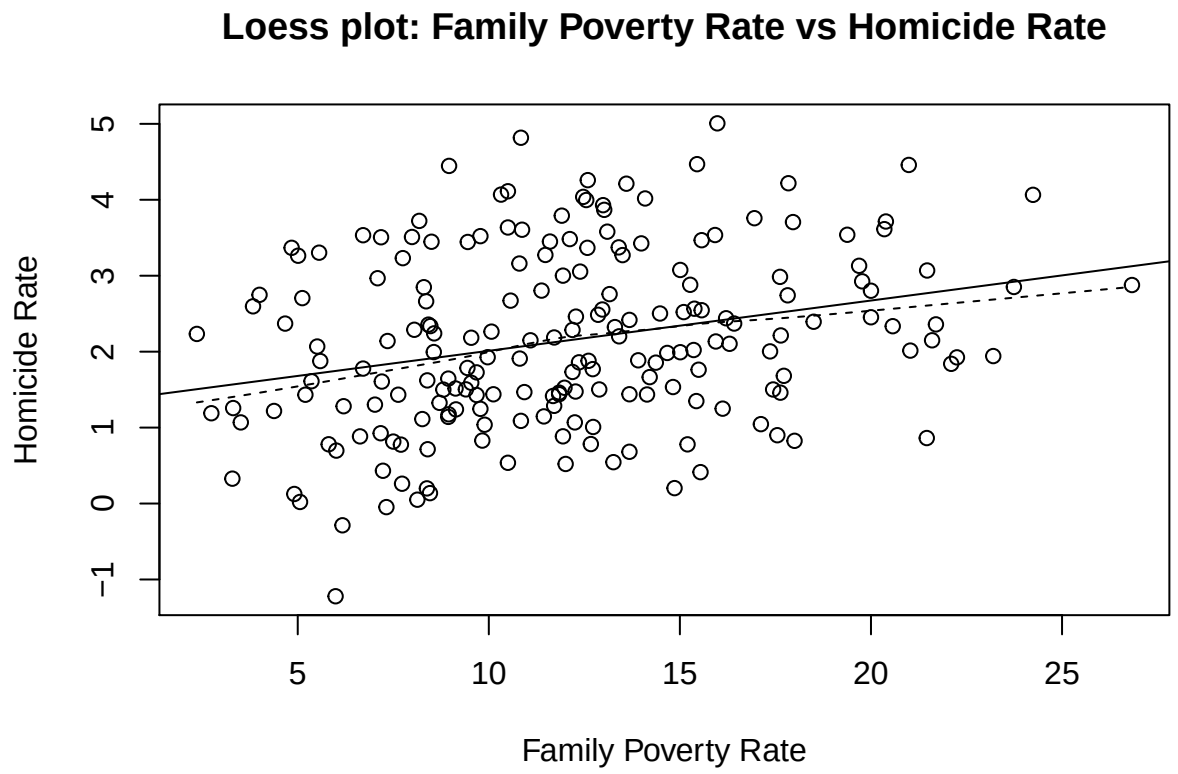

```r
y.hat2 <- fitted(lm(log(Homicide$homicide.rate)~log(Homicide$family.pov)))
ep.hat2 <- resid(lm(log(Homicide$homicide.rate)~log(Homicide$family.pov)))
plot(y.hat2, ep.hat2, main = "Residual Plot", ylab = "Residuals", xlab = "y-hat")
abline(h=0, lty = 5)
lines(lowess(ep.hat2~y.hat2, f = 8/10, iter = 3), lty = 1)
```



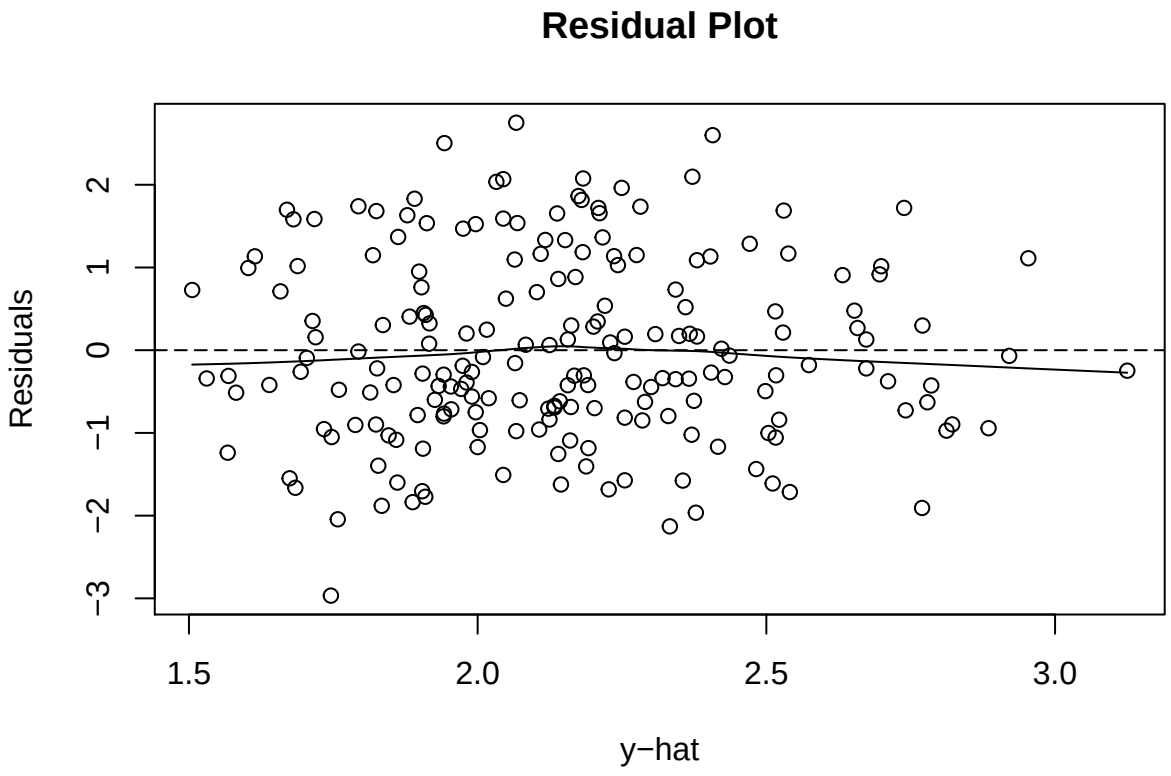

```
summary(lm(log(Homicide$homicide.rate)~log(Homicide$family.pov)))
```

```
##
## Call:
## lm(formula = log(Homicide$homicide.rate) ~ log(Homicide$family.pov))
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.9305 -0.8088 -0.1384  0.9790  2.6804
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)                 0.4215     0.4261   0.989    0.324
## log(Homicide$family.pov)    0.7196     0.1747   4.120 5.57e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.113 on 198 degrees of freedom
## Multiple R-squared:  0.07895,    Adjusted R-squared:  0.07429
## F-statistic: 16.97 on 1 and 198 DF,  p-value: 5.575e-05
```

```
plot(log(Homicide$homicide.rate)~Homicide$family.pov, main = "Loess plot: Family Poverty Rate vs Homici
lines(lowess(log(Homicide$homicide.rate)~Homicide$family.pov, f = 8/10), lty = 2)
abline(lm(log(Homicide$homicide.rate)~Homicide$family.pov), lty = 1)
```




```
y.hat3 <- fitted(lm(log(Homicide$homicide.rate)~Homicide$family.pov))
ep.hat3 <- resid(lm(log(Homicide$homicide.rate)~Homicide$family.pov))
plot(y.hat3, ep.hat3, main = "Residual Plot", ylab = "Residuals", xlab = "y-hat")
abline(h=0, lty = 5)
lines(lowess(ep.hat3~y.hat3, f = 8/10, iter = 3), lty = 1)
```

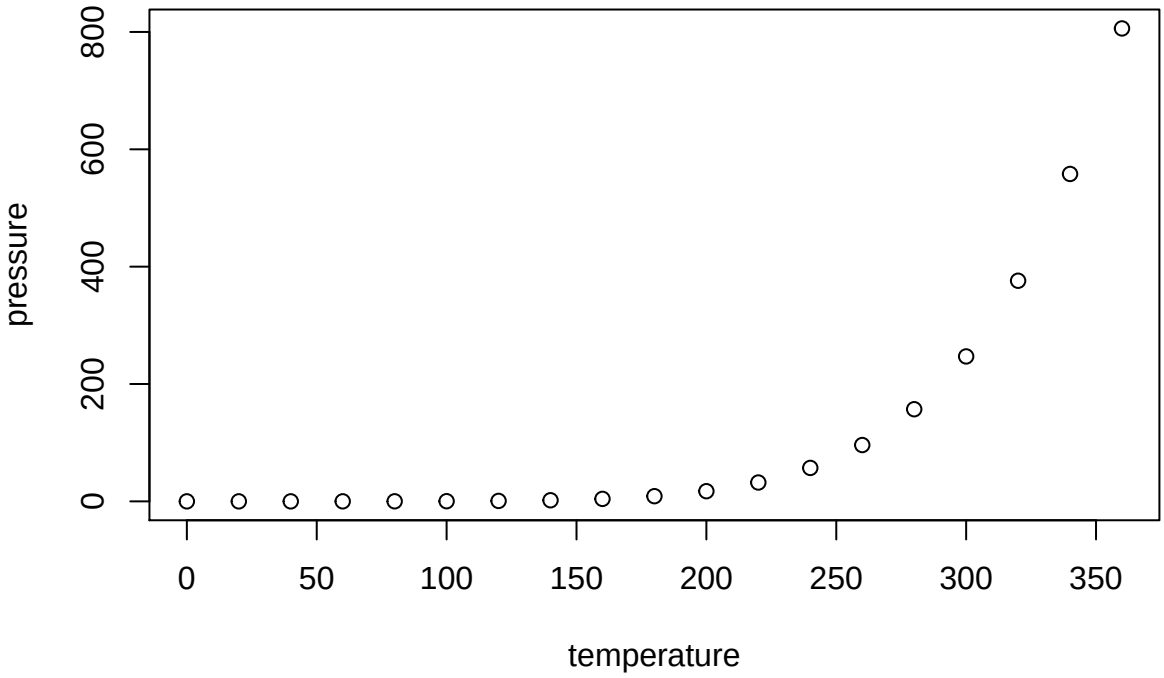


```
summary(lm(log(Homicide$homicide.rate)~Homicide$family.pov))
```

```
##
## Call:
## lm(formula = log(Homicide$homicide.rate) ~ Homicide$family.pov)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.9666 -0.7869 -0.2199  0.9099  2.7501
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)          1.34939    0.21059   6.408 1.06e-09 ***
## Homicide$family.pov  0.06618    0.01621   4.083 6.46e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.113 on 198 degrees of freedom
## Multiple R-squared:  0.07765,    Adjusted R-squared:  0.07299
## F-statistic: 16.67 on 1 and 198 DF,  p-value: 6.457e-05
```

Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.